Technology Strategy Board
Driving Innovation

Accelerating business innovation across the UK

The Technology Strategy Board, Regional Development Agencies and devolved administrations working in partnership

February 2010

The Technology Strategy Board, since its establishment as a standalone organisation in 2007, has been working in partnership with the English Regional Development Agencies and the devolved administrations of Scotland, Wales and Northern Ireland to accelerate the pace of innovation across the UK.

This review, which has been prepared jointly by the organisations involved, explains how these collaborations are working and the benefit to UK business.

The **Technology Strategy Board** is all about driving innovation. It stimulates technology-enabled innovation in the areas which offer the greatest scope for boosting UK growth and productivity. It promotes, supports and invests in technology research, development and commercialisation for the benefit of business. It brings people together to solve problems and make new advances.

It also advises Government on how to remove barriers to innovation and accelerate the exploitation of new technologies.

The **Regional Development Agencies** (RDAs) are helping to create prosperity across England.

Each RDA is working with partners to build on their region's natural assets, develop the knowledge-based economy, revitalise places and meet the needs of regional businesses.

The nine English RDAs are:

- Advantage West Midlands
- East of England Development Agency
- East Midlands Development Agency
- London Development Agency
- One North East
- Northwest Regional Development Agency
- South East England Development Agency
- South West Regional Development Agency
- Yorkshire Forward

The three **devolved administrations** (DAs) in Northern Ireland, Scotland and Wales have a similar role to the RDAs in supporting economic and business growth. They also have other responsibilities that in England are managed by the national government.

In Scotland, Scottish Enterprise and Highlands and Islands Enterprise work closely with the Scottish Government on the innovation agenda. In Northern Ireland, Invest Northern Ireland works with the Department of Enterprise, Trade and Investment. The Welsh Assembly Government manages both policy and delivery from within the Assembly support team.

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The Technology Strategy Board has a UK-wide remit. As such, our relationship with both the English Regional Development Agencies and the devolved administrations is critically important to our central mission to promote innovation for the benefit of UK business.

Over the past two years we have worked hard with the RDAs and DAs to align successfully our strategy, funding and activities. We now have a solid and productive two-way partnership in place in which RDA and DA programmes and investments directly support the Technology Strategy Board's agenda.

In turn our own approach and funding decisions are informed by and provide support to the technology priority areas identified by each of the RDAs and DAs. We also recognise and value the contribution the RDAs and DAs bring to our work both in providing local input, ideas and intelligence, and through their extensive reach into their business and wider communities.

The Technology Strategy Board looks forward to building further on this positive relationship and continuing to jointly support and invest in innovation for tomorrow.

Iain Gray, Chief Executive, Technology Strategy Board

The Technology Strategy Board and Regional Development Agency partnership enables each of us to bring greater value to our support for innovative businesses.

As Regional Development Agencies we bring a deep knowledge of the strengths and the needs of these businesses in our regions. We work with the Technology Strategy Board to inform and deliver national strategies that have maximum impact in our regions, increasing cutting-edge company research and development and university technology transfer. The RDAs bring the regional business community into the mix and assist them to engage with the Technology Strategy Board's technologists.

We have been so keen to work together that the RDA commitment given to Lord Sainsbury, to align £180m of activity over three years, has been greatly exceeded. RDAs now expect to deliver over £400m of support alongside the work of the Technology Strategy Board by March 2011.

Pam Alexander, Chief Executive, South East England Development Agency – lead RDA for Innovation

Driving business innovation

The UK faces strong international competition, with many countries investing heavily in research, technology, innovation and markets where they believe their companies will have a competitive edge.

In the UK we are making the same decisions – building on and supporting the areas where we have real strengths, in terms of the research base and business, and where we believe we can compete globally.

To support the growth of the economy we need to maximise the impact of our resources, pulling together national and regional activities and funding to make the UK an attractive place to invest in the development of new products, processes and services. Working together, the Technology Strategy Board, the Regional Development Agencies and devolved administrations, and the research councils can support researchers and businesses from the moment when a new idea is first conceived right through to the product or service reaching the marketplace.

Providing complementary support

By pooling our efforts and co-ordinating our resources we aim to ensure that businesses have the support they need at every stage of the journey in developing and commercialising their innovations.

This can mean direct support through investment in research and development, targeted support to help companies develop new capabilities, access to specialist equipment and the expertise they need to exploit it, and business space in which all types and sizes of innovative enterprises can flourish and grow.

Each business has different needs, so our support must be tailored to fit, with each partner contributing to the process what they do best. We aim to complement each other, not compete, and add value to the process by making it as simple as possible.

This document describes how the Technology Strategy Board, the English RDAs and the devolved administrations of Scotland, Wales and Northern Ireland are working in partnership for the benefit of businesses across the UK. A companion document will focus on the relationship between the Technology Strategy Board and the research councils.

In 2008/9 the RDAs invested over £100m in innovation and technology projects aligned with Technology Strategy Board priorities – and by the end of the current financial year 2009/10 they will have invested a further £160m. In total, for the period of 2008-11 the RDAs have so far aligned or planned to align over £400m of their funding with Technology Strategy Board strategic areas and innovation programmes.

We add value by working together, focusing on national priorities coupled with regional knowledge and close working relationships with business.

The active collaboration between the Technology Strategy Board, RDAs and DAs enables us to support projects of national significance, with international standing and with strong regional delivery.

Last year the RDAs invested over £100m in innovation and technology projects aligned with Technology Strategy Board priorities.

A further £160m will be aligned this year, and in total over the years 2008-11 these investments are planned to exceed £400m.

Working together

The Technology Strategy Board, RDAs and DAs all share the remit of driving economic growth through innovation and business growth. The Technology Strategy Board operates at a pan-UK level, setting priorities for technology and innovation where business is the beneficiary. The RDAs and DAs set priorities in relation to their own individual regional economies and geographic location.

Over the last two years we have seen a greater alignment between national and regional priorities, where the RDAs in particular are focusing on their regional strengths within the context of national priorities set by the Technology Strategy Board.

'The alignment between the RDAs, devolved administrations and the Technology Strategy Board is not only value enhancing, it also creates a vital opportunity for regional centres of excellence to contribute to national programmes.

It has the potential to become a consistent, inclusive dynamic which will boost overall UK performance.'

Richard Gregory OBE, Chair, Yorkshire Innovation

The relationship between the Technology Strategy Board and the RDAs is underpinned by the target set out in *The Race to the Top*, the report by Lord Sainsbury published in October 2007. This report led to the target for RDAs to align, over a three-year period, at least £180m of their funding against Technology Strategy Board priorities. Although not formally part of the target, the DAs have similarly worked with the Technology Strategy Board on how the activities they support align with and support national priorities.

Assessing regional investments

To measure progress towards the target, the Technology Strategy Board and the RDAs have mapped RDA investments where they align with the national priorities set by the Technology Strategy Board – from large-scale multi-million pound aerospace and transport projects through to local networks to help build regional capacity in emerging sectors and technologies.

The mapping exercise has proved invaluable in providing a clear picture of the investments being made, highlighting the opportunities for co-ordinating and linking investments, and for ensuring maximum benefit is achieved in support of national priorities.

Each RDA has drawn up a detailed prospectus (details of which can be found at pages 20-43) setting out a strategic overview of regional technology priorities, key sectors and industries, market opportunities, and strengths in the business and academic base. The prospectuses also detail the RDAs' planned investments to support innovation and technology in the present spending round and beyond, and how these align with the Technology Strategy Board's priorities and programmes.

Each prospectus reflects that region's current and future business needs and priorities, and in doing so demonstrates significant regional diversity. The focus is on where the RDAs can make their investments better, faster and more effective by reaching more businesses and getting those all-important ideas into the market.

Examples of aligned activity and funding include:

- large-scale planned investments as part of Technology Strategy Board innovation platforms
- significant RDA/DA co-investments in large-scale collaborative research and development projects
- development and funding of recognised centres of expertise that directly support and promote Technology Strategy Board priorities
- provision of demonstrator facilities to accelerate the take-up of new technologies
- RDA/DA practical and financial support to boost the numbers of knowledge transfer partnerships (KTPs) in their regions and to support the roll-out of the new shorter KTPs
- RDA/DA support for knowledge transfer networks (KTNs) to increase awareness of and participation in KTNs by businesses
- provision of specialist and targeted business support in priority technology areas.

Some of these and more are highlighted in the case studies that follow.

The table shows the current ongoing and future planned investments by the RDAs across the full range of the Technology Strategy Board's work, showing both the number of projects and the amount of funding aligned.

The prospectuses are flexible, dynamic, living documents, with the balance of investments expected to change over time; the table reflects a snapshot of the position in November 2009. Many of the RDAs also have large investment programmes in place to support the innovation platforms, which are an ideal way for RDAs to bring their funding alongside Technology Strategy Board resources in a planned programme to address key UK challenges.

The Technology Strategy Board is also working with the RDAs and DAs and with the research councils to develop an effective three-way partnership to build on and optimise each others' strengths. Universities also play a major role in regional economies as drivers of change and innovation as well as being major skills providers, and are widely represented on RDA boards. Many regional programmes will therefore involve their local universities and colleges.

Table 1: RDA investment for 2008-11 in projects aligned with Technology Strategy Board priorities (as of November 2009).

	2008/09	2009/10	2010/11	Total
Number of aligned projects in year	93	104	95	–
Spend (£m) (*projected)	101	160*	198*	459*

How are we taking the work forward?

Now is an important time to invest in innovation to ensure future growth and secure Britain's economic success. As a country we cannot expect to lead in every single area of economic activity and must therefore focus our resources on those areas where the UK has real strength and capacity, both in academia and business. We need to harness our resources effectively and efficiently at a national, regional and local level to deliver national priorities where the UK can be globally competitive.

Two mechanisms have been put in place by the Technology Strategy Board to achieve the alignment and closer joint working with the regions:

A **Strategic Advisory Group**, chaired by Iain Gray, Chief Executive of the Technology Strategy Board, and comprising the chairs of each of the English science and industry councils, together with senior representatives from the RDAs, DAs, research councils and the Department for Business, Innovation and Skills. This group focuses on strategic and long-term issues and takes a high-level overview of Technology Strategy Board and regional relationships.

A separate but related **Operational Advisory Group**, made up of key staff in the Technology Strategy Board, the RDAs and DAs. As the name suggests, this group is operational, advising on the content of new programmes and overseeing processes to align national/regional funding and delivery and to ensure an effective two-way channel of communication.

Aligning our priorities

The technology and innovation priorities originally established by the Technology Strategy Board match closely with those set out by the Government in its April 2009 report **New Industry, New Jobs**. Together, these highlight the areas where the UK has strength and where we believe we should invest for future success. There is an almost exact fit between these agreed national priorities and those set out in the RDA's Economic Development Strategies and in the Innovation Strategies that have been drawn up by the DAs.

Through the alignment process and against this framework we have now identified strengths and investment priorities across all of the English regions and devolved administrations, and these are set out in the map (see figure).

The map demonstrates the considerable variation that exists across the UK, and effectively counters the belief that there is much duplication of effort between regions. In important growth areas such as health, energy or bioscience there is considerable differentiation in the specific areas of interest, with regions focusing on different technology or application areas.

There is in fact a marked degree of complementarity emerging, rather than unhelpful and wasteful competition. For example, while several regions are keen to support technologies relating to low carbon vehicles, this interest spreads across a number of related fields including fuel cells, electrical and monitoring systems, lightweight materials, biofuels, advanced manufacturing and infrastructure development.

This diversity is further underlined in the latter part of this document, which provides summaries drawn up by each of the RDAs and DAs, setting out their regional strengths and priorities for action and investment.

