SOUTH EAST ENGLAND DEVELOPMENT AGENCY

Working for England's World Class Region

Collaborate • Catalyse • Connect • Choose

SEEDA's current innovation programme

November 2009

Contents

What is this document about?

This report aims to give stakeholders an overview of SEEDA's current innovation programme.

During the second half of 2009-10, SEEDA will undertake a strategic review of the programme to position it to respond to opportunities arising from the economic recovery, to the government's *New Industry, New Jobs* strategy, and to SEEDA's own changing priorities. This review will determine future investment priorities and will be guided by the South East Science, Engineering and Technology Advisory Council (SESETAC) and other stakeholders.

What do we mean by innovation?

SEEDA uses the broad definition of innovation set out in the Government's innovation strategy – *Innovation Nation* (March 2008).

Innovation is the successful exploitation of new ideas. This recognises the importance of the creative spark, new knowledge and new ways of thinking. 'New' in this context can be new to the sector or the organisation, or taking an idea from one context and adapting it to another.

Improvements in products, services and quality often come from innovations in business processes, models, marketing and enabling technologies. Innovation happens in all service and manufacturing sectors and in the public and third sectors.

Why innovation matters more than ever

The world was investing heavily before the economic crisis

For a decade innovation has been a consistent theme of economic development agencies' activities across the developed world. In every continent innovation has been seen as an essential ingredient for achieving sustainable growth. And in a global economy where there is always a lower cost competitor hungry for market share, emerging economies too have recognised that sustained growth will depend on their ability to continuously innovate. SEEDA has been no exception. From our earliest days, we have consistently invested in innovation believing it to be critical to maintaining our position as a world class region.

What impact has the economic downturn had on the way these agencies now view innovation? Has it dropped down the priority list? Has the need to bail out the banks left governments unable to back their science and technology programmes? Are agencies too preoccupied with business survival and preserving jobs to worry about innovation? Is investment in innovation now seen as a luxury the public sector can no longer afford? Despite the immense pressures, the response of governments around the world to these questions is clear: innovation is key to emerging from this crisis; and it is a catalyst for accelerating the structural changes needed for a more sustainable global economy.

History tells us that crises are fertile times for innovation

In the past, economic crises have been times of industrial renewal and creative destruction. For companies with cash and ideas, history shows that downturns can provide enormous strategic opportunities as underperforming companies are destroyed, capital is released from dying sectors to new industries, and high-quality, skilled workers move towards stronger employers. Many leading innovators of the 20th century, such as Hewlett-Packard and Polaroid, were established as entrepreneurial start-ups during the 1930s. In the early 1990s and 2000s, respectively, the governments of Finland and Korea demonstrated that bold innovation policy can enable changes which face high obstacles in normal times and result in new world-leading industries.

Governments seem to be learning the lessons of history

In responding to the current crisis, there is evidence that governments are learning the lessons of history. For example, many of the stimulus packages being introduced in OECD countries include components to support innovation, entrepreneurship and green investments; Spain and Portugal have used the crisis to accelerate reforms to higher education to produce the skills needed for more innovative economies; and the United States has made support for its ailing car industry conditional on greater investment in green technologies.

The need for investment in innovation is greater than ever

The last 10 years has seen a massive shift towards a global economy driven by innovation. This has manifested itself in the increasing internationalisation of investments in innovation; the growing role of emerging economies such as Brazil, China and India in the global geography of innovation; the increasing reliance on 'open' innovation strategies that rely on partnerships and collaboration to share costs and spread risk; and the involvement of users and consumers in innovation – using the Internet as a collaborative platform. There is no going back now: although there are short term challenges, in the medium term the current economic crisis is likely to accelerate these trends.

SEEDA has a powerful integrated programme

Here at SEEDA, we are in no doubt. Innovation matters more than ever. We must continue to improve the region's capacity and capability to innovate – to improve our global competitiveness and help us achieve our vision of sustainable prosperity; and we must continue to invest smartly to help it do so.

After ten years of investment, SEEDA has built a powerful innovation programme which engages large numbers of businesses and makes a significant contribution to achieving the Regional Economic Strategy's (RES) Global Competitiveness and Sustainable Prosperity targets - by attracting innovative foreign investors; by increasing the number of businesses reporting R&D links with universities; by catalysing increased business expenditure on R&D; by encouraging and supporting businesses to increase the proportion of their turnover attributable to new products and services; and by prioritising support for innovation which aims to reduce carbon emissions, increase the use of renewable energy and reduce water consumption.

A diverse region with a wealth of innovation assets

The South East boasts an extraordinary array of innovation assets including:

- 24 universities and higher education institute colleges and two of Europe's best business schools offering teaching, research and knowledge transfer.
- A large number of other research and development centres undertaking world-class research (see figure 1).
- Eight science parks including Harwell in Oxfordshire – an international centre for innovation and enterprise which is also home to the Diamond Light Source Synchrotron.
- 25% of the UK's R&D workforce (45,800 people).
- 23% of the UK's R&D expenditure in the UK (£4.7billion) - 72% of which is in the manufacturing sector.
- 700 foreign-owned companies which make a critical contribution to the region's innovation performance by bringing leading technology, skills and know-how to the region e.g. Pfizer, Microsoft, Proctor & Gamble, BMW, Johnson & Johnson, Sony and Thales.
- The Thames Valley which hosts a major information and communications technology cluster which includes the HQ of Vodafone, the world's largest telecommunications company.

