Department for Business Innovation & Skills

Smart Specialisation in England

JULY 2014

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Draft for Submission to European Commission

July 2014

Purpose & Scope

The purpose of this Smart Specialisation Strategy for England is to:

- **identify the policies and range of public support** that is available at national and local levels to help businesses invest in innovation, and why and how specific priorities for investment have been made;

- **help Local Enterprise Partnerships (LEPs) and their partners to identify opportunities** to benefit from, and to contribute to, national policies and funding programmes supporting innovation; and to help them identify opportunities to collaborate with other places across England and beyond with similar investment priorities for innovation;

- **inform** businesses, universities and others involved in wider research and innovation programmes e.g. Horizon 2020 **about the priorities identified by LEPs** for the use of European Structural & Investment Funds (ESIF) for England for the period 2014-2020 so that potential opportunities to align activity can be identified;

- **support the work of the National Growth Programme Board**[1] to oversee the management of the ESIF; and

- **fulfil the requirements** of Annex X1 of Regulation (EU) 1303/2013.

This document relates only to England. Similar documents have been prepared in Scotland, Wales and Northern Ireland. The term "Government" refers to the UK Government and not the governments of Scotland, Wales or the Northern Ireland Executive. Statistics are provided wherever possible for England but it is sometimes necessary to use data that covers the whole of the United Kingdom.

The Concept of Smart Specialisation

Smart Specialisation is a concept that emerged from authoritative studies in the United States of how productivity is evolving in private firms. It recognises that businesses are best placed to lead in the identification of new opportunities for growth in a rapidly globalising economy. It understands that the process of discovery used by the most entrepreneurial of firms is one that should be emulated within public policies for innovation. It recognises also that innovating firms need to work closely with universities, other centres of research, Government delivery partners and with wider groups representing civil society. This will help future investments to be better embedded simultaneously into both the existing potential of local economies, and into ever wider geographical flows of trade, ideas and investment finance.

Smart Specialisation in England is an approach to investment in innovation which:

- provides a **long term strategic tool** to identify opportunities to inform and design emerging and future policies for innovation;

[1] Acting as the Programme Monitoring Committee

- recognises a strong value of an **on-going process of learning,** continually driving more productive and sustainable investments in innovation at all levels;
- is **applied in all places** taking into account the specific circumstances of each place;
- applies to **innovation** in the fields of technology, business processes, agricultural industries and social innovation, including the reform of public services;
- recognises the importance of designing innovation actions that are informed by a **sound evidence base** informed by global market conditions;
- seeks to **add value to innovation actions** whenever delivered locally by ensuring they are embedded into the local economy and institutional and social environment – and that the benefits of any new technologies developed can be transferred into related sectors;
- emphasises the importance of ensuring that the design of innovation activities – however they are funded – are **informed by the potential spatial implications** of that action even if these implications are unintended;
- recognises that geographies and patterns of innovation are complex and variable, and more needs to be done to ensure that **firms and research institutions are not hindered** by artificial or administrative geographies;
- provides **for better strategic alignment** of relevant public funding support for innovation from both national and EU sources.

Smart Specialisation in England therefore adopts the following definition:

"*Smart Specialisation seeks to ensure that proposed actions are based upon sound evidence that properly reflects the comparative advantages of the physical and human assets of particular places in the global economy. It emphasises the need to ensure that activities are fully integrated in the local economy and its supply and value chains. It helps to build connections of ideas, finance and trade with similar activities elsewhere. It promotes also the use of enabling technologies that can transfer and add value between related sectors".*[2]

[2] Witty. A (2013) Encouraging a British Invention Revolution

Approach to Smart Specialisation in England

Smart Specialisation complements and better informs existing policies, structures and funding programmes. Smart Specialisation in England adopts therefore an approach that fits within its unique circumstances. Policies for innovation are developed at the national level in partnership with businesses and research institutions based across the country. LEPs meanwhile bring together business and civic leaders to set economic strategy at the local level and are empowered to take the decisions that will allow their area to prosper They have been asked by Government to prepare Strategic Economic Plans which include proposals to support innovation.

Different aspects of Smart Specialisation need to be delivered at both national and local levels. Measures to increase levels of private sector investment can be taken forward primarily at the national level through the taxation system but LEPs have an important role to play in stimulating involvement and participation from local firms. Collaborative leadership for innovation is also needed at both levels. Other elements of Smart Specialisation can only best be delivered at the local level. These include:

- strengthening of local innovation 'ecosystem(s)' and building local capabilities;
- supporting local supply chains to invest and collaborate;
- catalysing and leveraging the differing opportunities of social innovation; and
- branding and positioning places as credible centres of smart specialisation.

LEP areas are different to each other. Some are bigger in population than some Member States, others are relatively small, with fewer firms and opportunities to invest in innovation. Smart Specialisation in England will therefore be applied depending upon local circumstances, and the relative opportunities and potential scale of private and public investment. Some parts of England will be able to demonstrate significant existing strengths and new opportunities for growth in the context of the global economy. Other parts of England will have local opportunities and the concept can be applied in those places to a depth that reflects this different relative scale.

The Ingredients for Success

England has the ingredients necessary for success in research, development and innovation. Many strong and internationally competitive firms across the country invest heavily in R & D. Over £23.9 billion was invested in R & D in England in 2102; this includes £15.7 billion invested by business in that year.[3]. A number of important sectors invested more than £1 billion, including pharmaceutical, automotive, ICT, aerospace and telecommunications.

Research activity is underpinned by **Higher Education Institutions** and Public Sector Research Establishments. England boasts 26 universities of the world's Top 200[4] with 16.9% of the world's top-cited articles[5], and 61% more citations per paper than the world average[6]. This is a strong performance given the increasing competition from emerging powers. Universities delivered contract research and consultancy services worth £1.2 billion [7] during 2011/12 and benefitted also from £284 million (up 12%) of funds provided via the European Union, primarily the 7th Framework Programmes.