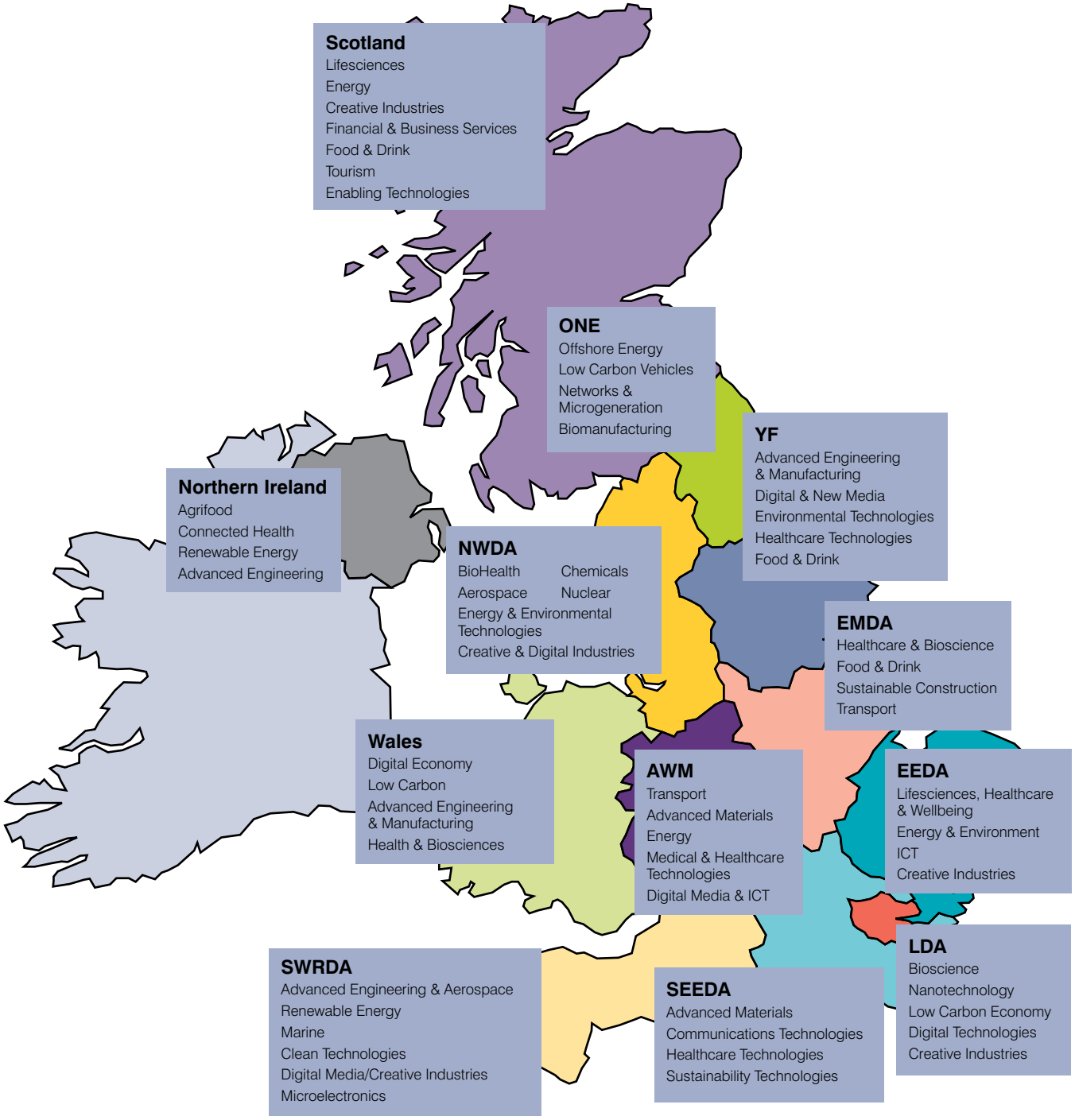
Catalysts for change

The RDAs and DAs play an important role as a catalyst and champion for change within their regions. Many of their strategies rely on relatively small amounts of regional investment leveraging other public and private sector resources – a key role for the RDAs and DAs being to broker partnerships and assemble a critical mass of resources to support significant innovation developments. The importance of this catalytic role, together with the RDAs' and DAs' understanding of their regional economy and reach into the business community, brings significant added value to their partnership with the Technology Strategy Board.

The RDAs and DAs also act as lead innovators and public sector entrepreneurs, using their resources, networks and links with Government to drive change forwards much faster than would otherwise occur. By taking an early risk to develop infrastructure, build specialist business space, invest in specialist equipment or create networks of expertise, they can encourage businesses to take a long-term view of investment in innovation.

Now the shared priorities have been firmly established we are investing jointly to ensure that we leverage public funding to achieve the best economic results possible. This includes work to identify nationally important centres which have international standing and then to promote these collectively, showing the wealth of expertise the UK has to offer and what makes it the place to do research and innovation.

Figure 1: Science and innovation priorities for the RDAs and DAs



Joint action in practice

Many businesses have already benefited from the existing joint investments between the Technology Strategy Board and the RDAs and DAs. These include participation in collaborative research and development projects, KTPs, national knowledge transfer networks and regional networks, and more recently SBRI (Small Business Research Initiative).

By working together using these programmes, the RDAs, DAs and the Technology Strategy Board are providing greater coherence to the support available to business and ensuring it more closely meets business needs.

The following case studies illustrate how the partnership works in practice.

Demonstrator programmes

Demonstrator programmes are designed to give companies the opportunity to show how their new technologies can work in practice, using real-life applications to test the technologies and spark ideas from other sectors for how they might adopt and incorporate them into their products and services.

The Technology Strategy Board's Ultra Low Carbon Vehicles Demonstrator programme is a large-scale example.

Low carbon vehicles: real-time testing of vehicles and infrastructure

Several of the English RDAs have been working with major and niche car manufacturers and supply chain companies to develop both whole vehicles and sub-systems for electric and hybrid vehicles. By joining forces with the Technology Strategy Board's Low Carbon Vehicles Innovation Platform as it developed its plans for the future, the RDAs were able to influence and extend the scope of the programme, with more companies able to take part.

Initially the demonstrator competition aimed to get 100 ultra low carbon vehicles on the road. With funding extended to £25m, including £2.5m from Advantage West Midlands and £1.5m from One North East in support of major proposals from their regions, over 340 vehicles will now be involved in the demonstration in locations across the UK including London and the South East, West Midlands, North East and Scotland.

Within the West Midlands there has already been a substantial increase in overseas enquiries about low carbon vehicle technologies, which could lead to new inward investments. The impact of this involvement has led to international attention focusing on West Midlands companies and their capabilities, which goes far beyond the initial scope of the programme.

In addition, follow-on infrastructure is being put in place so that vehicles can refuel/recharge between major population centres. Initially in the West Midlands, the plan was to create a route between Birmingham and Coventry. After collaborating with One North East, it has been decided to create a more ambitious corridor along the A1 between the two regions. At local authority level, Birmingham, Coventry and Newcastle councils have now begun an initiative to share best practice and to help avoid problems.

'The Ultra Low Carbon Vehicle Demonstrator programme, together with the Government's support for low carbon vehicles, is putting the UK in a leading position globally and has the potential to spark a personal transport revolution in UK cities.'

Edmund King, President, AA

Collaborative research and development

Collaborative research and development brings together businesses of all sizes and academia to work together on R&D projects in strategically important areas of science, engineering and technology – from which successful new products, processes and services can emerge. The Technology Strategy Board supports a wide range of projects, with the RDAs and DAs (as well as the research councils and government departments) providing support to specific areas or projects where there is alignment with their own regional priorities.

Reducing carbon emissions

Carbon abatement technologies enable large fossil-fuel power plants and CO_2 intensive industries to operate with substantially reduced CO_2 emissions. They can be part of the solution to climate change, make a major contribution to the UK economy, and help secure the country's energy supplies. The North of England has an energy-intensive economy, but many of the industries have the potential to diversify into the development and supply of carbon abatement technologies.

Through a £15m collaborative research and development competition with the Department of Energy and Climate Change and the Technology Strategy Board, The Northern Way (a collaboration between Northwest RDA, One North East and Yorkshire Forward) has been able to take a lead in developing a 'low carbon' economy in the North.

Using their connections with the local business base, the RDAs helped businesses to network and helped create strong demand for the competition. The partners' marketing sessions and briefings brought together many companies and universities that had not worked together before, or participated in collaborative research and development competitions led by the Technology Strategy Board.

An additional feasibility study stage was added to the competition at The Northern Way's request, offering up to £150k for small and medium-sized enterprises.

The Northern Way is now looking at other joint initiatives in:

- printable electronics – to create a pipeline of investment-ready proposals
- regenerative medicine – to share the cost of a specialist who will be part of a KTN to work across the North of England.

SBRI

SBRI (Small Business Research Initiative) is a programme led by the Technology Strategy Board that brings innovative solutions to specific public sector needs, by engaging a broad range of companies in competitions for ideas that result in short-term development contracts. Launched in 2009, to date 28 competitions have been held attracting over 1000 applications from businesses across the UK. As a result, 370 contracts have been awarded totalling over £24m – most of them to small businesses.

RDAs and DAs are actively supporting SBRI, both by bringing the programme to the attention of public sector bodies in their areas who might wish to use the programme, and by raising awareness of SBRI and promoting opportunities to relevant businesses looking to secure financial backing to develop their innovative ideas. There is considerable scope to expand this programme in the future and to benefit many more businesses.

Breaking into NHS procurement: a pilot in the East of England

Small businesses often find it hard to get the funding to develop their early ideas, and also to access government procurement contracts, and the NHS is no exception. So the East of England Development Agency (EEDA) teamed up with the Technology Strategy Board and the local strategic health authority to run a pilot programme for companies to develop their ideas combined with the opportunity to pitch them direct to hospital buyers.

Three SBRI competitions were launched in the East of England focusing on:

- managing long-term conditions
- patient safety
- keeping children active.

The competitions were led by the Technology Strategy Board with funding and support from the EEDA and the East of England Strategic Health Authority.

EEDA saw that there were two potential benefits for the region:

- better health outcomes for patients
- the opportunity for businesses to access some complex government procurement.

The programme will demonstrate to strategic health authorities nationwide that SBRI is a good way of de-risking potential innovations and encouraging more access for businesses with great ideas.

EEDA is funding the companies from the East of England, with the strategic health authority investing £1m in the scheme, and the Technology Strategy Board is funding companies from the rest of the UK. The strategic health authority will pay for the procurement of the successful innovations at the end of the process.

Creating the right conditions for successful innovation

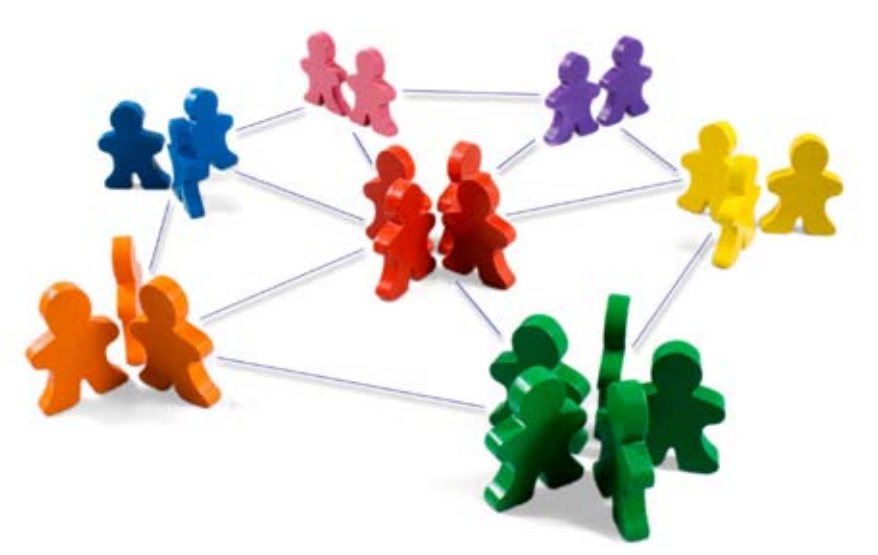
Knowledge transfer networks (KTNs) bring together people from businesses, universities, research, finance and technology organisations to stimulate innovation through knowledge transfer. Funded by the Technology Strategy Board and others, they bring together diverse organisations and provide activities and initiatives that promote the exchange of knowledge and the stimulation of innovation. There are currently 19 KTNs with a joint membership in excess of 60,000 people.