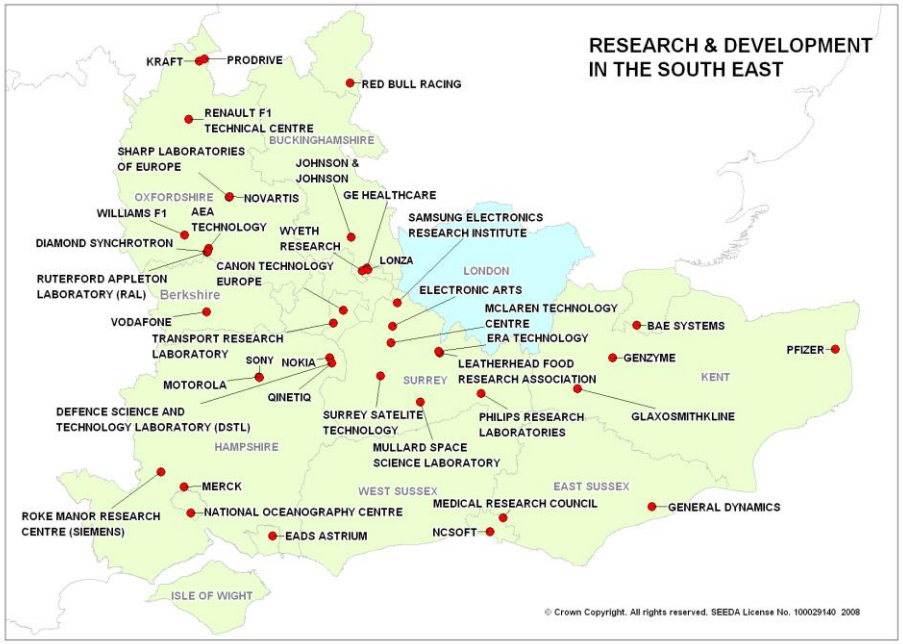


Figure 1: Research & development centres in the South East

Characterised by the diversity of its business base

The South East is characterised by its extraordinary sectoral diversity - it boasts world-class strengths in a range of manufacturing and service industries and no single sector dominates. Important sectors include: advanced engineering; aerospace and defence; biotechnology; built environment; creative industries including digital media; electronics; environmental technologies; financial and professional services; information and communications technology; marine technologies; motorsport; and pharmaceuticals.

A changing policy context

The UK government's approach before the economic crisis

In March 2008, the government published *Innovation Nation* - a white paper setting out its ambition to make the UK the best place in the world to run an innovative business or public service. The paper built on the Government's legacy innovation programmes, recognising the achievements of the previous decade such as the creation of the Technology Strategy Board (TSB) and the success of the Research & Development tax credits. But it also identified continuing weaknesses with Britain's innovation capacity and it presented policies for addressing these through research, development, skills, public procurement, regulation and infrastructure.

New Industry, New Jobs is now the key driver

Like the rest of the world, the UK government sees innovation as key to emerging from recession and delivering long term sustainable growth. It believes much of its pre-crisis innovation policy and programmes are still valid but it also recognises that the economic downturn has produced new challenges which demand a more activist approach from government.

New Industry, New Jobs, launched in April 2009, is the government's strategy for a more active approach to investing in Britain's economic and industrial future and the primary framework within which national and regional investment in innovation must now take place.

The government is adopting a more activist approach

New Industry, New Jobs identifies the opportunities for British businesses in the coming decade as the global economy returns to growth: growing populations and rising prosperity in other parts of the world; new technologies; the transition to low carbon and the green revolution; demographic change; and the spread of international supply chains. It believes that the British economy is well placed to exploit these but there are also barriers in the way. It sets out how the Government will adopt a more active strategy to remove these barriers and unlock potential that would not be released by the market alone.

The government plans to:

- Adapt and strengthen Britain's general competitiveness policies in innovation, skills, finance, infrastructure and access to global markets e.g. by protecting and raising investment in science and research; encouraging closer ties between researchers, industry and private investors; making it easier for small high technology businesses to access support.

- Use its role and influence in the market in a new, more strategic way e.g. through cross-departmental policy making as used in the Digital Britain Review and by the Office for Life Sciences; through greater regulatory certainty; and through smarter public procurement.

- Target its interventions on sectors and technologies where the UK can gain lasting advantages and where government intervention can have a real impact. These will include: low carbon; digital; life sciences and pharmaceuticals; advanced manufacturing; engineering construction; industrial opportunities in an ageing society; and professional and financial services.

National strategy, regional expertise, local delivery

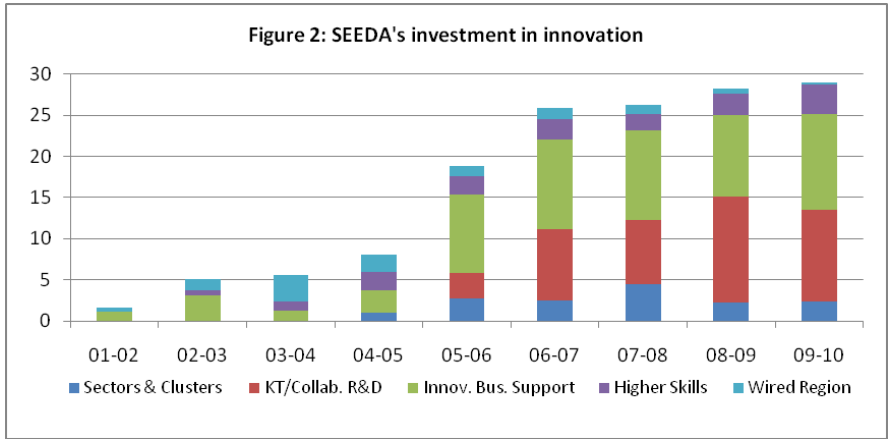
The government has given the Regional Development Agencies (RDAs) a key role in implementing *New Industry, New Jobs* in partnership with the leaders of local authorities, the private sector, the TSB and other key stakeholders. It also expects greater collaboration between the RDAs - particularly around support for targeted sectors and technologies, to reduce duplication and deliver better value for money. The RDA Chief Executives have responded collectively by establishing task and finish groups to identify the opportunities in each sector and the potential for collaboration.