The most recent update[8] from the consolidated FP7 database shows the UK receives the second largest share of funding, € 6,142 million, and equivalent to 15.4% of the total; only Germany (DE) has received more funding. The UK is involved in more successful projects than either France (FR) or Germany, 41.2 % of all grant agreements to date. Universities continue to lead the way in FP7, accounting for 60.0 % of all UK participations, receiving 10.8 % of all FP7 funding, but 26.1 % of all participation in FP7 in the UK is undertaken by private commercial organisations. UK SMEs account for 17.8 % of all UK participations and 13.1 % of all UK funding.

The **Technology Strategy Board** (TSB) has since 2007 been the prime channel through which the UK Government incentivises business-led innovation in technology. It is a business led Government partner organisation with a role to stimulate and accelerate innovation in those technologies which have the greatest potential for boosting growth and productivity.

The TSB also oversees and funds a network of **Catapult Centres**. These are focussed on the technologies where the UK stands to gain significant and substantial comparative economic advantage. Catapult Centres bridge the gap between academia and business to support the commercialisation of new technologies. The TSB will invest over £200 million into the Catapult Centres by 2015. These Centres provide businesses with access to:

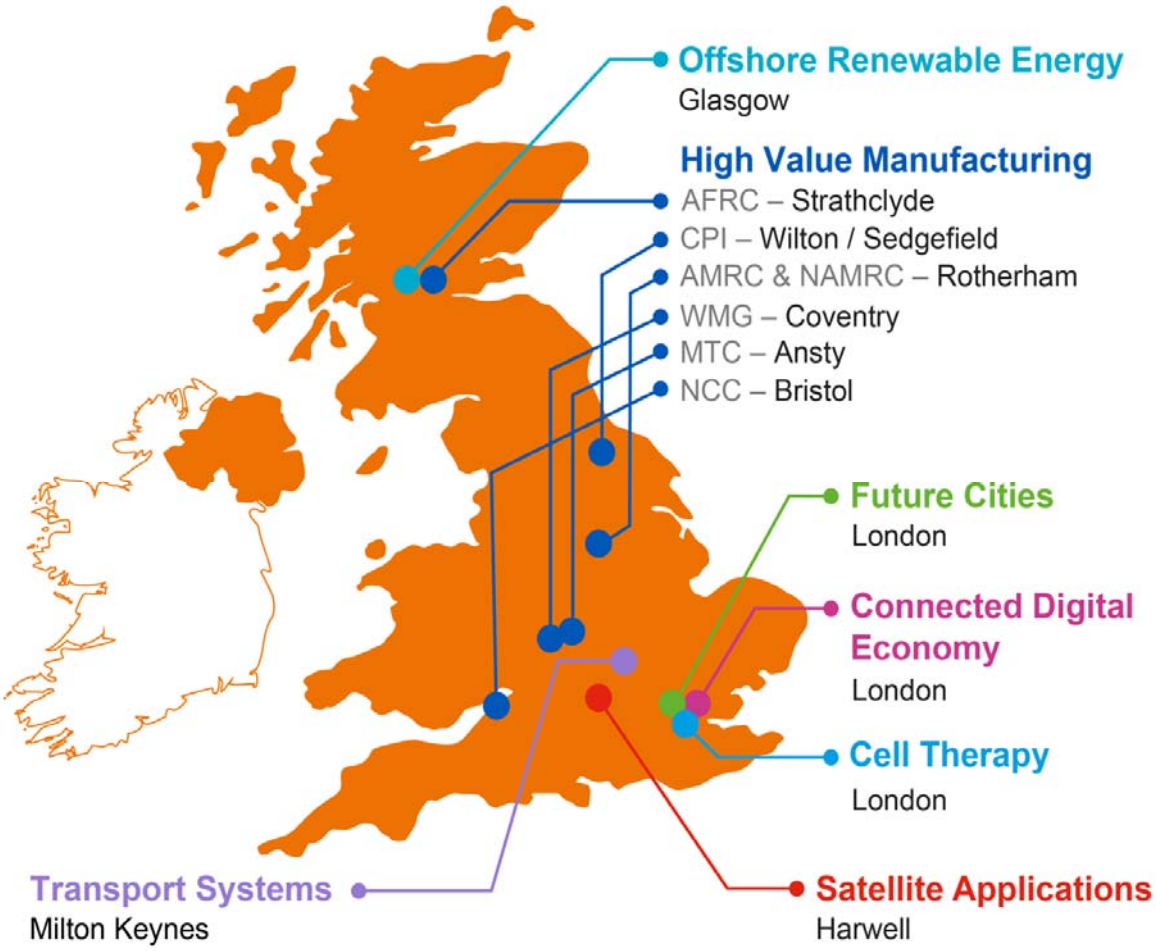
- Specialist technical expertise and skills needed across the sector from SMEs, supply chains and tier one companies
- High value capital equipment, facilities and infrastructure beyond the affordability of individual companies

[3] http://www.ons.gov.uk/ons/rel/rdit1/bus-ent-res-and-dev/2012/index.html
[4] http://www.timeshighereducation.co.uk/world-university-rankings/2013-14/world-ranking
[5] Elsevier (2013) International Comparative Performance of the UK Research Base
[6] as measured by the Field-Weighted Citation Impact
[7] http://www.hesa.ac.uk/component/option,com_pubs/task,show_pub_detail/pubid,1718/Itemid,286/
[8] eCORDA database, released 1 November 2013

- Technology and sector leadership
- Long term investment in technology platforms or demonstrators

The first wave of Catapult Centres now in operation is: High Value Manufacturing; Cell Therapy; Offshore Renewable Energy; Satellite Applications; Connected Digital Economy; Future Cities; Transport Systems.

A further two Catapult Centres covering energy systems and diagnostics for stratified medicine will also be brought forward. Once fully established, the Catapult centres will receive broadly equal funding from the core TSB grant, from research and development grants won by the Catapult in collaboration with business, and from contract research funded fully by business.