There are clear benefits from encouraging KTNs and RDAs/DAs to join forces and work together. KTNs offer direct access to a wide range of knowledge and expertise within a specific industry or technology area, while RDAs and DAs have a deep knowledge of the businesses in their area and effective channels of communication to them. Many regions have also developed various business networks which are now being linked into the national KTNs, to the mutual benefit of both.

Networking for innovation

Extending the reach of knowledge transfer networks in the South West

Knowledge Transfer Networks



Knowledge transfer networks operate at a national level, providing networking and brokerage services in a range of technology areas. As expert networks, they focus on specific areas of technology or markets to engage the broadest possible community of companies and academics across the UK.

KTNs work largely on a one-to-many basis while local networks in the regions can often offer one-to-one support. So by bringing them together, there are benefits to both networks in collaborating. The KTNs get to meet more businesses, while regional networks get access to more expertise. Both of which help the businesses they work with to get a better and more useful service overall.

The East Midlands Development Agency pioneered the concept of 'i-nets' – regional innovation support networks in priority technologies or sectors. These have worked closely with the KTNs to deliver over 180 business/university collaborations in two years. The South West Regional Development Agency has now initiated five innovation networks in its priority areas. An example of this is the Biomedical iNet, which aims to double the amount of activity for the Healthcare KTN through its local expert networks. Yorkshire has similar i-net regional networks and so is aiming to develop a similar concept.

The more businesses and academics that know of the possible support and benefits that each type of network can offer, the greater the potential for profitable knowledge sharing and collaboration.

Other regions may use this method to boost the quality and quantity of networking opportunities for their local businesses once the pilot is established.

Implementing national priorities

The Technology Strategy Board has responsibility for providing leadership and setting national priorities for technology and innovation in relation to business. The priorities it has set out help to provide a framework against which the RDAs and DAs can align their current and future investments and activities to achieve maximum benefit for the UK.

Nationwide Digital Britain initiatives

Recognising that some businesses may need support to get them into a position to tap into activities aligned with the Digital Britain strategy, the RDAs have been funding 'pre-investment' activities. These aim to create the conditions so that businesses may be successful in getting larger Technology Strategy Board investment for their innovations further down the line.

RDA projects to help businesses become 'innovation-active' include:

- Creative Beacon – getting to know more small businesses in the creative industries so more may use business support programmes
- ICT advisory service – trying to ramp up ICT use among small and medium-sized businesses to improve their competitiveness and reduce costs
- Northern Net – an infrastructure project to get the high-speed broadband needed for large-scale data transfers up and running and available to businesses.

The sorts of businesses that benefit from these efforts may not be ready to take on a Technology Strategy Board R&D project or may need high-speed broadband to take their business forward but just can't afford it. Every business starts innovating at some point and the RDAs are trying to create the conditions in which that first point of innovation will lead on to other opportunities such as the R&D competitions that the Technology Strategy Board offers.

Detection and Identification of Infectious Agents Innovation Platform

The Technology Strategy Board's innovation platforms are set up to meet a challenge which requires a novel approach to finding a solution. The regions can offer their expertise, links and resources to the effort. All of the innovation platforms have input from a lead RDA (working on behalf of the others) and DAs, helping to set their strategic direction and co-funding some of the initiatives and competitions.

The Detection and Identification of Infectious Agents (DIIA) Innovation Platform was set up in October 2008 to tackle the infectious diseases that are a constant threat to the health and wealth of the nation. In the UK approximately 10% of all deaths and 4% of all hospital admissions are attributed to infectious diseases, and 35% of GP consultations (50% in children) are due to an infection. Hospital-acquired infections cost the NHS around £1bn each year. Animal diseases can be equally costly and serious. The 2001 outbreak of foot and mouth disease cost the UK about £7bn; and bovine tuberculosis cost the taxpayer around £80m in 2007-8.

The Technology Strategy Board has a budget of £50m to address these challenges, with £5m coming from the Department of Health.

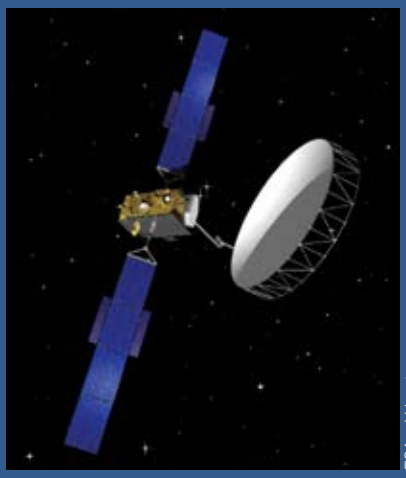
There has been strong interest from many regions across the UK, with positive engagement by the North West and South West RDAs, support from the Biotechnology ITI in Scotland, the ERBI network in the East of England and the London Technology Network.

The regions can offer direct resources and co-funding for Technology Strategy Board competitions, but more importantly access to some of the

partners that they work with in their regions. For example, accessing NHS procurement is better tackled at a regional level, so the RDAs' strong links to strategic health authorities, NHS trusts and university clinical departments can really help to build relationships. They also have a good understanding of the business base capable of exploiting these opportunities, and often have early knowledge of specialist spin-out companies emerging from universities.

There is also good evidence that networking for companies has an optimum 'drive-time' where businesses can get together and exchange ideas and information. At a regional level, networking of business, academics, clinicians and globally aware centres of excellence can really add value for those companies. For example, in the North West, while national networking through the KTN is an important part of business connections, BioNow has brought important opportunities for companies to be able to get together regularly and build a strong community in biosciences.

And looking to the future, the North West and South West RDAs will be working closely with the DIIA Innovation Platform team to make sure all opportunities across the UK at regional level are linked into this innovation platform, to the benefit of their local businesses, and the UK as a whole.



ESA - J Huart

Space: Alphasat

Last year was an important one for the UK's space industry.

This is the Alphasat satellite, the most advanced civilian satellite in the world. The three RDAs of the Greater South East invested £36m in Inmarsat's bid to win a €500m contract from the European Space Agency. This is now a successful project creating and retaining over 500 high-technology jobs, and already nearly £15m-worth of contracts have been issued to over 70 small businesses across the UK.

The Technology Strategy Board took responsibility for the commercial aspects of the British National Space Centre's work on satellite telecommunications and navigation in 2009. It is focusing on making the most of the UK's financial contribution to the European Space Agency in terms of commercial exploitation by UK firms and helping businesses apply 'space' technology.

The Technology Strategy Board is now looking to work with the RDAs to take advantage of the substantial opportunities, including downstream opportunities for all the regions.

Extending the reach of Technology Strategy Board programmes

The Technology Strategy Board operates across the whole of the UK, and is working hard to raise its profile and to ensure that all businesses, no matter where they are located, are aware of and able to access its programmes and the funding and support available.

The Technology Strategy Board organises and takes part in numerous events, conferences and exhibitions each year, many of which are run jointly with the RDAs and DAs. These joint events underline how these organisations are fully joined up. More importantly, they make it easier for businesses to find out about the range of support on offer and to secure the information and help that they need.

Innovate Scotland

Innovate Scotland was a major conference, exhibition and networking opportunity held at the Aviemore Highland Resort in October 2009.

Innovate Scotland was organised by Highlands and Islands Enterprise with the Technology Strategy Board, and in partnership with the Scottish Government, Scottish Enterprise and the Scottish Funding Council. It attracted some 300 individuals from businesses large and small, business representative organisations, universities and a wide range of other private and public sector bodies engaged in technology, enterprise, research and innovation drawn from across Scotland.

Targeted primarily at business, Innovate Scotland aimed to inform and inspire, showing how businesses can innovate to lay the foundations for growth. The event showcased the range of programmes, networks and support available from various sources to help business and encourage technology-enabled innovation.

Innovate Scotland addressed many aspects of technology innovation, with a special focus on the commercial exploitation of growth opportunities in a low carbon economy, energy, the digital economy and life sciences. The event was also actively supported by a number of others, including the KTNs, Business Gateway and the STEM Network.

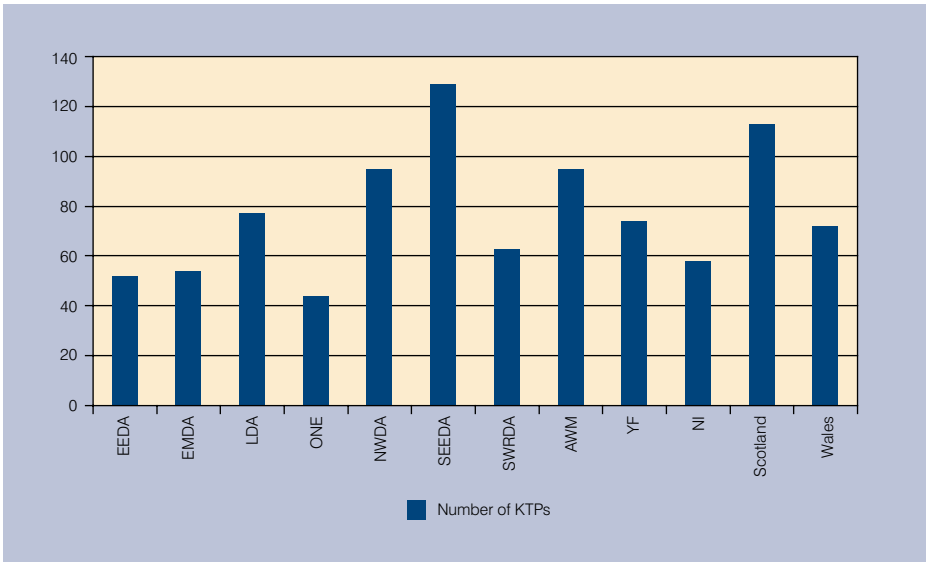
Richard Wallace

Nurturing and exploiting local expertise and skills

Knowledge transfer partnerships have an enduring popularity with business as a highly effective way to embed innovation into companies of all sizes. The new shorter KTPs, which are being piloted by the RDAs, will increase that popularity with even smaller companies.

By 2011 the RDAs will collectively have invested over £16m additional funding into KTPs to extend the opportunities to many more regional companies. Figure 2 shows the current UK distribution of KTP programmes, which are funded by the Technology Strategy Board and supported by a majority of the RDAs/DAs, research councils and other government partners.

Figure 2: UK distribution of knowledge transfer partnerships



Stourbridge company shows it's gotta lotta bottle

A Black Country firm which brightens up the world with high-tech coloured glass is in line for a top innovation award in the West Midlands.

Glasscoat International Ltd, based in Lye, Stourbridge, specialises in the design and assembly of processing plants that apply coatings including ultraviolet-based colour resins onto wine, spirit and perfume bottles and cosmetic jars for some of the world's biggest household names. This method of coating the glass has gradually replaced the traditional method of manufacturing coloured glass, which is more expensive, uses more fuel and cannot be recycled.

The company, which was founded five years ago and has an annual turnover of £600,000, has now been short-listed in the Impact through Innovation category at the Lord Stafford Awards West Midlands. These awards, which showcase and reward collaboration between universities and business, are supported by Advantage West Midlands.

Glasscoat International collaborated with Birmingham City University's Faculty of Technology, Engineering and the Environment on a KTP which resulted in projects that have achieved major energy savings and efficiencies. For the past two and a half years, knowledge transfer associate Adam Lee, from the university, has been playing a key role in helping to devise and implement improvements.

Among the efficiencies, the company's carbon footprint has been reduced by almost half, less factory space is now used because of more efficient production methods, and the consumption of raw materials has been cut, with cost savings of 40%.

It is estimated that total savings to the company from the knowledge transfer collaboration could be as high as £250,000 a year, and it is also hoped that up to £1m of new business could be generated. Interest in the company's products has already been shown from

companies in the UK and in the USA, South America, South Africa and Russia.

'The innovation achieved by Glasscoat in not only perfecting the use of ultraviolet-based resin but also working with the university to find ways of making even greater efficiency savings has already had a huge impact on the industry.'