An evolving programme

A consistent investment in innovation

SEEDA has invested £120m in innovation since 2001-2. After a modest start, we stepped up our commitment following the Lambert Review of University-Business Collaboration in 2003 and are now investing at a rate of £28m per year (see figure 2). An independent assessment of SEEDA's overall performance between 2002-3 and 2006-7 identified a return on innovation investment of £2.1bn of GVA (achieved and future potential) – a higher rate of return than that achieved by any other SEEDA activity (Source: *Impact of RDA spending*, PWC for BERR, December 2008).

SEEDA's investment has been influenced by the South East Science, Engineering and Technology Advisory Council (SESETAC) made up of senior people from business, academia and the public sector. Its contribution has been particularly important in developing the Strategy for Technology and guiding SEEDA's approach to collaborative research and development.



Continuously improving and responding to change

Our innovation programme has never stood still and we have continuously improved what we do and responded well to change - without indulging in change for change's sake. Over the last 12 months the economic downturn, the publication of *New Industry, New Jobs*, the *Review of Sub-National Economic Development and Regeneration*, the introduction of *Solutions for Business*, the tightening of public spending and SEEDA's own changed priorities have prompted us to rethink and adapt elements of our programme. Some of the major developments we have made recently are:

- Bringing the management of our science & technology and business innovation initiatives together into one Innovation & Business Finance team within the new SEEDA structure.
- Producing, with SESETAC, a strategy for technology.
- Identifying six priority business sectors - consistent with the direction in *New Industry, New Jobs*; establishing a Sector and Cluster Development team in our new structure to integrate our work with these sectors; and investing in research to identify global opportunities.
- Seconding the Grant for R&D team from SEEDA to Finance South East so that it can work with FSE's fund managers to deliver a more joined up approach to businesses seeking funding for innovation.
- Establishing the South East Business Innovation & Growth Teams to exploit the innovation potential within the Diamonds for Investment and Growth and to engage partners in creating a simplified offer for businesses within the *Solutions for Business* portfolio.
- Aligning our investment in physical infrastructure with our sector, technology and geographic priorities.

SEEDA's current approach

SEEDA doesn't have the level of funding or staffing available to it which many other economic development agencies enjoy. So a strategy based on providing large grants for iconic developments or direct delivery of major projects has never been an option. Instead, SEEDA has consistently sought to use its limited investment smartly – in ways which deliver a significant contribution to the RES's targets for relatively modest inputs. Our approach is based on four principles:

Collaborate We are open and collaborative – thereby minimising duplication and maximising the return on public investment in innovation. For example, we have collaborated with other RDAs in the Greater South East on the Institute for Sustainability; we have engaged with universities in developing the Knowledge Networks; we have worked with local authorities on the development of the South East Business Innovation & Growth Teams; and we work alongside the Technology Strategy Board to influence its priorities and align our investment.

Catalyse We invest our limited resources in ways which stimulate new activity, test ideas, and persuade others to contribute their resources. For example, our investment in the South East Seed fund attracted co-funding from universities and private investors; and our Innovation Vouchers and Knowledge Transfer Partnerships provide catalytic funding to encourage a business to work with the knowledge base.

Connect We invest in initiatives which connect people engaged in innovation to try and create the kind of interconnected community which is a feature of the world's most innovative regions such as Silicon Valley. For example, we connect businesses with universities (Knowledge Networks); investors with entrepreneurs (Finance South East); businesses with publicly funded support (Business Link); businesses with supply chain partners (Sector Consortia); and we connect the key innovation actors in places with high growth potential (South East Business and Innovation Growth Teams). We have also taken steps to connect people trans-nationally – particularly across Europe e.g. through the Enterprise Europe Network; and by acting as the lead partner in The Power Programme - a €5.8m inter-regional programme aimed at driving low carbon economies.

Choose With limited funds we have to make choices about where we invest. After analysing the global market potential, the region's capabilities, and *New Industry, New Jobs*, we've identified:

Six priority sectors – Advanced engineering (including marine); aerospace and defence; environmental technologies; financial services; ICT and digital media; life sciences and healthcare.

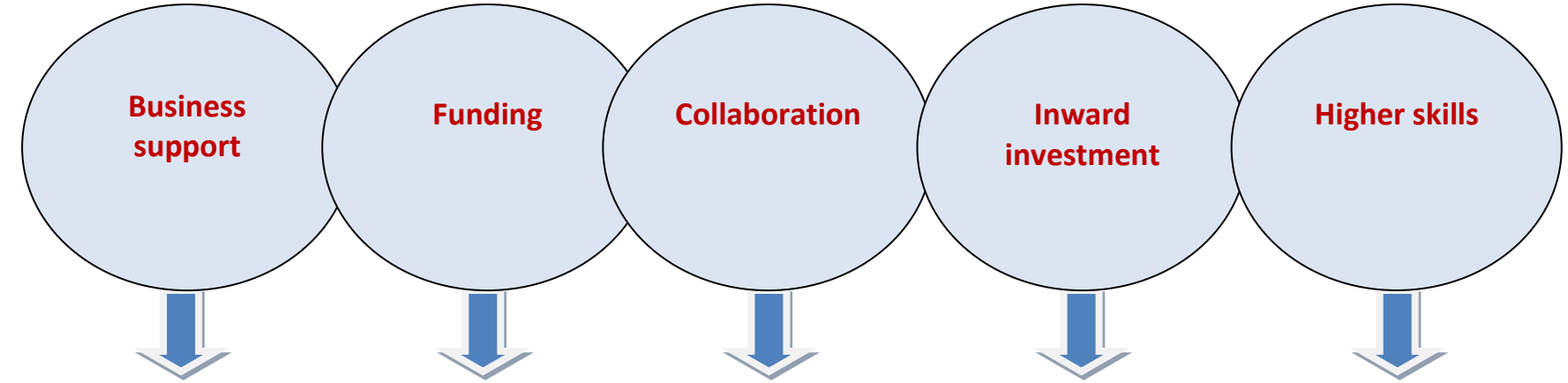
Four pillars of technology activity - Advanced materials; communications technologies; healthcare technologies; sustainability technologies.