Location of the Catapult Centres

Research and Innovation Campuses provide thriving environments for businesses, industry, universities and researchers, enabling innovation and delivering impact from research investment. Such Campuses support innovation in areas including life sciences and biomedical research, energy, security, climate and the environment. They provide access to advanced world-leading facilities; scientific services; a unique training environment and world-leading expertise. They foster a culture of collaboration and innovation to support the creation and growth of new and existing business. These UK facilities act as magnets for domestic and overseas investment

by high-tech companies, and they give UK researchers sought after expertise in international collaborations. This allows the UK to participate in major international research infrastructure projects that are too expensive and complex for any one country to develop in isolation. Facilities include:

- The **Harwell Science and Innovation Campus** is a joint venture between the Science and Technology Facilities Council (STFC), the United Kingdom Atomic Energy Authority and the property developer Goodman International. More than 145 organisations are already located on the Harwell Campus, including start-ups, multi-national businesses, the Ministry of Defence Centre for Defence Enterprise and the European Space Agency's new UK centre, specialising in space robotics and climate change research.

- The **Babraham Research Campus** is a key component of the Cambridge science and innovation cluster, with a strong track record in supporting innovation through the nurturing of biotech start-ups and SMEs.

- The **Norwich Research Park** **(NRP)** is a successful science and innovation park that aims to be a world centre for environmental and life sciences, renowned for the generation of new industries and services spawned by the ecological, climate, sustainability and healthy ageing drivers.

- **Daresbury Science and Innovation Campus** **(DSIC)** is already home to 100 high tech companies which employ over 300 people and have developed over 150 new products and services.

- Universities and other public sector research establishments are complemented by a range of other innovation infrastructure organisations, including the National Measurement Office, National Physical Laboratory, Intellectual Property Office, British Standards Institution and UK Accreditation Service. Other public and third sector bodies provide specialist support, including the Design Council and the National Endowment for Science, Technology and the Arts (NESTA).

Encouraging Investment by Private Businesses

The Government has active measures in place to encourage further investment by businesses in research. These are led by primarily at the national level through the taxation system and through providing other tax incentives for firms to patent their new innovations.

The **Research and Development (R&D) Relief** is a Corporation Tax relief that it is intended to reduce a company or organisation's tax bill if it is investing in eligible R&D activity. Its clear purpose is to incentive investment in R & D by private firms. There are two schemes for claiming relief, depending on the size of the company or organisation:

- The Small or Medium-sized Enterprise (SME) Scheme[9]
- The Large Company Scheme

The total cost to Government of these schemes in financial year 2011/12 alone was £1,200 million, a figure significantly higher than that to be invested in support of innovation by a number of other UK and EU public funding programmes. This cost to Government has increased each year since the introduction of the credits in 2000-2001, including throughout the recent period of recession.

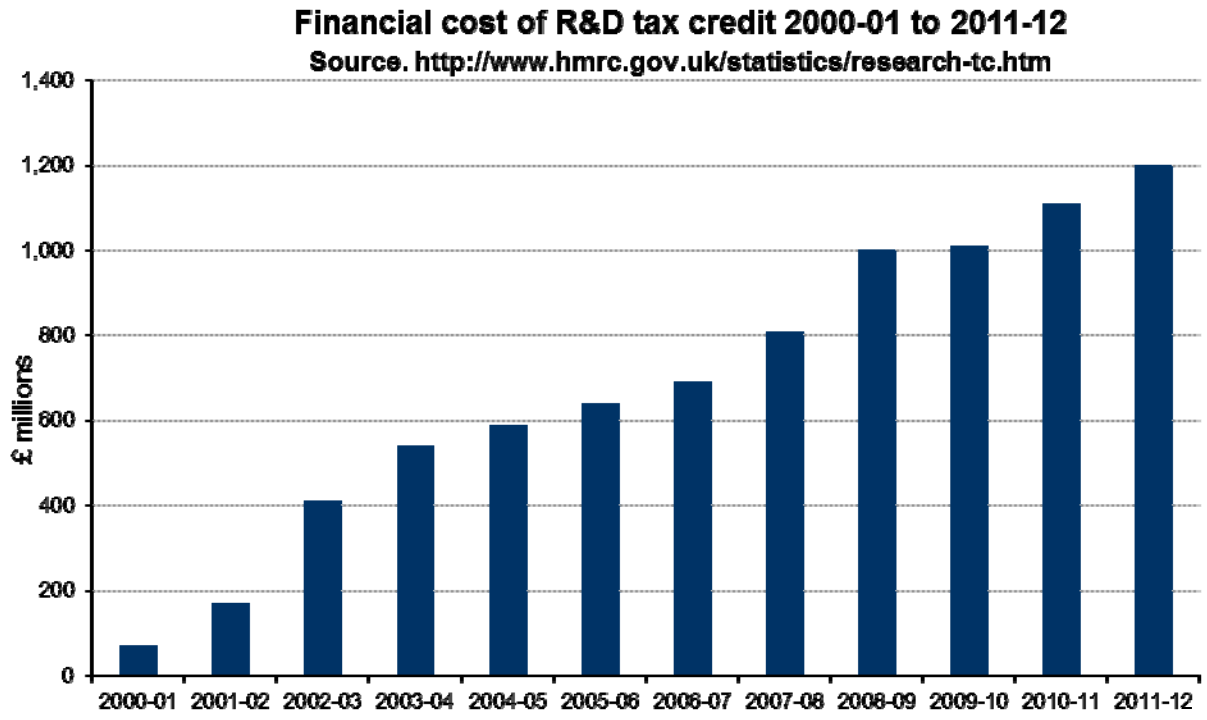


Figure 1

The **Patent Box** enables companies to apply a lower rate of Corporation Tax to profits earned after 1 April 2013 from its patented inventions and certain other innovations. The relief is being phased in from that date, and the lower rate of Corporation Tax to be applied when fully implemented will be 10%. A firm can benefit if it owns or exclusively licenses-in patents granted by the UK Intellectual Property Office, the European Patent Office and a wide range of countries in European Economic Area.

[9] A company or organisation with fewer than 500 employees and either an annual turnover not exceeding €100 million or a balance sheet not exceeding €86 million qualifies for the Small and Medium-sized Enterprise Scheme. This scheme has higher rates of relief. From 1 April 2012, the tax relief on allowable R&D costs is 225 per cent - that is, for each £100 of qualifying costs, a company or organisation can have the income on which Corporation Tax is paid reduced by an additional £125 on top of the £100 spent. It also includes a payable credit in some circumstances.