Lord Stafford, Patron, Lord Stafford Awards

The future

The partnership between the Technology Strategy Board, RDAs and DAs is already delivering benefits through:

- the development of strategy and co-ordination of activities against national priorities informed by regional strengths and priorities
- the delivery of nationally significant programmes bringing together the necessary resources and expertise
- the visibility of the investments being made across the UK.

The aim now is to build on this and ensure that the joint investments being made are focused on those areas where the UK can compete globally, and are creating critical mass and delivering outputs which are internationally significant, thereby strengthening the UK's position as a global leader in innovation.

New industries, new jobs

In April 2009 the Government published an important policy statement, 'Building Britain's Future – New Industry, New Jobs,' which identified the priorities and action required to drive growth, create new opportunities for business, and secure more high-value jobs in the UK. The Technology Strategy Board is now working with the Department for Business, Innovation and Skills (BIS) and with the RDAs and DAs to drive this agenda forward, with a particular focus on strengths and opportunities in six key sectors: Low Carbon, Life Sciences, Composites, Plastic Electronics, Digital Industries and Advanced Manufacturing.

Looking ahead: emerging technologies

Long-term economic success depends on turning the emerging technologies of today into the growth business sectors of tomorrow.

The Technology Strategy Board is working with the RDAs, DAs, research councils, universities and others to identify and gather information about new and emerging technologies in the UK, and to assess their status and potential to grow. The shared objective is to make the difficult and lengthy process of commercialising new technologies faster and more successful, encouraging and helping UK business to turn these into new industries and to create significant new markets at home and abroad.

To help drive this process, the Technology Strategy Board is establishing an Emerging Technologies and Industries Steering Group. Led and chaired by business, the RDAs and DAs will also be represented on this group.

Regional assets and centres

An important and agreed priority is to maximise the value of the regional assets and centres of excellence across the UK. One of the many positive outcomes of the alignment work that has been undertaken, has been to draw up a full list of the innovation assets and centres based in each region. Together with the Technology Strategy Board's ongoing work with the research councils and universities, a comprehensive overview and appreciation is now emerging of the UK's centres of excellence, and of the scope and capacity of the major facilities and support available to business.

Specialist centres in the regions have the ability to deliver real value to businesses, and some centres have a truly national reach and an international significance. The Technology Strategy Board is now working with the RDAs and DAs, the research councils, BIS and others to understand how we can raise the profile and impact of these centres and ensure that they are better aligned with national priorities and delivering maximum benefit. It will also be important to identify gaps and opportunities for new centres in technology areas where the UK has particular strengths.

All of this recent work fits well with and will help to inform the Hauser Review, which was set up in January 2010 by BIS. The review's remit is to examine and make recommendations to Government on the current and future role of technology and innovation centres, which provide services to business, as part of the innovation system of the UK.

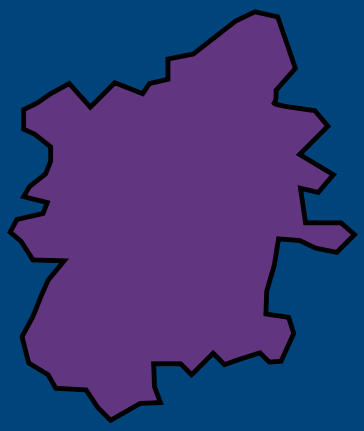
Conclusion

There is now a clear fit between national priorities and the actions and investments taking place across the UK to promote innovation and support innovative businesses. With effective working relationships firmly established, the Technology Strategy Board together with the RDAs and DAs are now well placed to use their combined resources and expertise to support business, accelerate innovation and help deliver economic growth.

Regional prospectuses: regional strengths and strategic priorities

West Midlands

www.advantagewm.co.uk



Science and innovation priorities

- Energy
- Medical and Healthcare Technologies
- Digital Media and ICT
- Advanced Materials
- Transport

Introduction

The regional Innovation and Technology Council (ITC) oversees the West Midlands innovation strategy. It comprises leaders from industry, academia and the public sector and has been created to provide a high-level forum in which future strategy on technology and innovation for the West Midlands region can be developed.

West Midlands innovation strategy

The ITC is focused on those areas that will make a major impact on the region's future prosperity by actively promoting innovation in key technology areas where the region has strength today. These include:

- Energy
- Medical and Healthcare Technologies
- Digital Media and ICT
- Advanced Materials
- Transport.

ITC innovation activities are delivered primarily through clusters, via business support, Birmingham Science City and directly via ITC programmes.

Strategic alignment with Technology Strategy Board priorities

Advantage West Midlands (AWM) has aligned around £160m of funding with the national technology strategy over 2008-11. The agency is the lead RDA on two of the national innovation platforms (Low Carbon Vehicles and Assisted Living) and is working on initiatives related to other platforms (Intelligent Transport Systems and Services and Low Impact Buildings) as well as exploring opportunities in possible future platforms such as Immersive Education.

Innovation infrastructure

Key projects include:

The £77m investment in the Birmingham-Warwick Research Alliance through **Birmingham Science City** creates a platform on which to build university-business collaboration and business access to research equipment and expertise, in the areas of **energy** (£29m), **advanced materials** (£26m), and **translational medicine** (£20m).

The **Advanced Sensors Innovation Project** has created an investment fund of over £6m to exploit intellectual property within QinetiQ at Malvern in conjunction with industry. A further project to exploit **quantum technologies** is under development in a partnership between QinetiQ, AWM and industry.

AWM is investing £30m over the next three years to support the **Low Carbon Vehicles (LCV) plan** from the National Automotive Innovation Growth Team. Part of this will go to a programme based at a regional hub and part will be co-invested with the Technology Strategy Board in support of its Low Carbon Vehicles Innovation Platform. AWM is also developing a **telematics test facility** for advanced vehicle and transport systems in support of the Intelligent Transport Systems and Services Innovation Platform.

Manufacturing is critical to the region and AWM is investing £40m, in partnership with the East Midlands Development Agency (emda), in the **Manufacturing Technology Centre** (MTC). Bringing together Tier 1 manufacturing companies and their supply chains, key Midlands universities and The Welding Institute (TWI), the MTC will create a step-change in the competitiveness of UK manufacturing performance focused around assembly, joining and fabrication technologies.

AWM has committed around £20m to support the development of **clinical trialling and experimental medicine facilities** within the Translational Medicine part of the Science City programme, as well as investing in a **Health Technologies Design Institute** at Coventry University.

In partnership with emda, AWM will support the location of the **Energy Technology Institute** in the Midlands at Loughborough University.

Collaborative research and development

In aerospace AWM has invested alongside other RDAs and the Technology Strategy Board to support the **Environmentally Friendly (aero) Engine**, and the **Next Generation Composite Wing**. AWM is also funding an **Aerospace Technology Exploitation Programme** enabling supply chain businesses to collaborate with universities.

Knowledge transfer partnerships

The number of KTPs in the West Midlands has been doubled, while the region has also introduced the shorter KTP.

Networking for innovation

Innovation (previously Index) vouchers: AWM has expanded the regional innovation voucher scheme.

The **Innovation Advisory Service** has been launched within Business Link West Midlands.

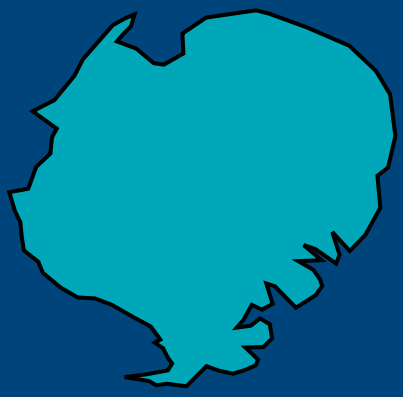
There are also specific innovation network-related **cluster programmes** around Environmental Sustainability and within the Medical Technologies in the areas of Assisted Living, Intelligent Health and Infection Control.

AWM innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Innovation infrastructure	£24.75m	£119.8m
Collaborative R&D	£1.53m	£0.78m
Knowledge transfer partnerships	£0.01m	£7.08m
Networking for innovation	£0.55m	£3.05m
Total	**£26.83m**	**£130.69m**

East of England

EEDA
East of England Development Agency



Science and innovation priorities

- Life Sciences, Healthcare and Wellbeing
- ICT (including Creative Industries)
- Energy and Environment

Strategic overview

Innovation strategy in the East of England is formed in response to the Regional Economic Strategy which informs the East of England Development Agency's (EEDA's) corporate plan. EEDA's strategy on innovation is guided by the advice of the region's Science and Industry Council (SIC). Comprising leading industry and academic figures from the region, the SIC has regularly invited Technology Strategy Board staff to its meetings.

The region's priorities for innovation are: developing a thriving culture of innovation and creativity; commercialising research and development (R&D) and adopting innovation; strengthening clusters around multinational enterprises and research-intensive universities; and positioning the East of England and Greater South East as global innovation regions.

EEDA's innovation strategy has a focus on three key sectors: Life Sciences, Healthcare and Wellbeing; ICT (including Creative Industries); and Energy and Environment (emphasis on Low Carbon Innovation).

EEDA majors on two forms of intervention: the development of 'next-generation' science parks and the consolidation of our enterprise hubs; and the development of knowledge transfer solutions.

Project-related activity

Life Sciences, Healthcare and Wellbeing

- **Colworth Park** is EEDA's first 'next-generation' science park, based at Unilever's R&D headquarters.
- Building on this experience, EEDA collaborated with GlaxoSmithKline to develop the **Stevenage BioScience Park**, an open innovation park for drug discovery, leading to improved survival rate of SMEs.
- **Health Enterprise East** is the regional NHS Innovation Hub and is helping collaboration with the Technology Strategy Board on the regional SBRI pilot.
- EEDA's involvement on **Norwich Research Park** concerns a complex multi-stakeholder project, including two Biotechnology and Biological Sciences Research Council research institutes, the University of East Anglia and the NHS.

ICT (including Creative Industries)

- At BT's R&D headquarters just outside Ipswich, EEDA and its partners are working with BT to create the **Innovation Martlesham Science Park**.
- On collaborative R&D, EEDA has been working with the South East England Development Agency, the London Development Agency, and the British National Space Centre/Technology Strategy Board on the **Alphasat** broadband satellite project.
- The **EPIC** enterprise hub has been developed around high definition, leveraging substantial European funding.

Energy and Environment (Low Carbon Innovation)

- **Hethel Technology Park** has been proposed to build on the existing Hethel Engineering Centre to identify collaborative USP for the region's automotive centres (Nissan, Ford etc).
- **OrbisEnergy**, the enterprise hub dedicated to building up a strong supply chain for offshore renewable energy.
- EEDA is working with the **Building Research Establishment** (BRE), an enterprise hub to strengthen SMEs, using BRE in regional programmes and collaborating with BRE on developing new initiatives around market-led procurement.
- EEDA has several smaller initiatives, such as the Eco-innovation Centre, an enterprise hub in Peterborough.

Specific links to the Technology Strategy Board and partner organisations

SBRI: The first region to pilot a Small Business Research Initiative procurement scheme, closely complementing the national pilot run by the Department of Health. The priority areas for applications will be those set out in the NHS East of England vision – *Towards the Best Together* (March 2009), in particular where innovation and new technology can make the most impact. Technology Strategy Board members sit on the working group.

KTPs: EEDA's 'KEEP' programme was one project evaluated by the Technology Strategy Board in its considerations for the short KTP scheme. Following discussions with the Technology Strategy Board, a Low Carbon Short KTP scheme was launched in early 2010.

Innovation platforms: EEDA has undertaken to sit on the panel for the Water Innovation Platform (if established). The region has agreed to supply a representative on the Detection and Identification of Infectious Agents Innovation Platform, through the EEDA-funded life sciences coordinator based in ERBI (Eastern Region Biotech Initiative).

Collaborative R&D: Both the Alphasat project and the Composite Wing project have engaged UK regional and national bodies, including the Technology Strategy Board.