Eight places with the greatest innovation potential – i.e. the RES's Diamonds for Investment and Growth – Basingstoke; Gatwick Diamond; Milton Keynes and Aylesbury Vale; Oxford/Central Oxfordshire; Reading; Sussex coast – centred on Brighton & Hove; Thames Gateway; and Urban South Hampshire.

Our investment will be directed primarily at these priorities but we will always remain open to opportunities in other areas which offer exceptional returns.

SEEDA's current programme

Based on these principles, SEEDA has invested in a range of business-facing initiatives which all sit within the national *Solutions for Business* portfolio and are accessible via Business Link. The initiatives are grouped into five interrelated areas to form an integrated programme. This programme is illustrated below and its component initiatives are explained in the sections that follow.



Business support initiatives

South East Business Innovation and Growth Teams (IGTs)

This programme, designed and funded by SEEDA, comprises a regional network of eight Innovation and Growth Teams. Each IGT is run by a sub-regional partnership which brings together the key innovation players in its area to offer intensive, joined up, place-based innovation support aimed at delivering economic growth. Partners include universities, research institutes, local authorities, private sector service providers and Business Link. This model supersedes, and draws from, legacy programmes such as Enterprise Hubs, the Innovation Advisory Service, High Growth Coaching and sub-regional initiatives. IGT's are focused primarily on the RES's Diamond for Growth areas but are also able to reach out to any business in the region with significant growth potential.

The job of an IGT is to engage intensively with those businesses which have high innovation and growth potential, irrespective of their size. They are invited to be part of a community of innovation through which they can access whatever support they need to accelerate their growth – whether from other businesses in the community, from public agencies, universities or private providers. IGTs will also deliver five of the Solutions for Business products to these businesses.

Between June 2009 and January 2013, the programme will provide intensive support to at least 2,000 businesses with high growth potential and will engage a further 4,000 in their communities of innovation networking activity. The intensively supported businesses are expected to raise £500m of investment and add £1bn of new economic value to the South East.

Manufacturing Advisory Service South East (MAS)

MAS is a national product offering manufacturing companies practical support to enable them to innovate, streamline their processes, reduce waste, and become more energy efficient. SEEDA funds the service in the South East and contracts the delivery to a third party organisation staffed by advisers with hands-on experience of manufacturing operations and management. The service includes a free helpline, a free review, subsidised consultancy support and events. Since its inception South East MAS has delivered over £310 million of added value to manufacturing businesses; responded to over 20,000 initial enquiries; visited almost 3,000 businesses to carry out initial diagnostic 'health checks'; arranged over 900 events, for more than 16,500 individuals; and completed over 1,000 in-depth company support programmes.

Designing Demand

Designing Demand is a national product funded in the South East by SEEDA. The service helps businesses discover how to become more innovative, more competitive and more profitable by giving senior managers the skills to exploit design, spot opportunities, brief designers and run design projects that produce results. It is delivered via workshops, consultancy and in-company mentoring and is run by experienced, senior designers who are approved by the Design Council. The programme has delivered Design Awareness workshops to over 400 businesses and taken 90 companies through full design projects.

Designing Demand Case study: JS Humidifiers, Sussex

JS Humidifiers produces equipment that keeps humidity stable in critical environments. With help from Designing Demand, it embarked on a 12 month overhaul of its JetSpray product to bolster competitiveness, particularly overseas. The project was handled by the company's four-strong design and engineering team, joined by a University of Brighton product design graduate through the Knowledge Transfer Partnership initiative.

"As well as improving the appearance of the product, the project has dramatically improved its specifications, enhanced its capabilities and slashed manufacturing costs by 25 per cent", says Technical Director Tony Fleming. "We've improved the way we manufacture through factors like supply chain management, inventory and commonality of components. And we can now use it to prototype more rapidly too."

The impact of the redesign has been immediate. The JetSpray was launched at a major European trade show, where it generated 300 sales leads and orders worth £1m.

Funding initiatives

Finance South East (FSE)

FSE is a not-for-profit organisation supported and funded by SEEDA to deliver the South East Funding Escalator – a suite of complementary funds for investment in early stage businesses. FSE currently manages all SEEDA's funds for innovation and growth, as well as funds backed by other investors including universities, the private sector and research councils. It also runs a regional business angel network (SECA) and delivers training programmes for both entrepreneurs and business angels. In July 2009 FSE was awarded the British Business Angel Association Award for Early Stage Investment Team of the Year.

Grant for Research & Development

This is a national product which aims to help start-ups and small and medium-sized enterprises (SMEs) carry out research and development work on technologically innovative products and processes by providing grants of between £5k and £250k. This year grant payments of £3m, made to 48 companies are forecast to leverage a further £4.9m of capital investment into the companies from other sources.