The **Technology Strategy Board** funds and manages a number of products or 'tools' that encourage more business to invest in innovation. These include:

- **Collaborative R&D** - helping businesses and researchers to work together on science, engineering and technology innovation.
- **Innovation Vouchers** - designed to encourage businesses to look for new knowledge to help them grow and develop.
- **Knowledge Transfer Partnerships** – offering businesses the opportunity to work with academic institutions to gain access to new knowledge.
- **Launchpads** - supporting innovative projects by high-tech companies that are clustered around specific themes and geographical locations.
- **Smart** - offers funding to small and medium-sized enterprises for R&D projects in science, engineering and technology.
- **Knowledge Technology Networks** - enabling the UK's innovation communities to connect, collaborate and discover new opportunities.
- **Small Business Research Initiative (SBRI)** is a national programme also managed by the Technology Strategy Board which supports a broad range of innovative companies, especially small businesses, to develop ground-breaking solutions to specific public sector needs through a competitive procurement process.

Recognising the vital importance of collaboration between universities, charities and industry, the £300 million **UK Research Partnership Investment Fund** **(UKRPIF**), set up in 2012 supports large capital research projects in UK universities which secure or accelerate significant co-investment from business, charities or endowments. The Fund will secure £1 billion investment in university research infrastructure by attracting and accelerating private sector and charitable investment. Fourteen projects have been announced so far, securing £220 million from the Fund and levering £615 million from business and charities, plus additional contributions from universities.

Established in 2009, the **UK Innovation Investment Fund** **(UKIIF)** is a venture capital 'fund of funds' that invests in innovative businesses where there are significant growth opportunities. The UKIIF replicates the best US funds by making investments at all business stages, with the market scale that can build companies with global reach. The underlying funds within the UKIIF fund of funds invest in technology based businesses in strategically important sectors to the UK including digital technologies, life sciences, clean technology and advanced manufacturing. At September 2012, the funds into which UKIIF has been invested make some £2.2 billion available to SMEs to fund growth. The management of the UKIIF will be transferred to the new British Business Bank.

Other encouragement is to be embedded in the design of the ESIF Operational Programme(s.) One of the output indicators for the European Regional Development Fund is '*private investment matching public support to enterprises*'. One of the two proposed results indicators is an '*increase in the number of businesses that are actively innovating to bring new products to the market*.' Anticipated contributions to these output and result indicators will be an important component of the appraisal and approval process of every project to be supported by those EU Programmes**.**

Effective Monitoring & Evaluation

The Government has put systems in place to monitor and evaluate the impact of policies and funding programmes. The Innovation Report which is produced annually is a comprehensive analysis of five perspectives of innovation and research: the macro view of overall innovation in the economy; the discovery of new ideas and their development through the innovation process; the role of businesses in commercialising those new ideas and bringing them to market; the increasingly global nature of innovation; and the role Government plays in the innovation ecosystem. The last Annual Innovation Report was published in March 2014[10]. The next is due in Spring 2015.

The Government has also prepared a Growth Dashboard. This provides a comprehensive and wider summary of important facts and figures on UK growth and industrial policy, including: an overview of growth across the country, employment and productivity, performance against 16 growth benchmarks, important sectors and cross cutting themes from the Industrial Strategy, performance across the regions. The dashboard will be updated twice per year. The most recent update was in January 2014.

The annual Higher Education Business and Community Interaction Survey examines the exchange of knowledge between universities, businesses and other partners. It informs the strategic direction of 'knowledge exchange' activity that funding bodies and higher education institutions (HEIs) in the UK undertake.

The surveys collect financial and output data each academic year. Results are summarised in the annual survey reports which provide information on a range of activities, from the commercialisation of new knowledge, through the delivery of professional training, consultancy and services, to activities intended to have direct social benefits.

These data provide invaluable intelligence for knowledge exchange practitioners and policy makers. The reports also provide an annual in-depth commentary on the extent of and trends in knowledge exchange activity in the UK. The process is overseen by the HE-BCI Stakeholders group representing the wide spectrum of interested and involved bodies.

For the ESIF programme(s), the national committee which oversees its management has not yet considered what structure will be used when it becomes fully operational but it is likely that it will establish a subcommittee to act as a *Smart Specialisation Leadership Group*. This will provide strategic direction on the performance of the Thematic Objective of Research, Development & Innovation. Its membership will include representatives of local and national partners, including the Higher Education Funding Council for England, the Technology Strategy Board, Research Councils, Universities UK, and the National Health Service. The subcommittee will use successive Innovation Reports, the Growth Dashboard and specifically commissioned evaluations to assess the real and additional impact of ESIF.

[10] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/293635/bis-14-p188-innovation-report-2014-revised.pdf

Current Performance

An international comparative analysis produced by Tera Allas at the Department for Business, Innovation & Skills in January 2014 [11] provided analysis of international benchmarking of the large and complex UK science and innovation system. The report identifies the UK's underlying strengths and weaknesses and indicates the priority areas that need to be addressed if we are to capture the maximum benefits from science and innovation. It confirms that science and innovation systems are complex and made up of a large number of complementary elements; that their effectiveness is crucially determined by how well the elements interact within and respond to the demands of the broader economic and societal system; and that different countries succeed with different mixtures of inputs and structures. It reinforces that international benchmarking is therefore challenging.

However, the report confirms that there is broad consensus and empirical evidence about the key features of effective science and innovation systems. **The** table below provides a high level summary of the strengths and weaknesses of the UK science and innovation system.