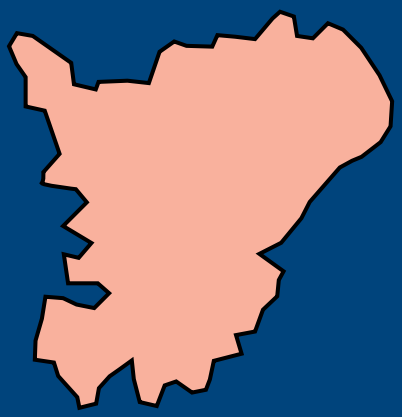
EEDA and its intermediaries remain in close connection with the various KTNs. EEDA has frequently worked with other RDAs and UK research councils on joint projects in respect of incubation and commercialisation developments at the research institute sites based in the region, such as **Norwich Research Park** and the **Babraham Institute**.

EEDA innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Innovation infrastructure	£7.26m	£15.00m
Collaborative R&D	£0.13m	£0.60m
Knowledge transfer partnerships	£0.20m	£0.40m
Networking for innovation	£0.00m	£0.00m
Total	**£7.59m**	**£16.00m**

East Midlands

east midlands development agency



Science and innovation priorities

- Healthcare and Bioscience
- Food and Drink
- Sustainable Construction
- Transport

Introduction

A Flourishing Region, the regional economic strategy from 2006-2020, aims to propel the East Midlands within the top 20 best-performing regions in Europe, and innovation is a key strategic priority within this strategy.

With support from the regional Science and Industry Council (East Midlands Innovation), the Regional Innovation Strategy (RIS) was launched in November 2006 to help stimulate focused investments in innovation from 2007 to 2010. The RIS is a £20m investment framework with the challenge of developing the East Midlands as 'a dynamic region founded on innovative and knowledge focused businesses competing successfully in a global economy'.

The RIS is centred on four key strategic themes which target agency and partner investments across four priority sectors:

- Theme 1: building innovation networks for knowledge exchange
- Theme 2: delivering high-quality innovation support for businesses
- Theme 3: creating an effective environment for innovation
- Theme 4: fostering enabling and emerging technologies.

Priority sectors:

- Healthcare and Bioscience
- Food and Drink
- Sustainable Construction
- Transport.

Implementation

The main implementation vehicles are **innovation networks**, known as **iNets**. Each priority sector has an iNet established, bringing together stakeholders who have an interest in supporting that sector. The partnership includes business support networks, universities and other private and public sector stakeholders. The iNet teams target businesses within the sectors and provide access to specialist innovation support products such as grants for R&D or specially developed regional products such as higher education institution collaboration funds and innovation support grants. To date the iNets have supported in excess of **750 businesses** and have set up over **180 higher education/business collaborations**.

Activities in support of the Technology Strategy Board priorities

The East Midlands Development Agency (emda) has pioneered the development and implementation of the Regional Technology Framework (RTF), identifying areas of technology strength, capability and future potential. The RTF is a complementary investment to the Technology Strategy Board under its collaborative R&D programme. The RTF is strategically an important document and will be used in future discussions on co-investment/alignment with the national technology priorities championed by the Technology Strategy Board.

Specific examples where the RTF has already had alignment with Technology Strategy Board priorities is with **GRACE**, the Galileo Research Applications Centre of Excellence based on the new University of Nottingham Innovation Park campus (£3.4m).

Other investments directed via the RTF products include **Pathfinder Grants** and **Demonstration Grants** (£4.5m).

Headline investments

Below is a selection of the key strategic investments delivered by the emda and a range of regional partners:

- **Higher Education Collaboration Fund** (£1.8m): encourages collaborative R&D projects between regional universities and has leveraged an additional £9m of external investment into the region.
- **Innovation Support Grant**: financial assistance for SMEs to help with the costs of external consultancy or expertise needed to deliver an innovation project. Up to £10k is available, matched in kind or cash by the business. To date over 150 grants have been awarded, totalling £700k.
- **FP7 Service** (£700k): provides a tailored package of support to meet the needs of individual businesses, helping to improve access to EU innovation funds.
- **iHubs**: dedicated facilities that provide a home for the iNet teams. In addition the facilities also demonstrate good practice in the use of innovative practices.
- **Innovation portal**: a dedicated on-line resource providing users access to all the innovation information they need (see www.eminnovation.org.uk).

Innovation platforms

The agency is the lead RDA supporting the Technology Strategy Board within the **Low Impact Buildings Innovation Platform**. This complements the agency's national lead role on construction and also provides an opportunity to engage the **sustainable construction iNet**. An investment totalling £7m will be made to support the innovation platform in the form of an exemplar carbon neutral demonstration building based in Daventry.

Green imaging

emda innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Innovation infrastructure	£6.39m	£13.93m
Collaborative R&D	£2.48m	£3.34m
Knowledge transfer partnerships	£0.00m	£0.80m
Networking for innovation	£1.46m	£5.22m
Total	**£10.32m**	**£23.29m**

North West England

Science and innovation priorities

- BioHealth
- Chemicals
- Aerospace
- Energy and Environmental Technologies, including Nuclear
- Creative and Digital Industries

The Northwest Regional Economic Strategy sets out the pathway to build a 'dynamic, sustainable international economy that competes on the basis of knowledge, advanced technology and an excellent quality of life for all'. To achieve this, the region needs to focus on seven key factors:

- developing new **enterprise** and growing existing companies
- developing higher added value activity in **regional sectors**
- **innovation** to improve productivity in all companies and exploiting the higher education institution base of the region
- exploiting the **science/R&D** base of the region
- improving **international competitiveness**
- using **ICT** more effectively and efficiently
- focusing on **sustainable consumption and production**.

Key internationally competitive sectors identified by the region are Biomedical, Advanced Engineering and Materials, Energy and Environmental Technologies including Nuclear, Digital and Creative Industries, Financial and Professional Services, and Food and Drink. The regional science strategy[1] is produced by the Science Council and Northwest Science, and is deliberately focused on four priority sub-sectors: BioHealth, Chemicals, Aerospace and Nuclear.

Some selected examples of investments aligned with the priorities of the Technology Strategy Board are given below.

Direct co-investments have been made alongside other RDAs and the Technology Strategy Board to support large aerospace projects, including the **Environmentally Friendly Engine**, **Next Generation Composites Wing** and **Autonomous Systems** via ASTRAEA. Further investments are expected to be made in other regionally relevant National Aerospace Technology Strategy projects.

Via The Northern Way, the region is the first to pioneer direct co-investment in an open collaborative R&D call for **carbon abatement technologies** – this is considered an important pilot to demonstrate how additionality can be achieved. A programme is in place using the European Regional Development Fund to increase the number of **KTPs** available in the region.

The Northwest Regional Development Agency (NWDA) has worked proactively to ensure that strategic projects seeking to exploit the economic potential of organisations within the region are integrated into the national infrastructure.

Examples include the new **Knowledge Centre for Materials Chemistry**, which brings together the leading-edge materials chemistry capabilities in the universities of Bolton, Liverpool, Manchester and the Daresbury Science and Innovation Campus for the benefit of industry under the management of an independent knowledge transfer team at the Chemistry Innovation KTN; and the **Composites Certification and Evaluation Facility**, which has been supported by the National Composites Network as a crucial missing piece of UK infrastructure.

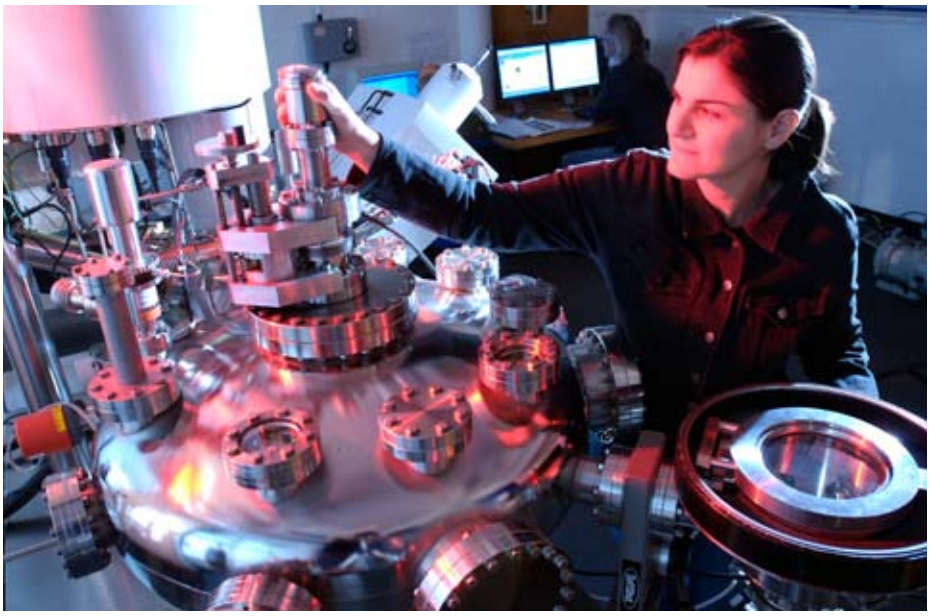
1 Northwest Science Strategy, 2007-2010

Bioinformatics is recognised as a technology requiring development to enable healthcare applications to realise their full potential, and **Northwest E-Health** promises to lead the way to enable the aggregation and processing of patient records to improve the delivery of clinical trials as well as many other health-related benefits.

NWDA leads RDA input into the Technology Strategy Board's Digital Britain and Creative Industries strategies, and discussions are ongoing regarding how closer links between **MediaCity:UK** (an infrastructure project of major national and international significance) and the Technology Strategy Board can be achieved. Work is also ongoing to explore and define new opportunities in partnership with the Technology Strategy Board in areas such as **Nuclear Energy**, the **Detection and Identification of Infectious Diseases**, **Stratified Medicine**, **Low Carbon Vehicles** and **Sustainable Consumption and Production**.

Pan-Northern activity

This summary sets out where NWDA spend was aligned for 2008/09 and is expected to be aligned to 2010/11. Some areas such as Biomedical are reflected less than might be expected due to the timing of investments in flagship projects such as the **National Biomanufacturing Centre**, **UK Biobank**, **NW Genetics Knowledge Park** and the **Liverpool School of Hygiene and Tropical Medicine**.



In addition, considerable capital investments in the region's science parks including **Daresbury Science and Innovation Campus, Manchester Science City**, **Liverpool Science Park** and **Liverpool Innovation Park** have also been excluded from the prospectus due to their deliberately 'non-sector/technology specific' nature. NWDA invests considerably in growing the region's innovation culture, for example a **£4.7m Innovation Voucher scheme**, **Innovation Support programme** (Knowledge to Innovate) and **Business Link Innovation Advisory Service** are all in place in the region.

NWDA innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Innovation infrastructure	£11.19m	£25.13m
Collaborative R&D	£1.43m	£5.10m
Knowledge transfer partnerships	£0.00m	£1.00m
Networking for innovation	£0.00m	£0.00m
Total	**£12.62m**	**£31.23m**

North East England

Science and innovation priorities

- Offshore Energy
- Low Carbon Vehicles
- Networks and Microgeneration
- Biomanufacturing

Introduction

Innovation is at the heart of North East England's economic strategy. Over recent years the region's economy has made significant progress, with the fastest growth rate in the UK and higher than average increases in business formation and exports. Science and technology-based businesses and investment have been central to this transformation.

The region has invested significantly in major infrastructure to enable innovation by business in new strengths such as renewable energy and new materials. The region will be taking this work forward with support of £135m investment in innovation from the European Regional Development Fund (ERDF) to run from 2007 to 2013.

While the region clearly faces challenges from current economic conditions, such facilities and projects are enabling universities, businesses and other partners to work together in new ways to bring world-leading innovations to the application stage, for markets as diverse as assistive technology for an ageing population, low carbon transport, and industrial-scale bioprocessing.

Technology Strategy Board and RDA alignment

Effective alignment is a two-way process, with the Technology Strategy Board strategy taking account of areas where regions have new opportunities to bring to the table and vice versa, or where regions have taken a national lead in an emerging area.