Grant for Business Investment

This is a national product which assists businesses to increase productivity through investment in capital equipment and technology by providing grants of between £10k and £2m. This year grant payments of £1.3m, made to 49 businesses, are forecast to leverage £11.8m of capital investment. Since 2008, the grant criteria has broadened, from its previous focus on regeneration, to one which puts more emphasis on innovation projects from SMEs across the region.

Commercialisation Fund

This is a South East fund, financed by SEEDA, to facilitate the progress of novel, high growth business ideas to market. The fund provides up to £60k as a repayable loan to SMEs for proof of concept and early commercialisation activities. During its first year the fund invested over £1m in 28 companies.

South East Seed Fund

This is a £5m equity fund, managed by FSE, that invests between £100k and £250k in SMEs (including university spin-outs/spin-ins) on a matched funding basis. Launched in April 2008, with investment from SEEDA, the CommercialiSE university partnership and a private sector partner, the fund seeks to earn a commercial return on its investment and therefore only invests in opportunities that it believes have the highest potential for success. The fund has committed circa £1.6m to 8 investments, leveraging circa £3.5m of additional funding.

The funding escalator case study: Toximet Ltd

Toximet Ltd was spun out of the University of Greenwich in 2005 to exploit research carried out by Professor Raymond Coker and his team. In May 2009, when the economy was still in deep recession, Toximet Ltd, based in the SEEDA-funded Medway Enterprise Hub, announced it had raised £665,000 of equity investment from the South East Seed Fund and private investors.

The company will use the funding to develop and market the Toximet T System, an affordable, user-friendly and portable instrument that enables food producers and manufacturers to perform their own quality tests, quickly and accurately, to ensure that their products meet stringent international food safety standards.

FSE recognised the potential of the idea at a very early stage. It provided two injections of proof of concept funding for early market and product research, and for product development - which were needed to make it an attractive proposition for seed fund investors. It then supported the company through the process of raising the equity investment. This is a prime example of the South East Funding escalator in action.

Toximet's CEO Matthew Baker commented: "I believe that Toximet's success is testimony to the attractiveness of the company as an investment opportunity, to the hard work of Toximet's directors, and to the support offered by the University of Greenwich and the Medway Enterprise Hub. With the backing of our new partners, we can now focus on bringing our exciting new technology to market as soon as possible."

Collaboration initiatives

The Sector Consortia

Sector Consortia is the collective name for seven companies formed by senior business people in the region who believe that collaborating with others in their market sector will enable them to win more business and be more profitable. Each company has a board of non-executive directors who work for some of the most innovative companies in the region. There is an exciting mix: big companies and small companies; global leaders and new start-ups; customers and suppliers. SEEDA played a big part in helping these companies get off the ground and continues to make a significant financial investment in them because of their success in engaging substantial numbers of businesses in regional, national and international innovation programmes. The sectors they cover are: aerospace and defence; built environment; digital technologies; environmental technologies and services; health technologies; marine; and security. Over the years 2008-11, the programme will assist 1,750 businesses, lever in £17.5m of public and private sector investment and help create £53m of new economic value.

Knowledge Network Programme

This programme brings together businesses and the knowledge base to build trusting relationships which turn knowledge into commercially successful products and services. The programme currently has five active networks which seek to build the trusting relationships needed for collaboration. They are: autonomous systems; environmental decision support systems; air traffic management; digital content; and space communications and earth navigation systems; and a scoping study has been commissioned for an Advanced Materials network. Each is facilitated by specialists who organise events, identify funding opportunities, facilitate collaborative bids and support partnerships. They work closely with the TSB's national Knowledge Transfer Networks. Since 2005 the networks have raised over £4.5m of funding from the Ministry of Defence, the TSB and the European Union's Framework 7. The programme is designed and funded by SEEDA, and delivered by third party partners. In the next phase, 160 businesses will be networked with the knowledge base for the first time, aiming to result in 50 collaborative partnerships; and four new networks will be created - aligned to the sector/technology priorities.

Case study: Marine South East MSE)

MSE is playing a vital role in building the case for the construction of new hydroscience research and testing facilities in the Solent, by providing the project's investors with specialist, in-depth market intelligence and by engaging businesses in the project.

MSE has been mapping the business demand for hydroscience facilities for nearly two years and has hard evidence that new capacity is urgently needed to regain the advanced testing and research capabilities which were lost when GKN's unit closed down a few years ago. Using its extensive membership network and its international contacts (including those gained through EU-funded programmes), MSE has identified a wide range of businesses (especially in boat and ship design) which were regularly using the facilities of GKN and obtained evidence that this work is now going elsewhere – mainly overseas. It has also pinpointed new, leading edge work, in strong growth sectors, which could be attracted to the region if new facilities were built in the Solent.

MSE has also set out the views of the marine industry about the strategic benefits of such an investment for the regional economy i.e. it would reinforce the position of the Solent as a world-class maritime centre, especially for high value knowledge-based businesses; it would attract inward investment both in terms of manufacturing and services, and collaborative and contract research; and it would be a stimulus to educating the next generation of naval architects and designers.

MSE has shared this intelligence with the University of Southampton and its co-investors to help them build their business case and it is engaging the right businesses in the project, in the right way and at the right time.

Collaboration initiatives

Enterprise Europe Network (EEN)

This project brokers relationships between businesses and the knowledge base across Europe to increase knowledge transfer - augmenting the successful Business Fellows model which the London Technology Network delivered. EEN is jointly funded by SEEDA and the European Union's Competitiveness and Innovation Programme. It is run by a consortium of Business Support Kent, the European Information Services Centre and the London Technology Network. The project is forecast to catalyse 1,000 knowledge transfer interactions – 45 of which will result in concrete transnational technology transfer agreements.