Category	Assessment[1]	Key strengths[1]	Key weaknesses[1]
1. Money	Medium/Low	Strong foreign direct investment (FDI) and foreign funding into R&D, high private sector investment in intangibles, vibrant financial sector and capital markets (e.g. business angels, venture capital) relative to non-US comparators	Low levels of public and private R&D investment, low levels of public innovation support, short-term focus of capital markets, remaining issues in access to finance for innovative growth companies
2. Talent	Medium/Low	Relatively attractive to top global research talent, internationally recognised higher education system attracting high quality students, relatively high number of doctorate holders, average proportion of population with tertiary education	Relatively low basic skills (numeracy, literacy, ICT), insufficient domestic human capital to exploit science and innovation (domestic STEM talent and Masters/PhD graduates working in research), below-average management skills
3. Knowledge assets	Medium/High	Highly productive world-class research base (second only to US), world-class research institutions, high proportion of international research collaborations	Low number of academic / corporate co-authored publications, smaller number of patent applications (albeit unreliable as a metric of performance)
4. Structures and incentives	Medium/High	Competitive funding driving excellence, strong international collaboration by firms, effective university collaboration with R&D intensive businesses, relatively strong formal and informal knowledge networks, a number of strong clusters with critical mass, modern intellectual property regime, good mix of basic, applied and experimental research	Government procurement not seen to foster innovation, limited SME / university collaboration, potential tensions in academics' incentives (e.g. publications vs. collaboration and interdisciplinary research vs. teaching), possible issues around portfolio management (e.g. complementarity of broader system with science investments)
5. Broader environment	Medium/High	Open and competitive markets, positive business environment, attractive to multi-national corporations, good rates of new firm creation and entrepreneurial activity, strong citizen interest in science and technology	R&D concentrated in a small number of sectors and firms, low proportion of medium-sized growth companies, UK manufacturing relatively lower-tech and less skills-intensive, relatively low quality of demand (degree of consumer orientation and buyer sophistication), migration rules perceived to be cumbersome
6. Innovation outputs	Medium (mixed)	Comparative export advantage in relatively sophisticated products, strong knowledge-intensive services and creative sector exports, strong technology balance of payments	Lagging labour productivity, average-to-low levels of new-to-market innovations, low number of innovative SMEs

Source: Literature review; expert interviews; BIS analysis

Figure 2

[11] Allas. T (2014) BIS Analysis Paper 3. Insights from international benchmarking of the UK Science and Innovation System (https://www.gov.uk/government/publications/science-and-innovation-system-international-benchmarking)

In summary, the UK exhibits:

- world-class strengths in many aspects of the system, such as research excellence, higher education institutions and the business environment;
- weaknesses in the talent base, especially in terms of basic skills, science, technology, engineering and maths (STEM) skills and management skills; and
- a sustained, long-term pattern of under-investment in public and private research and development (R&D) and publicly funded innovation.

Nevertheless, our tools of monitoring and evaluation are already showing that existing measures are having some positive impacts. Overall levels of investment have been increasing on a steady basis, including throughout the recent period of recession.

Levels of investment by businesses have been growing steadily since 1985 in both absolute and real terms. Businesses invested £17.1 billion in R&D in 2012. This compares with £5.0 billion in 1985 and £11.5 billion in 2000. Taking into account inflation, business investment has increased from an estimated £10.8 million in 1985 to the £17.1 million in 2012.

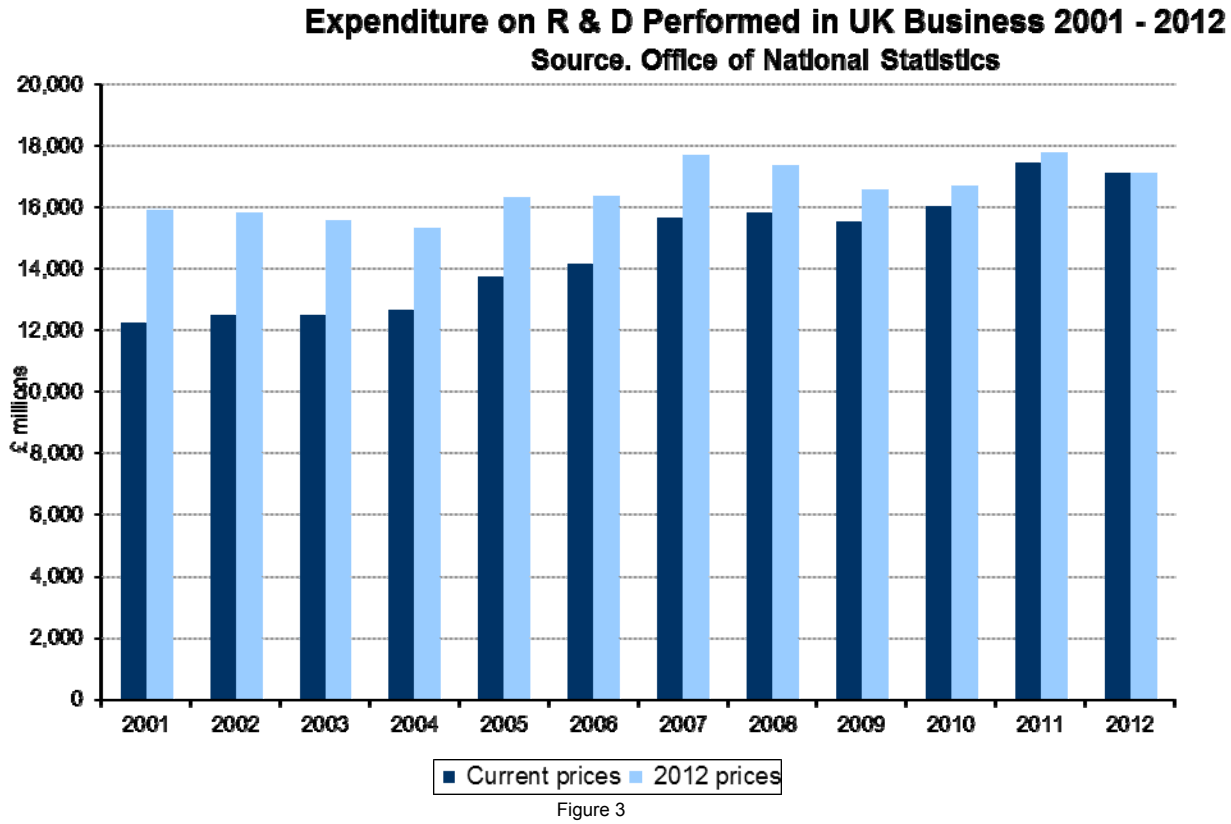


Figure 3

Employment in R&D has remained relatively stable in recent years despite the recent period of recession, growing to 160,000 Full Time Equivalent jobs in 2011 and remaining at that level in 2012 – up from a recent low of 146,000 in 2005. The 2012

estimate consists of: 90,000 scientists and engineers (56%), 43,000 technicians (27%) and 27,000 administrative staff (17%).