The region's previous and planned investment in innovation activity from both single programme and ERDF is substantial and has always being based on national and international opportunities linked to increasing regional economic performance. There is a significant opportunity to add value to this regional investment through the collaboration with the Technology Strategy Board, which will bring investment opportunities based on a proactive engagement between the regional partners and the Technology Strategy Board.

Implementation plan

One North East has worked through, with the Technology Strategy Board and other RDAs, a clear list of priorities where North East England can drive UK opportunities. The following areas have been identified through the alignment of these priorities:

Offshore Energy: The North East of England has long been identified for its leading businesses, research base, skills and physical assets for marine and offshore engineering. The NaREC campus in Blyth, with its national innovation assets for the wind industry, and the wind manufacturing base being developed on Tyneside and Teesside provide a significant opportunity to attract manufacturing investment and maximise UK content.

Low Carbon Vehicles: The North East's existing vehicle manufacturers, their supply chains and the potential synergies between low carbon vehicles (LCVs) and the region's chemical/process industries have led to One North East making public a £30m commitment to developing an aligned strategy for LCVs with the Technology Strategy Board, Advantage West Midlands and other partners to support the growth of an LCV industry. It is proposed that Technology Strategy Board funding will be used to undertake vehicle-related R&D while the One North East-funded project will design and install monitoring and charging infrastructure (including integrated renewable generation and energy storage).

Networks and Microgeneration: One North East has supported national pilots with the Department of Business, Enterprise and Regulatory Reform and the Department of Energy and Climate Change on community energy solutions; with the Design Council on Low Carb Lane as part of DOTT07 (Designs of the Time 07); and with Groundwork on carbon negative housing. Integration is under way with the Technology Strategy Board energy platforms including the Low Impact Buildings Innovation Platform and the proposed work on retrofit to ensure UK companies are well placed to take advantage of the introduction of new regulations for buildings and feed-in tariffs.

Low Carbon Materials: A new national facility and knowledge hub operated by CPI (the Centre for Process Innovation) has been invested in by One North East and the Technology Strategy Board to drive UK opportunities in the revolutionary printable electronics technology platform. Independent forecasts predict this will be a £16bn industry by 2015, and a field in which the UK is one of the internationally pre-eminent innovators.

Biomanufacturing: The opening of the CPI National Industrial Biotechnology Facility and its links to the national biocatalysis research centre at the University of Manchester has been supported by The Northern Way. This joined-up inter-regional innovation resource is closely linked in to the Biosciences and Chemistry Innovation KTNs.

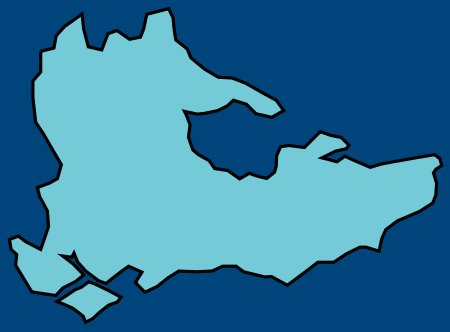
One North East innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Innovation infrastructure	£9.56m	£56.84m
Collaborative R&D	£0.00m	£0.00m
Knowledge transfer partnerships	£1.70m	£1.30m
Networking for innovation	£0.00m	£0.00m
Total	**£11.26m**	**£58.14m**

South East England

SOUTH EAST ENGLAND DEVELOPMENT AGENCY

Working for England's World Class Region



Science and innovation priorities

- Advanced Materials
- Communications Technologies
- Healthcare Technologies
- Sustainability Technologies

Introduction

The South East has a strong and diverse business stock, alongside a wealth of knowledge base resources. Innovation support in the South East builds on this through complementing national collaborative schemes and providing support for innovative places, including a network of science and innovation campuses.

The South East Science, Engineering and Technology Advisory Council (SESETAC) advises on how science and innovation can drive up South East business performance. Membership includes leaders from business, academia and the public sector.

South East Strategy for Technology

The South East Strategy for Technology, developed by SESETAC, supports the region's vision 'to be a world class region achieving sustainable prosperity'[2], and enables the South East to play its part in achieving the national vision for the UK to be 'a global leader in innovation and a magnet for innovative businesses, where technology is applied rapidly, effectively and sustainably to create wealth and enhance quality of life'[3].

The South East Strategy for Technology embraces the strong case for focusing interventions on key priority technologies and sectors, but the South East England Development Agency (SEEDA) will also take a responsive and flexible approach to changing economic circumstances.

Based on analysis of regional strengths and market opportunities, SEEDA proactively encourages activity in four areas of technology activity, each with potential to bring economic benefit to the region:

- Advanced Materials
- Communications Technologies
- Healthcare Technologies
- Sustainability Technologies.

SEEDA has aligned over £30m of funding with the National Technology Strategy over 2008-11, targeting Technology Strategy Board activities that are of particular importance to the South East, to leverage funding into the region and maximise the added value of SEEDA investment.

2 The South East Regional Economic Strategy 2006-2016

3 *Connect and Catalyse: A Strategy for Business Innovation 2008-2011*, Technology Strategy Board

Alignment of infrastructure

The three science and innovation campuses are the major programmes of innovation infrastructure in the South East; these are:

- Harwell Science and Innovation Campus: an internationally renowned centre of excellence for **advanced materials**, and that is increasingly supporting collaborative work for the **space sector** in the region, across the UK and internationally. Building on the growth potential for the space sector in the SEEDA/OEF report and the opening of the ESA Research Centre, SEEDA is working with the Technology Strategy Board, the Science and Technology Facilities Council and other stakeholders to develop an International Space Innovation Centre on the campus.
- Dartford Campus of the Institute for Sustainability: undertaking research, development and demonstration activities on **sustainability**, sharing and accessing best international practice to help create a world-leading eco-region in the Thames Gateway.
- A third campus focused on **communications** is under development and will build on the South East academic and business strengths in communication technologies; the first application being developed is telecare.

Collaborative research and development

SEEDA continues to invest in regional collaborative research and development, which will be aligned through liaison with the Technology Strategy Board, in areas including intelligent transport, electric vehicles and security technologies. In addition, SEEDA supports major projects under the National Aerospace Technology Strategy.

Knowledge transfer partnerships

SEEDA will continue to support KTPs financially and has also delivered the Business Plus scheme, offering shorter placements to businesses that cannot afford the commitment of a full KTP placement. The scheme supported more than 30 placements and involved a wider range of companies than take up the KTP scheme. This has now become part of the national product portfolio as the Technology Strategy Board's new, shorter KTP scheme.

Networking for innovation

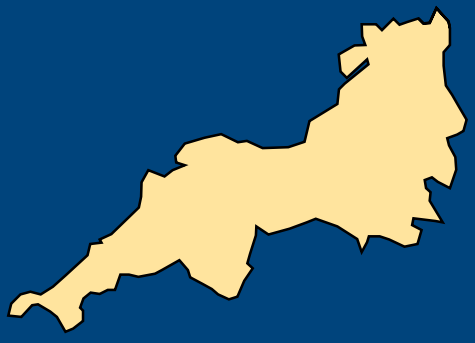
Alignment between the South East knowledge networks and the Technology Strategy Board's knowledge transfer networks has been established and offers a two-way flow of information between the Technology Strategy Board and regional SMEs. The knowledge networks are established where there is a demonstrable business need and often bridge the activities of the KTNs. There is also alignment between SEEDA's activity on identifying and developing global opportunities in environmental technologies and the Technology Strategy Board's activity on environmental sustainability.

SEEDA innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Innovation infrastructure	£0.82m	£10.12m
Collaborative R&D	£9.66m	£7.20m
Knowledge transfer partnerships	£0.55m	£1.10m
Networking for innovation	£0.77m	£2.08m
Total	**£11.80m**	**£20.49m**

South West England

South West RDA



Science and innovation priorities

- Advanced Engineering and Aerospace
- Renewable Energy
- Marine
- Clean Technologies
- Digital Media/Creative Industries
- Microelectronics

Introduction

The South West is a diverse and innovative region. It has a heritage in advanced engineering and manufacturing, with a bright future applying this to the challenges and opportunities of a low carbon economy.

The South West Science and Industry Council (SIC) has been established to support the South West RDA in raising the gross value added of the region's industry and business through more effective use of science and technology. The following recommendations from the SIC have been accepted by the South West RDA board.

Focus

Concentrate effort on industries with genuine world-class strengths and on the crosscutting technologies which impact across our diverse industrial base: Environmental Technologies, Advanced Materials, Informatics and Nanotechnology. Understand our competencies in these technologies and ensure they are exploited by businesses.

Adopt 'challenge-led', user-driven innovation to address economic growth within environmental limits, a growing, ageing and more diverse population, and energy challenges.

Encourage greater innovation in South West businesses, using case studies, business-to-business exchange of experience, and providing clear evidence of the benefits to business from innovation.

Collaborate and connect

Build close links with the national Technology Strategy Board and align regional and national funding to genuinely add value.

Increase collaboration between businesses and universities (and other parts of the knowledge base) by continuing to test new approaches and import good practice.

Attracting and retaining talent

Build on the existing reputation of the South West as the best place to prove and exploit environmental technologies.

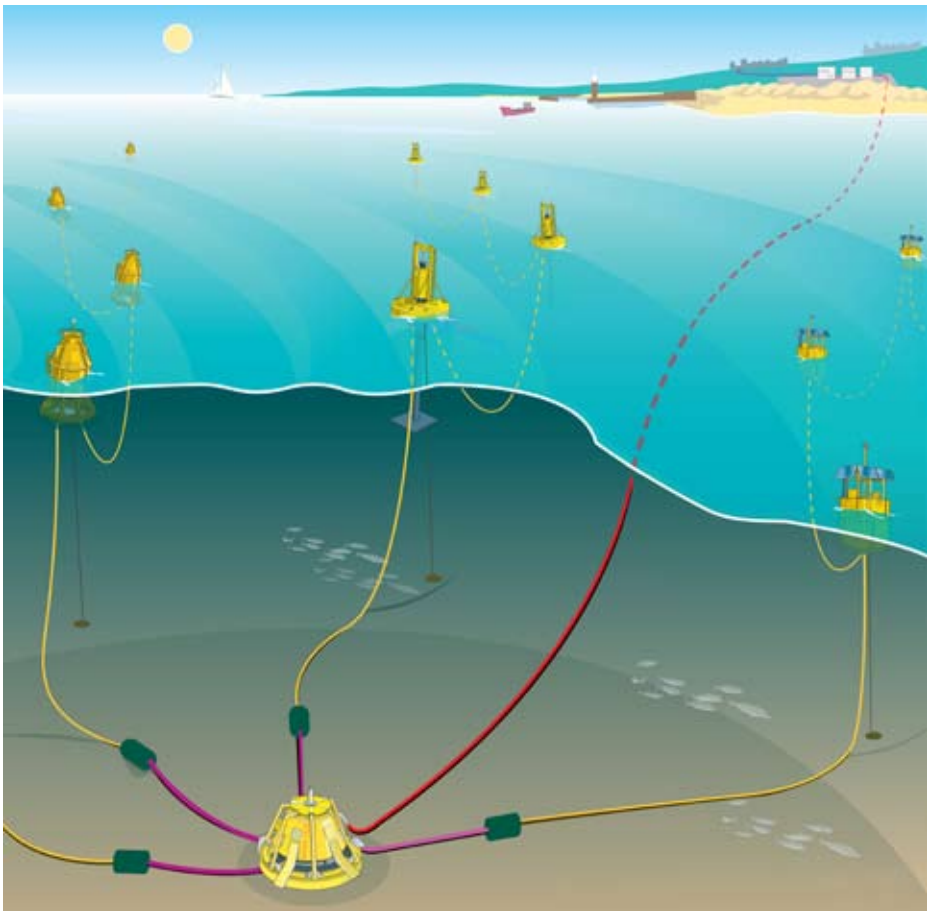
Focus on building world-class centres of excellence in priority sectors and technologies to attract and retain talented people and businesses.

Invest in science parks, which provide highly visible concentrations of science and technology excellence.