Innovation vouchers

Innovation vouchers are a national product providing catalytic funding to encourage a business to work with the knowledge base and explore opportunities for future collaboration. SEEDA is piloting the product through the three science and innovation campuses: 65 national and transnational vouchers will be available worth around £4k each.

Knowledge Transfer Partnerships (KTPs)

KTPs are a long-established, national product which helps businesses improve their competitiveness through the better use of knowledge, technology and skills that reside within the UK knowledge base. Knowledge and skills are transferred to the business by appointing a graduate to work in the company for 1-3 years – supported and employed by the knowledge-base partner. The 2007 annual report found that on average companies participating in KTP experienced an annual increase in profits of £229k. The programme is directed nationally by the TSB with funding provided by government departments, RDAs and research councils. SEEDA deploys its funding on projects which align with its sector and technology priorities, including a commitment to fund physics KTPs as part of SEEDA's support of the South East Physics Network funded by the Higher Education Funding Council for England (HEFCE); and it has also piloted shorter KTPs - under its Business Plus programme.

SEEDA has recently approved a further two years funding for 38 KTP projects in areas directly related to SEEDA's priority sectors/technologies. Based on past performance, these projects should result in 50 new jobs and 173 trained company staff.

Case study: Moog Components Group and the University of Reading

Moog Components Group Ltd is a technology company, based in Reading, which designs and manufactures motion control and associated electronic components. It provides solutions that are used in industrial, commercial, marine, alternative energy, security, aerospace and defence applications.

Until recently Moog had relied upon its traditional slipring technology. The company recognised that to meet increasing demands for high levels of rotation, it needed to look at contactless power transfer. Through a KTP project with the University of Reading, sponsored by SEEDA, Moog has been able to create a new generation of products using contactless power transfer within rotating equipment. In so doing the company has gained expertise in this emerging technology which has the potential to produce further spin-off products. Moog is enjoying increased sales from being one of the first businesses to exploit this new technology.

The collaboration has enabled the company to reach wider sources of knowledge than it could previously attain and secure a strong relationship with the University of Reading as well as an endorsement of data by a respected academic. In addition, the project has provided an opportunity to use high-value equipment, shared with the University; and it is allowing the company to address new markets such as wind-energy turbines where the reliability of the new contactless technology is very important.

As a result of this KTP, Moog is confident that its annual sales turnover has the potential to increase by £15m within three years. In addition, it expects exports to rise to £900k.

Collaboration initiatives

Regional collaborative research and development (Collaborative R&D)

SEEDA has funded five collaborative R&D programmes under the National Aerospace Technology Strategy (NATS) – a collaboration between the aerospace industry, government, RDAs and the TSB aimed at developing the next generation of short range commercial passenger aircraft with reduced environmental emissions. SEEDA adds value by working with the Farnborough Aerospace Consortium (the Sector Consortia for aerospace and defence) to ensure that over 30 South East SMEs benefit from the programmes and that the South East supply chain is well positioned to exploit future opportunities. Other benefits for the sector are stronger collaboration between industry, and between industry and the knowledge base; the development of new disruptive technologies; and the emergence of a centre of excellence in composite material technologies.

SEEDA's future investment in collaborative R&D will be aligned with the priorities of the TSB (particularly Innovation Platforms) and/or the regional science and innovation campuses. Investment will be made through co-funded calls led by the TSB in areas of regional priority and strength; and, on a case by case, basis where SEEDA funding for a proposal will provide significant additional advantage to the South East.

Science and innovation campuses

SEEDA is facilitating the creation of three science and innovation campuses, in response to one of the Transformational Actions in the Regional Economic Strategy, to provide specialist space where businesses and academics can come together to research and develop new products and services to address emerging market needs in priority sectors and technologies:

- At Harwell SEEDA is collaborating with the Science and Technologies Facilities Council and the Daresbury campus in the North West. Harwell plays host to world-class facilities and expertise in Advanced Materials; and will also be the home for a new European space research centre – so this campus will have an additional focus on space technologies.
- SEEDA is collaborating with the London Thames Gateway Development Corporation, EEDA and the TSB to develop the Institute for Sustainability to accelerate the development of practical solutions to today's sustainability challenges – using the Thames Gateway as its laboratory.
- SEEDA is collaborating with the Universities of Surrey and Southampton and the South East Health Technologies Alliance to develop a Communications Technologies campus with an initial focus on Telecare.

The campuses will operate through a range of collaboration initiatives including knowledge networks, innovation vouchers, KTPs and large scale collaborative research projects (funded by SEEDA and others) to find solutions that address global and societal challenges.

Case study: HealthMap

HealthMaP is a collaborative R&D programme funded by SEEDA and the aerospace industry. The technical objectives of the programme are to research, develop and test the integrity of aircraft structures and systems in-flight. (i.e. the health management and prognostics for key systems on the aircraft). The aim is to contribute to lighter and more fuel efficient aircraft, resulting in environmentally cleaner/greener air travel.

The economic objectives for SEEDA are to enhance the South East's capability in the aerospace market, by developing world class technology, enhancing skills and jobs in the region and providing opportunities for SMEs to participate and be more competitive in the global aerospace market.

The programme is led by QinetiQ, and involves seven SMEs and a number of academic institutions. The SMEs benefit from access to aerospace networks and potential customers, as well as a wider technology base. The Farnborough Aerospace Consortium – the Sector Consortia for aerospace and defence – has played a big part in facilitating the relationships needed to get this project off the ground and continues to be involved in the ongoing monitoring.

Inward investment initiatives

The importance of inward investment to our innovation performance

The South East's 7,700 foreign-owned companies make a critical contribution to the region's innovation performance by bringing leading technology, skills and know-how. Whilst these companies represent only 2.3% of the region's total, the latest economic impact survey highlighted that international companies are responsible for 27% of the region's gross value-added, 21% of its employment and 20% of its capital investment.