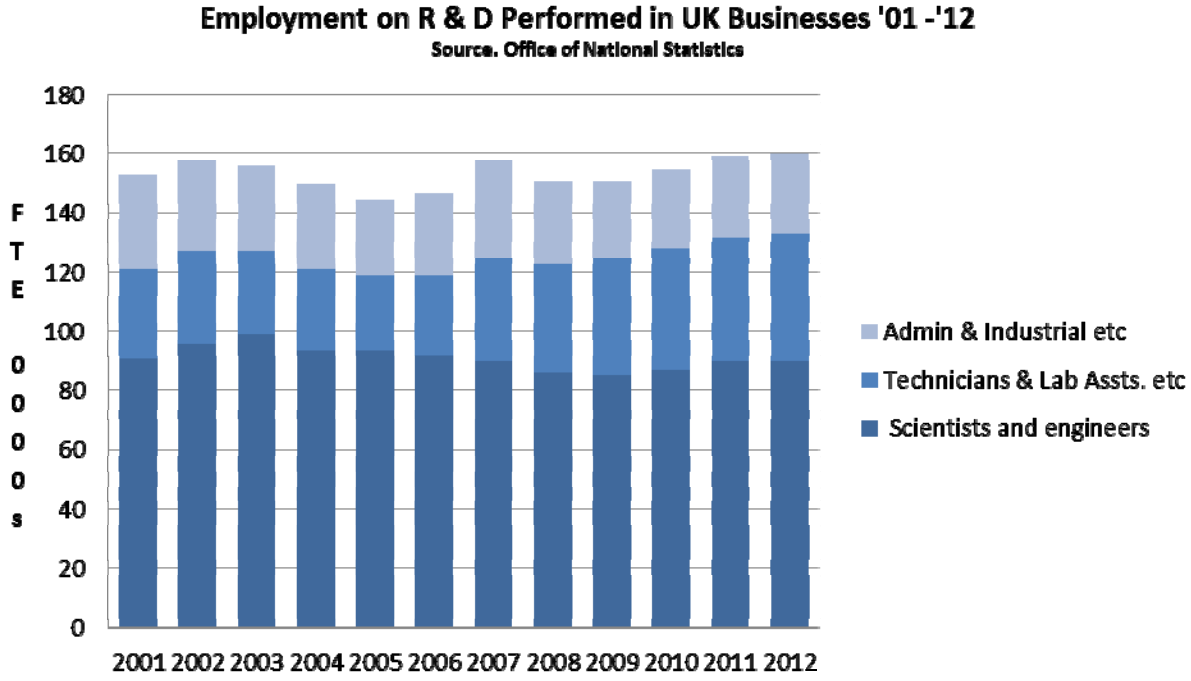


Figure 4

The total number of companies supported by R & D Tax Credits has risen from 1,780 in 2000/01[12] to 11,920 in 2001/12. Estimates are that claims are made for around two-thirds of all spending by businesses on R&D.

[12] The large company scheme started in 2002/03.

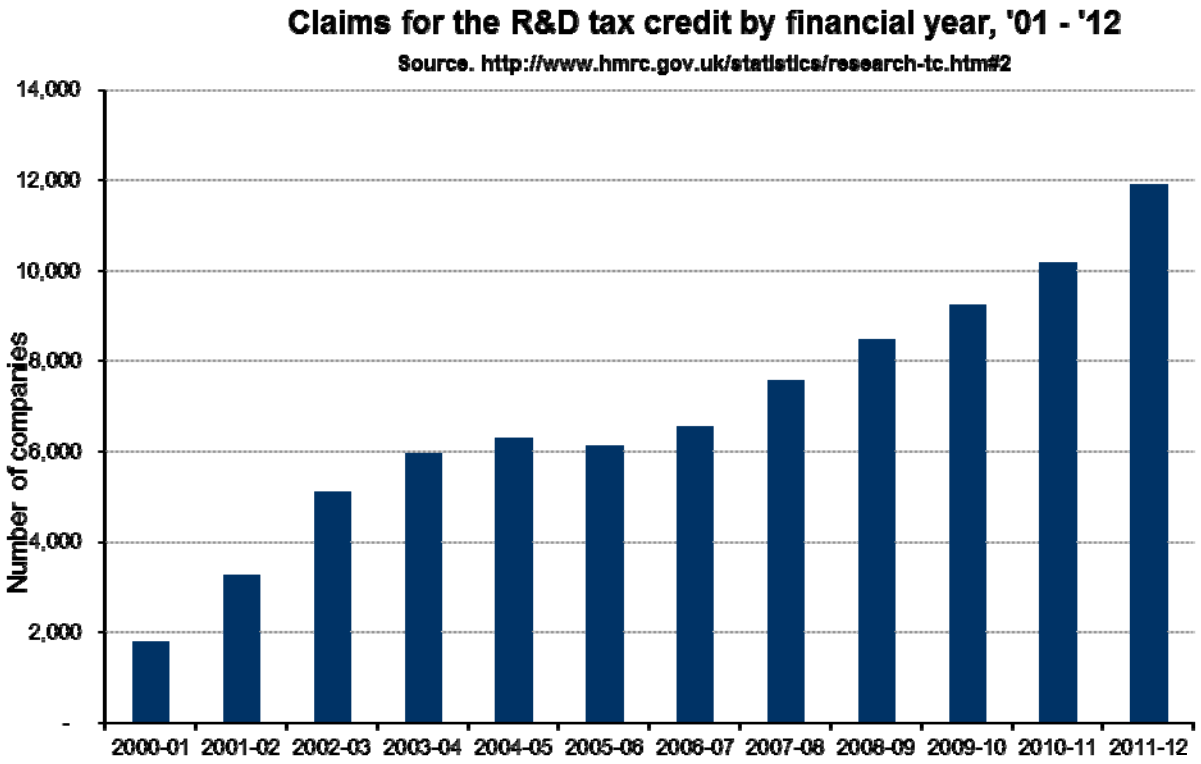


Figure 5

The HE Business and Community Interaction Survey 2011/12 shows a continuing increase in the overall exchange of knowledge between UK Higher Education Institutes and the public, private and third sectors. The growth rate in cash terms for the UK is around 4% from £3,302 million in 2010-11 to £3,431 million. Over the longer term income has risen – in real terms – by 45% since 2003-04.