Activities aligned with the Technology Strategy Board

- South West RDA is investing alongside other RDAs and the Technology Strategy Board to support the National Aerospace Technology Strategy programme. This includes Environmentally-Friendly (aero) Engine, Next Generation Composite Wing and ASTRAEA.

- Alongside investment of £12m from the Department for Business, Innovation and Skills, the South West is investing £4m in the new National Composite Centre. This independent open-access national centre will help deliver world-class innovation in the design and rapid manufacture of composites and enable widespread industrial exploitation. It complements the recently announced Technology Strategy Board challenge of £6m in affordable composites manufacturing.
- With the Technology Strategy Board, the South West is investing in CFMS. This simulation research programme will see a collaborative effort in the UK's world-class technology sector, drawing together blue-chip engineering, aerospace and technology companies, and leading academic institutions.
- Wave Hub is a groundbreaking renewable energy project that will create the UK's first offshore facility to demonstrate and prove the operation of arrays of wave energy generation devices.
- PRIMaRE will be a world-leading institute in integrated multi-disciplinary expertise in marine energy research, development and innovation.
- The South West RDA and private-sector partners are developing SPark, the South West's international hub of science, technology and innovation. It will focus on the region's science and innovation priorities.
- The South West RDA, in partnership with the Technology Strategy Board and supported through the European Regional Development Fund is setting up innovation networks, enabling greater regional engagement with the knowledge transfer networks and other Technology Strategy Board services.



SWRDA innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Innovation infrastructure	£2.85m	£32.61m
Collaborative R&D	£1.96m	£6.55m
Knowledge transfer partnerships	£0.00m	£0.00m
Networking for innovation	£0.00m	£0.00m
Total	**£4.81m**	**£39.16m**

Yorkshire and Humber

YORKSHIRE FORWARD
The Region's Development Agency

Science and innovation priorities

- Advanced Engineering and Manufacturing
- Digital and New Media
- Healthcare Technologies
- Environmental Technologies
- Food and Drink

Introduction

Support for innovation is enshrined in the **Regional Economic Strategy** for Yorkshire and Humber 2006-2015, the revised Yorkshire Forward **Corporate Plan** 2008-2011, and the **Regional Innovation Strategy**, produced by the region's science and innovation council, Yorkshire Innovation.

Yorkshire Forward works to ensure that its innovation support and investments complement its skills, enterprise and inward investment policies and work closely with strategic regional partners who include **Science City York**, Creative Sheffield, Hull Forward, Leeds City Region, the Department for Environment, Food and Rural Affairs' Food and Environment Research Agency (FERA), Yorkshire Universities, the White Rose Consortium and Business Link Yorkshire.

Yorkshire Forward's investments are designed to grow the region's **five priority sectors** – Advanced Engineering and Manufacturing, Digital and New Media, Healthcare Technologies, Environmental Technologies, and Food and Drink – and are supported by **three cross-sector innovation networks** in Advanced Material Solutions, Intelligent Formulation and Healthcare Innovation.

Developing an environment for innovation

High value manufacturing and materials

- Yorkshire Forward has invested in technology transfer capacity building, research and development centres and skills, and has created the UK's leading advanced manufacturing research park, the £130m **Advanced Manufacturing Park** (AMP).
- The AMP hosts UK-leading manufacturing research centres: the University of Sheffield **Advanced Manufacturing Research Centre** with Boeing (AMRC) delivering sustainable manufacturing processes, and the **AMRC Rolls-Royce Factory of the Future**, a global exemplar in next-generation sustainable manufacturing. In addition, the AMP houses two leading research and technology organisations: **Castings Technology International** for advanced casting, and **TWI Yorkshire** for friction stir welding and laser processing.

Low carbon economy

- Yorkshire Forward is working with regional universities on the complementary themes of 'life-cycle carbon management' and 'climate change impact and adaptation'. The universities have pooled their significant research strengths with innovative regional businesses in the **Centre for Low Carbon Futures**, which will provide a strong focus for joint investment with the Technology Strategy Board and with research councils.

- Yorkshire Forward is working with the Centre for Novel Agricultural Products, FERA and Science City York to build the Yorkshire Bio-refinery with pilot-scale process development and demonstration equipment for the pre-treatment and extraction of biomass to produce high-value chemicals and oils for the pharmaceutical, health and personal care industries. Yorkshire Forward leads the Sustainable Agriculture and Food Innovation Platform.
- With partners such as Powerfuel and the National Grid, Yorkshire Forward is developing a **Carbon Capture and Storage** cluster based around a network of CO_2 pipelines linking power stations and industrial installations across the region to exhausted gas fields and saline aquifers in the North Sea. Powerfuel has won funding from the EU to construct the world's first large-scale integrated gasification combined-cycle power station with carbon capture capability, which will lead to a **900MW power station with near zero emissions**.

Healthcare technologies

- The University of Leeds' Innovation and Knowledge Centre in **Regenerative Therapies and Devices** and its **Regener8** centre will together benefit from over £12m investment by the Engineering and Physical Sciences Research Council, the Biotechnology and Biosciences Research Council, the Technology Strategy Board, Yorkshire Forward and The Northern Way.
- Yorkshire Forward works with the Technology Strategy Board on the **Assisted Living Innovation Platform**. Yorkshire Forward and regional partners aim to make Yorkshire and Humber a recognised leader in the exploitation of telehealth and telecare, an emerging market with significant economic and social benefits.

Digital Region

- Digital Region is a groundbreaking Yorkshire Forward-European Regional Development Fund investment to install fibre-optic cable across South Yorkshire delivering super-fast broadband with a universal ±25Mb service.

Besides supporting five priority sectors, a number of other significant areas are important to the regional economy and which benefit from Yorkshire Forward and Technology Strategy Board investment. These include **chemicals**, **financial** and **professional services** and **logistics**.

Targeted European engagement

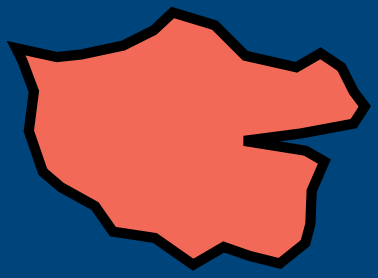
Yorkshire Forward co-funds the **European Enterprise Network** (EEN) and works with the Technology Strategy Board to ensure the **knowledge transfer networks**, regional sector and innovation networks, and the EEN's European networks collaborate effectively.

Yorkshire Forward innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Innovation infrastructure	£5.15m	£22.98m
Collaborative R&D	£0.00m	£0.00m
Knowledge transfer partnerships	£0.00m	£3.00m
Networking for innovation	£1.16m	£8.05m
Total	**£6.31m**	**£34.03m**

London

LONDON DEVELOPMENT AGENCY



Identified strengths

- Bioscience
- Nanotechnology
- Low Carbon Economy
- Digital Technologies
- Creative Industries

Introduction

The London Development Agency's (LDA's) priorities will be directed by the mayor of London's Economic Development Strategy, due to be published in spring 2010. This provides the rationale for the LDA's six key investment themes: Regeneration, Sustained Employment, Climate Change, International Promotion, Olympics and Olympics legacy, and Business Support.

Future LDA interventions that may align with the Technology Strategy Board priorities fall within the Business Support theme, and there is some alignment with retrofitting and energy demonstrator interventions which are being delivered from the Climate Change theme. Future LDA business support will focus on the core Solution for Business products, tailored to the needs of London SMEs, to assist them to grow, innovate and compete internationally. While innovation and maximising the economic return of London knowledge base R&D remain priorities, future interventions will be sector neutral.

The LDA is reviewing London's Science and Industry Council, Catalyst. It was launched in November 2005 as a three-year advisory board to the LDA for its longer-term interventions in science, technology and design. The council advised on some 20 projects that adhered to its published strategy, with LDA funding on these initiatives totalling £16m.

Co-investment of LDA/Technology Strategy Board resources

Prior to 2008 the LDA made significant co-investments with the Department of Trade and Industry/Technology Strategy Board in Bio Nano Consulting and Nanoforce Technology Ltd, both of which are part of the Technology Strategy Board micro and nanotechnology capital programme.

LDA interventions directly aligned to Technology Strategy Board priorities

Over £14m of LDA investments between 2008/09 and 2010/11 directly align with 14 of the 24 Technology Strategy Board technology and application priorities. This figure excludes any planned projects, yet to be contracted for 2010/11 onwards. Examples of directly aligned investments include:

- **Infrastructure:** Incubation/science park space including The Queen Mary BioEnterprises Innovation Centre, and the Centre for Efficient and Renewable Energy in Buildings at London South Bank University.
- **Demonstrators:** AT (Assistive Technologies) Care and London SciTech Challenges.
- **Specialist innovation support:** London Biotechnology Network, Bioscience Key Account Managers, UK Centre for Medical Research and Innovation, and the London Technology Network.
- **Other:** Alphasat.

LDA interventions not directly aligned to Technology Strategy Board priorities

The majority of the LDA's current innovation, knowledge transfer and enterprise support investments are not directly aligned to the stated Technology Strategy Board technology and application areas but complement them as 'general innovation support'.

This general innovation support amounts to a significant level of investment between 2008/09 and 2010/11 – about £28m.

Key projects include: The British Library Business and IP Centre; Knowledge Connect (London's Innovation Vouchers product); Collaboration Tasters (London's short-KTP project); The Global Medical Excellence Cluster (GMEC); NHS Innovations London; London Pre-commercial Fund (London's higher education institution (HEI) proof of concept fund); The London Technology Fund (equity fund for technology businesses); Gateway to Investment (London's Understanding Finance product); Designing Demand; The Manufacturing Advisory Service; and the London Innovation Network (London's Enterprise Europe Network).

The LDA is also investing in decentralised energy schemes and a major retrofit programme. These investments are not yet included in the direct and indirect aligned investment figures stated above.

Further regional activity to enable alignment with Technology Strategy Board priorities

The LDA is also undertaking promotion and influencing activity to ensure the benefits of working with the Technology Strategy Board are communicated and maximised across the region, including:

- Working with the other Greater South East RDAs to maximise the pan-regional benefits and economic impact of previously funded initiatives in the areas of Assisted Living (AT Care), Medicines and Healthcare (GMEC), and Environmental Sustainability (Thames Gateway Institute for Sustainability).
- Proactively promoting Technology Strategy Board initiatives and collaborative R&D and innovation platform funding calls through LDA-funded projects and by supporting specific events.
- Working with the London Technology Network to ensure its business-facing events on R&D collaboration opportunities are aligned to Technology Strategy Board technology areas, and that SMEs and HEIs are assisted to identify partners for collaborative funding bids.

LDA innovation funding aligned with the Technology Strategy Board

	Actual for 2008/09	Planned for 2009/10 and 2010/11
Total	**£9.61m**	**£5.14m**

Northern Ireland

Department of Enterprise, Trade and Investment
www.detini.gov.uk

Invest Northern Ireland
Building Locally Competing Globally

Science and innovation priorities

- Agrifood
- Connected Health
- Renewable Energy
- Advanced Engineering

Northern Ireland

Northern Ireland's Regional Innovation Action Plan has been developed in recognition of the contribution that innovation can make to Northern Ireland's productivity growth. In particular the action plan addresses the Northern Ireland Executive's Public Service Agreement (PSA1) which seeks to 'promote higher value-added activity through innovation and the commercial exploitation of R&D', which will be measured in terms of the increase in the average annual growth of business expenditure in R&D (BERD).

Currently, growth in BERD in Northern Ireland is coming predominantly from SMEs. In order to increase BERD (8% for SMEs and 5% for large companies) and in line with Invest Northern Ireland's (NI) Corporate Plan, almost £150m has been allocated towards promoting investment by businesses in research, development and innovation projects from 2008-11.

One of the priority actions of Invest NI's Corporate Plan is to increase R&D investment in frontier technologies – those at the leading edge of R&D and with the potential to deliver significant long-term competitive advantage. MATRIX, the Northern Ireland Science and Industry Panel, through its Horizon Technology and Market Foresight programme, produced a clear and evidence-based overview of the five key technology sectors considered to be of highest economic significance.