The need to change our approach

Continuing to attract and retain innovative companies and engaging them in our collaborative initiatives should therefore be an essential element of our innovation programme. 83% of SEEDA's inward investment successes in 2008-9 were knowledge intensive (i.e. they were projects involving a high technology production process or service provision, application of research and scientific development, or production of high quality technology products and services). However, innovation must become an even more important driver of our approach. As a first step, we are restructuring our international resources into six teams focused on our six priority sectors. The nature of our interventions will also change to make our offer more relevant to innovative investors e.g. we will do more collaborative market research; supply chain development; assembling of innovative finance packages; and facilitating relationships with Universities.

Foreign Direct Investment (FDI)

The new structure will continue to include FDI Managers to work with UK Trade & Investment (UKT&I), sub-regional partners, the Sector Consortia and Universities to help companies from overseas set up and expand their operations in the region. Last year the current team assisted 90 investments.

Launchpad

FDI has become increasingly competitive in recent years and difficult economic conditions have further enhanced the need for a strong service offering that minimises risk for overseas investors. SEEDA's answer to this challenge is Launchpad – a 'softlandings' service offering an assisted package of support, principally targeted at small and medium-sized international investors to enable them to establish themselves in the South East quickly, easily and at low cost. The service is offered in conjunction with local partners in Kent, including Locate in Kent, Business Link and START. The free, comprehensive support package of banking, legal, accountancy, funding, marketing, recruitment and diagnostic services is unrivalled by any other UK region.

Strategic Account Management

The new structure will also include strategic account managers for the region's most strategically important businesses (replacing the current investor development team). They will work with partners to help retain companies and facilitate connections with the region's research and innovation capability and our collaborative programmes.

International Hubs

To help generate FDI leads and facilitate international relationships, SEEDA will continue to have a network of representatives based in eight priority markets around the world; and later this year we will initiate new strategic interventions in the Middle East.

FDI Case study: Huawei

One of SEEDA's most exciting R&D collaborations took place this year involving Huawei, China's largest telecommunications manufacturer, and the University of Surrey. Huawei Technologies is a leader in providing next generation telecommunications networks, and now serves 36 of the world's top 50 operators, along with over one billion users worldwide. The company provides innovative and customised products, services and solutions to create long-term value and growth potential for its customers.

SEEDA took an active role in facilitating introductions between Huawei and the University of Surrey's 5* Faculty of Engineering & Physical Sciences, resulting in a joint research initiative in the area of advanced wireless technologies that will generate significant benefits for telecommunications R&D in the South East.

Higher skills initiatives

Leadership and Management Advisory Service

This is a collaboration between SEEDA and the Learning & Skills Council to improve leadership and management capabilities in SMEs. The service offers businesses a diagnostic to identify their needs and offers a grant of up to £1k to encourage the business to invest in solutions for its leaders and managers. The service runs until March 2011 with capacity to reach 10,000 businesses in the region.

STEM University Enterprise Network (UEN)

This is a business-led collaborative initiative involving Microsoft, BAE Systems, SEEDA, EEDA, the National Council for Graduate Entrepreneurship, and the universities of Oxford, Reading, Southampton, Cambridge, Cranfield and Hertfordshire. The UEN will give science and technology students, graduates and staff the opportunity to develop entrepreneurial and business skills. The initiative lasts for four years and aims to help create 45 new businesses and 200 university-business collaborations. Over 5,500 students are expected to benefit from enhanced entrepreneurial skills. SEEDA is investing £760k in the first two years of the project. Leverage from other partners is £3.3m.

Engaging Employers, Enhancing Education for Physics (E4P)

SEEDA is funding the creation of four local partnerships between businesses and schools. The partnerships are designed to increase the supply of physics graduates in the region, enhance the teaching excellence in schools and the understanding of physics-related career opportunities. The programme will help 4,800 people to develop their skills over 2 years. This initiative is being developed as complementary to the HEFCE-funded South East Physics Network (SEPnet) programme, led by a consortium of six South East and London universities which aims to advance and sustain physics as a strategically important subject for the UK economy and its science base.

Enterprise Challenge Investment Fund

This is a HEFCE initiative, co-funded by SEEDA, which concludes in September 2010. It forms part of SEEDA's response to the economic downturn, supporting four innovation-focused collaborations between regional universities and SMEs.

- The Universities of Reading and Surrey are addressing high level skills shortages in the biopharma industry by providing training for 50 employees and internships for 18 unemployed graduates. The project funds four Industrial Liaison Managers to provide the link between industry and the universities.
- The University of Sussex and Wired Sussex are offering 100 short term internships with micro, small and medium sized companies in the digital content sector and are helping businesses to maximise the talent of the graduates they employ.
- The Universities of Surrey, Royal Holloway and Greenwich, the Open University and the Tavistock Institute are supporting businesses to innovate during the recession through improving leadership and management skills; and supporting redundant managers to safeguard their leadership and management skills in the region during the economic downturn. 450 people will benefit from this programme which builds on the Leadership Academy initiative previously funded by SEEDA.
- Oxford Brookes University is offering 20 innovation vouchers in conjunction with the IGTs to assist businesses investing in innovation to be more competitive during the recession.

The strategy for technology (S4T)

The South East Science, Engineering and Technology Advisory Council recently endorsed The South East Strategy for Technology (S4T) – a framework for SEEDA's investment in technologies in support of its overall innovation strategy.

Technology priorities

Using a range of evidence, including that gathered through SEEDA's recent Global Opportunities research exercise, and taking account of national priorities, we have identified four key pillars of technology activity– each of which has the potential to bring economic benefit to the region and the UK. These pillars and their key challenges and opportunities are set out opposite.