The United Kingdom also performs very well in accessing and making good use of funds for research made available directly from the European Commission, especially the 7th Framework Programme. The most recent update[13] from the consolidated FP7 database shows the UK receives the second largest share of funding, € 5,205 million, and equivalent to 15.2% of the total; only Germany has received more funding. The UK is involved in more successful projects than either France or Germany, 40.7 % of all grant agreements to date. Universities continue to lead the way in FP7, accounting for 61.2 % of all UK participations, receiving 10.9 % of all FP7 funding, but 23.8 % of all participation in FP7 in the UK is undertaken by private commercial organisations. UK SMEs account for 16.7 % of all UK participations and 12.3 % of all UK funding.

In summary, Figure 6 shows that in 2010 levels of overall investment in R & D in some parts of England were well ahead of the target set in the EU 2020 Strategy. These include parts of the East, the South, the South East and some parts of the North West.

[13] eCORDA database, released 1 November 2013

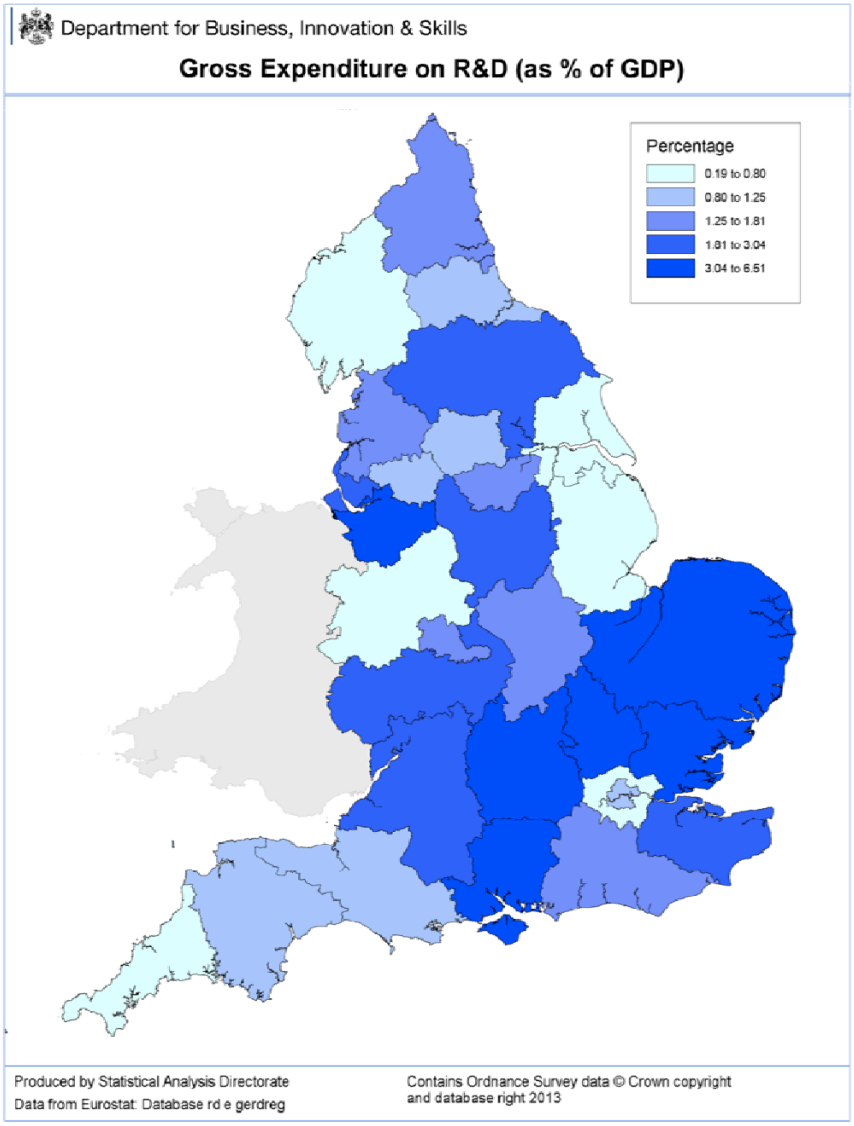


Figure 6

Commitment to maintain levels of Public Investment

The Government is committed to maintaining levels of public investment in research and innovation despite severe financial pressures. Previous National Reform Programmes reported that the Government would, despite difficult decisions taken to reduce many other areas of public expenditure, maintain the science budget in cash terms over the 2011–15 with resource spending of £4.6 billion a year.

Since then, Government has invested an additional £1.5 billion to encourage further collaboration between research and business. During 2012 this included: £300 million for universities to secure co-investment in research partnerships with business and charities (UK Research Partnership Investment Fund); £120 million for space; and a further £600 million announced in the 2012 Autumn Statement for science and innovation capital investment related to the 8 Great Technologies.

The Government announced at Budget 2013 an expansion of the Small Business Research Initiative (SBRI). £100 million will be channelled through the scheme in

2013-14. All departments will be expected to expand their use of the scheme. Specific targets were announced for SBRI for key departments including Health and Defence.

In the Spending Round 2013, the Government committed to maintain resource funding for science in cash terms at £4.6 billion in 2015-16. The Government extended the Research Partnership Investment Fund (RPIF) to 2016-17, making available £160 million per year of match funding to leverage private funding for scientific infrastructure. The Government is also providing long-term sector support through a £1.6 billion industry-matched fund as part of the Industrial Strategy.