This took into account the Technology Strategy Board priorities and the EU Lisbon Agenda. The sectors examined were: Agrifood, Advanced Engineering (Transport), Advanced Materials, Information and Communication Technology (ICT), and Life and Health Sciences. Matrix identified future opportunities for Northern Ireland in:

- personalised medicine and home-based care (connected health)
- high-performance embedded system; packaged product software; near-shoring around financial services; telecommunications; human resources; ICT
- differentiated and functional foods; innovative processes and packaging; computational sciences to enhance customer knowledge; renewable energy
- cleantech; composites; nano-structured materials; biomaterials; multifunctional materials including catalysis
- environmentally optimal manufactured products; design for safety and security; lighter, stronger and more affordable materials; innovative solutions combining products and services.

Selected Invest NI R&D programmes

- Invest NI's grant for R&D is open to all sizes of company and Invest NI has established a dedicated team of expert innovation advisors to help companies look at their operations, identify potential projects and assist with completing project applications. Since April 2009 over £7m has been invested in the engineering, transport and construction sectors in areas such as automotive fittings and renewable energy; and £5m in health, life and food industries in areas such as animal feeds, pharmaceuticals and packaging, both offering a 3x leverage on investment. In tradable services an £8m investment has supported companies in this area as part of investments worth over £25m.
- The Proof of Concept Fund, the Higher Education Innovation Fund and Northern Ireland Spinouts have been designed specifically to create the optimum conditions for the creation of spin-outs from the academic base. There are examples of successful spin-outs in life sciences, ICT and electronics.
- Knowledge transfer partnerships (KTPs) create an essential bridge between knowledge and application and have proved to be an invaluable medium for collaboration between academia and industry. In 2008/09 Invest NI contributed almost £1m in support of locally based high-quality KTP projects. Invest NI is grateful for the support of the co-sponsors of the programme, in particular the Technology Strategy Board.
- Central to Northern Ireland's research infrastructure are centres of excellence – R&D focused partnerships between government, businesses and the science base. These centres of excellence are maximising the impact of our investment in R&D and also providing high-tech environments and state-of-the-art equipment, as well as buildings and facilities such as business incubators and best practice showcases. Many of the established centres are working in cutting-edge areas of research, including functional genomics and proteomics, pharmaceuticals and nanotechnology.
- Invest NI recently launched a Competence Centre Programme – collaborative entities established and led by industry to undertake market-focused, higher-risk, strategic R&D for the benefit of industry. In return, companies will have early access to the intellectual property produced and engage in extended networks of companies and researchers. Invest NI is currently progressing applications in key areas of: Agrifood, Connected Health, Renewable Energy and Advanced Engineering.
- In order to increase participation in high-level, trans-national collaborative R&D, Invest NI recently launched a collaborative R&D support service. This service proactively provides and delivers targeted information and advice to Northern Ireland companies and universities on collaborative R&D funding opportunities from the EU Framework Programme and the Technology Strategy Board. Invest NI recently signed a memorandum of understanding with the Technology Strategy Board to part fund a EUREKA Eurostars project in Northern Ireland. Invest NI's Enterprise Europe Networks are also engaging with the Technology Strategy Board and are exploring the opportunities in nanosciences, nanotechnologies, materials and new production technologies.
- MATRIX also conducted a study into the use of public procurement to lever innovative solutions to issues faced by the public service. The Northern Ireland Government will take forward the pre-commercial procurement model devised by MATRIX, in consideration with the Technology Strategy Board's SBRI model, as a way of improving service delivery and also as a stimulus to innovation within high-technology companies, especially SMEs.

Michael Cooper

Scotland

Scottish Enterprise

The Scottish Government

HIE
Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

Science and innovation priorities

- Creative Industries
- Enabling Technologies
- Energy
- Financial and Business Services
- Food and Drink
- Life Sciences
- Tourism

Scotland

The economic strategy published by the Scottish Government in 2007 sets out a clear purpose: 'to create a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth'. To achieve this, the strategy identified three key elements that drive economic growth: productivity, economic participation and population growth. It also identified six key sectors, along with the technologies that contribute to their development:

- Creative Industries (including digital content and technologies)
- Energy (with a particular focus on renewables)
- Financial and Business Services
- Food and Drink (including agriculture and fisheries)
- Life Sciences (including biotechnology and translational medicine)
- Tourism.

The Scottish Government, Scottish Enterprise, and Highlands and Islands Enterprise are continuing to strengthen their links with the Technology Strategy Board through, for example, involvement in Scotland's Innovation Practitioners' Forum and engaging with and promoting SBRI in Scotland.

Scottish Enterprise

Scottish Enterprise is working with the Technology Strategy Board in a number of areas. Specific examples of projects being taken forward that align with the Technology Strategy Board priorities include:

Life Sciences

The Edinburgh BioQuarter is unique to the UK, offering a large state-of-the-art teaching hospital, the University of Edinburgh's world-renowned medical school, and bespoke biomedical research and development facilities all on one site. The existing BioQuarter site is home to a community of over 1200 dedicated researchers.

The Translational Medicine Research Collaboration's (TMRC) new core research laboratory is a new £11.6m facility providing a centre of excellence for medical and scientific research. The TMRC is a collaboration involving four of Scotland's leading universities (Aberdeen, Dundee, Edinburgh and Glasgow), their corresponding health boards, Scottish Enterprise and global pharmaceutical company Wyeth.

Energy

Work in this area includes five key projects across the energy sub-sectors: the Hydrogen Office, the National Subsea Research Institute, the Power Systems Demonstration Centre that will investigate opportunities to develop onshore and offshore grid technologies (including subsea grids), the European Marine Energy Centre and a Decommissioning Industry Forum. These projects will be delivered in partnership with the industry, Scottish Government, Highlands and Islands Enterprise, the Scottish Funding Council and others. Other projects include the Energy Technology Partnership, the Scottish European Green Energy Centre and the Saltire Prize – a £10m prize challenge for advances in wave and tidal energy.

Creative Industries

The Scottish Creative Industries Partnership brings together the public agencies involved in supporting the creative industries, ensuring better-coordinated and more effective support. Key recent developments include:

- Pacific Quay (Digital Media Quarter): a 60 acre site on the Clyde which provides flexible modern offices and work space for digital media and creative industries. It houses the headquarters for BBC Scotland and is adjacent to Film City Glasgow at Govan Town Hall, which is being developed as a production and post-production base for the film and TV industry.
- Seabraes Yards: a purpose-built, 20 acre, city centre environment in Dundee. One of Scotland's most high-profile and important investment projects, it will see more than £50m injected into the area over the next 10 years, giving a further boost to Tayside's already successful and fast-growing digital media and creative industries sectors.

Enabling Technologies

The Scottish Strategy for Enabling Technologies highlights an initial focus on sensors, modelling and simulation, and informatics for immediate investment. The Technology Strategy Board has been identified in the strategy as a key stakeholder.

Highlands and Islands

Highlands and Islands Enterprise will look to work with the Technology Strategy Board on the following priorities:

- European Marine Energy Centre: a world-class marine energy research facility, supporting the marine renewables sector and generating significant economic benefits for Scotland.

Mike Roper/HIE

- Centre for Health Science: a facility designed to create a centre of excellence and encourage collaboration in education, training, research, business incubation and commercialisation in the healthcare sector.
- Digital Economy, ICT and Rural Broadband: ensuring the Highlands and Islands have appropriate connectivity for now and the future to adopt new and emerging technologies to boost economic growth and positively impact on remote and rural society.
- Life Sciences: opportunities in remote and rural healthcare and wellbeing, natural products and bioinformatics, and to participate in Assisted Living Innovation Platform activities.
- KTN and KTP activity: establishing better mechanisms to engage, and increase reach to, Highlands and Islands businesses with funding, knowledge, graduate recruitment and other opportunities through the knowledge transfer networks and partnerships.
- Innovation platforms: Highlands and Islands Enterprise will become more involved in the current and relevant innovation platforms (Assisted Living, Energy and Creative Industries) and have expressed an early interest in the possible new innovation platform for technology enabled learning.

Highlands and Islands Enterprise will work with the Technology Strategy Board to ensure that effective mechanisms are in place to ensure local businesses are aware of, and have access to, packages of support to drive innovation and productivity.

As an initial step to raise the profile of opportunities, in October 2009 the Innovate Scotland conference and exhibition was led in Aviemore by Highlands and Islands Enterprise and the Technology Strategy Board, in partnership with the Scottish Government, Scottish Enterprise and the Scottish Funding Council (see www.innovatescotland.co.uk).

Wales

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Science and innovation priorities

- Digital Economy
- Low Carbon
- Health and Biosciences
- Advanced Engineering and Manufacturing

Welsh Assembly Government

Introduction

The Welsh Assembly Government aims to provide a business support and financing system that is as flexible as possible – be it for attracting inward investment or promoting the development and commercialisation of research outcomes.

In mid-2008 Wales adopted an approach to economic development that focused our effort and support onto a number of sectors of importance to the Welsh economy. Energy, environmental management, telecommunications and ICT are core or enabling sectors. Bioscience, health, financial services/ products and professional services, creative industries, automotive and aerospace are of strategic importance; with construction, food, defence, retail, and leisure and tourism being economically important. It is no accident that in most of these areas the Technology Strategy Board is also active either directly or in promoting technologies that underpin one or more of these sectors.

The Assembly Government has made a number of strategic investments into businesses and universities in Wales, both in buildings and capital equipment or in wider signature projects. These seek to change the Welsh economy to one where sustainable higher added-value goods and services play a more significant part.

Wales has the benefit of EU structural funds to co-invest with Government or business to support this transformation. These in large part are directed to build the infrastructure and skills for a knowledge economy. Wales now faces a markedly different situation from when its sectoral approach was first taken on, but the flexible nature of the approach has served both to maintain existing businesses as far as possible and to invest and broker relationships to build for recovery and achieve our longer-term vision for Wales.

An Economic Renewal Programme was announced in October 2009 and is now under way. In the face of globalised competition and the economic downturn Wales is keen to work with other parts of the UK and with others further afield on projects which bring mutual benefit, and it already has a number of these under way with various partners including the Technology Strategy Board.

Key R&D priority areas

In April 2009 the Welsh Assembly Government identified a number of key priority areas for R&D support, reflecting those of particular importance to the Welsh economy and where Wales has significant expertise. Future funding priorities in Wales will be influenced by these areas, which correspond well with those identified by the Technology Strategy Board.

The identified priority areas are:

Digital economy/ICT

- Secure mobile and wireless communications
- Creative industries – emerging area including animation and gaming media production.

Low carbon economy (including climate change mitigation/ adaptation issues)

- Sustainable building technologies
- Opportunities arising from large-scale renewable electricity innovations (including marine sciences)
- Low Carbon Vehicles
- Climate change adaptation ie, methods of coping with climate change
- Negative carbon.

Health and biosciences

- Translational science in ageing and well being (including neurosciences, medical engineering, e-health/ informatics and imaging)
- Plant biosciences, negative carbon.

Advanced engineering and manufacturing

- Advanced Materials (including micro and nanotechnology and composites)
- Autonomous systems.

Alignment of collaboration support

Wales continues to work alongside the Technology Strategy Board, co-investing particularly in the following programmes:

Knowledge transfer partnerships

The Welsh Assembly Government is committed to the development of a knowledge economy and so continues to support knowledge transfer partnerships (KTPs) both financially and through helping to develop the KTP programme. In particular, Wales took a leading role in introducing the new and shorter KTP pilot programme, which is now proving a good vehicle for many companies, especially smaller ones, to build effective relationships and collaborations with the knowledge base. Wales is currently running 118 KTP projects – 46 shorter KTPs and 72 classic KTPs.

Collaborative R&D

Wales promotes the Technology Strategy Board's CR&D calls in key sectors to organisations across Wales. It regularly holds workshops and seminars to bring potential partners together and to build successful consortia. It also provides assistance to businesses with constructing a bid and offers a pre-submission bid-screening service.

The Welsh Assembly Government continues to support large Technology Strategy Board projects where these have a relevance to the Welsh economy. In recent years these have included ASTRAEA and the national micro and nanotechnology centres.

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