Whilst interventions will be primarily directed at these technologies, SEEDA recognises the extraordinary diversity of the South East economy and will therefore take a flexible approach - supporting technology projects from any sector that potentially has a significant positive impact on sustainable growth.

How the strategy will be used

SEEDA will use S4T to:

- Guide its investment in collaborative R&D
- Shape the direction of the Science & Innovation Campuses.
- Influence future TSB activities for the benefit of the UK and the region.
- Influence the delivery of New Industry, New Jobs.

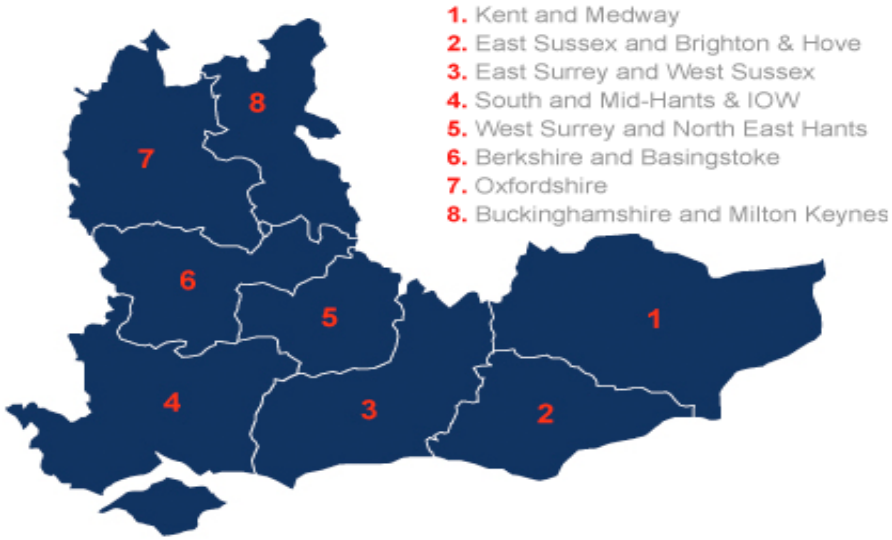
SEEDA has already aligned nearly £30m of funding with the National Technology Strategy over 2008-11, targeting TSB activities that are of particular importance to the South East. This alignment, which is set out in the *Regional Prospectus for the South East*[1], leverages funding into the region and maximises the added value of SEEDA's investment.

[1] All RDAs have produced such a prospectus setting out their innovation strategies and how their 2008-11 programmes align with TSB priorities. This is part of a national agreement between government, RDAs and the TSB.

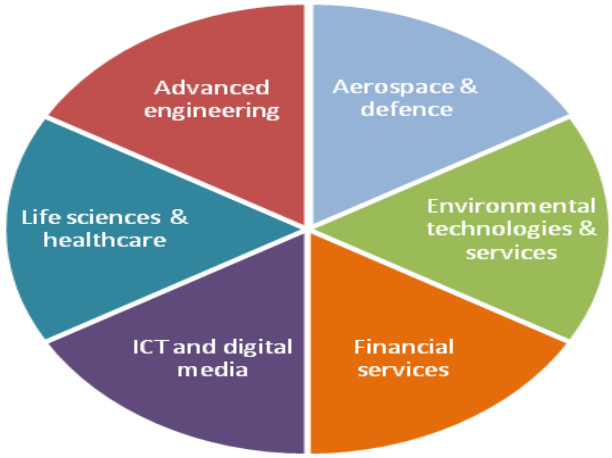
Technology pillars	Challenges and opportunities
Advanced materials	Air; marine; space; nano-materials; composite materials.
Communications technologies	Satellite communications; photonics; pervasive, ubiquitous and complex systems; intelligent infrastructure; virtual worlds; advanced game play and artificial intelligence; computer animation and digital imaging; homeland security; network security; identity management; crowded spaces.
Healthcare technologies	Integrated health solutions; intelligent information and behavioural change; regenerative medicine and gene therapy; rapid diagnostics; stratified medicines; therapeutics.
Sustainable technologies	Integrated transport solutions; intelligent information and behavioural change; autonomous systems; decision support tools for environmental security hazards; energy security; integrated energy, water and waste technologies; environmental technologies; sustainable building technologies; zero waste technologies; rural-urban interface.

A summary of SEEDA's approach to innovation

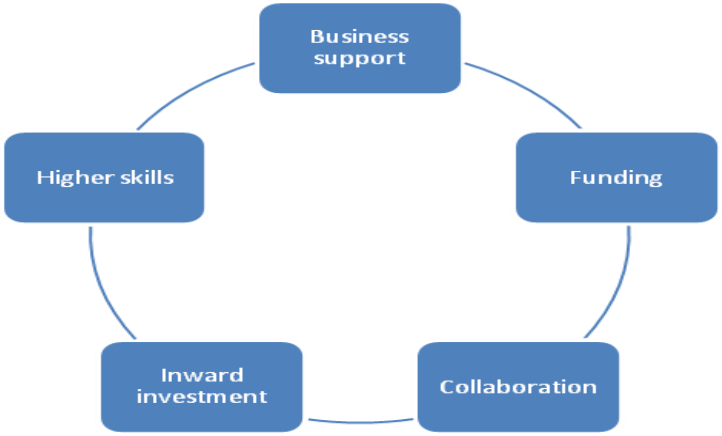
Creating a network of 8 Innovation & Growth Teams focused on the RES's Diamonds for Investment & Growth



Targeting trade and investment opportunities in 6 market sectors



Supporting initiatives in 5 programme areas



Investing in 4 technology pillars