The Government has increased capital spending on science by £1.4 billion above the amount committed at Spending Review 2010, enabling significant investment in projects including autonomous robotics, Big Data, and major upgrades and new facilities at Harwell Science and Innovation Campus; and providing long-term stability for science infrastructure over the next Parliament, to maximise the potential of the UK's world-leading scientific excellence, the Government intends to set an overall science capital budget which grows in line with inflation each year until 2020-21.

The Government announced in Budget 2014 an investment of £106 million in new Centres for Doctoral Training creating places for the training of more than 750 new PhD candidates. A further £74m investment in the Catapult Centres was also made to expand capability through the establishment of a Cell Therapy Manufacturing Centre, and to support innovation in Graphene through the High Value Manufacturing Catapult. An additional commitment was made to invest £42 million in the creation of a world-class research institute specialising in Big Data – the 'Turing' Institute.

A financial table summarising estimated relevant budgets of the main agencies and investment programmes is added at Appendix One.

Ongoing Development Needs

But challenges remain. Overall levels of investment continue to lag behind the leading countries on traditional measures such as investment in research and development as a percentage of GDP.

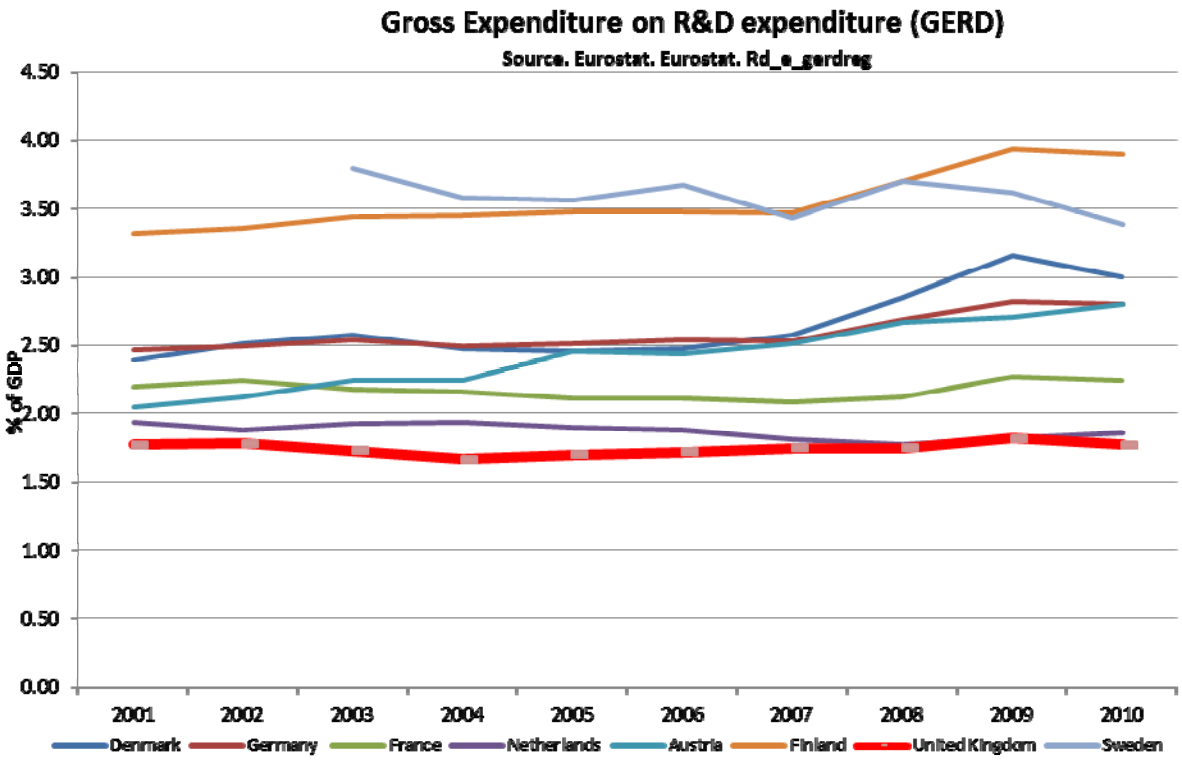


Figure 7

The Allas report noted that this under-investment is structural, not the result of any particular spending decisions. The UK's total investment in R&D has been relatively static at around 1.8% of GDP since the early 1990s. In contrast, the US alone spends around £250bn (2.8% of GDP) on R&D per annum. China increased its R&D by 28% in 2009 and 15% in 2010, to roughly £125bn (1.8% of GDP), and South Korea doubled its expenditure between 2003 and 2011 to around £35bn (4.0% of GDP). France and Germany have consistently invested substantially more than 2% of their GDP in R&D, with aspirations to increase this to 3% or more.

Despite the gradual upward trend in expenditure by businesses on R&D, its proportion to the size of the overall economy has remained broadly static for a number of years. Total expenditure by businesses represented approximately 1.1% of GDP in 2012. This figure has remained broadly constant since 1997 after peaking at 1.5% in 1986. These figures show that UK businesses have continued to see the importance of investing in research, even throughout the recent period of recession, but this relative scale of investment continues at a level below that of our major competitors and this underperformance cannot all be explained by the sectoral composition of the economy.

The most recent data[14] on Gross Expenditure on Research & Development for the UK shows:

- Total R&D expenditure in the UK in 2012 was 1.72% of Gross Domestic Product (GDP), a decrease from 1.77% in 2011, below the EU-28 provisional estimate of 2.06% of GDP.
- In 2012, the UK's gross domestic expenditure on research and development (GERD), in current prices, decreased by 2% to £27.0 billion compared with 2011. Adjusted for inflation, in constant prices, research and development (R&D) expenditure decreased by 3%.
- In constant prices, R&D expenditure has increased by 56% from the 1985 estimate of £17.3 billion. Expenditure peaked in 2011 at £27.9 billion.
- Businesses delivered 63% of the value of all R&D in 2012. Expenditure by this sector decreased by 2%, in current prices, to £17.1 billion in 2012, compared with 2011.

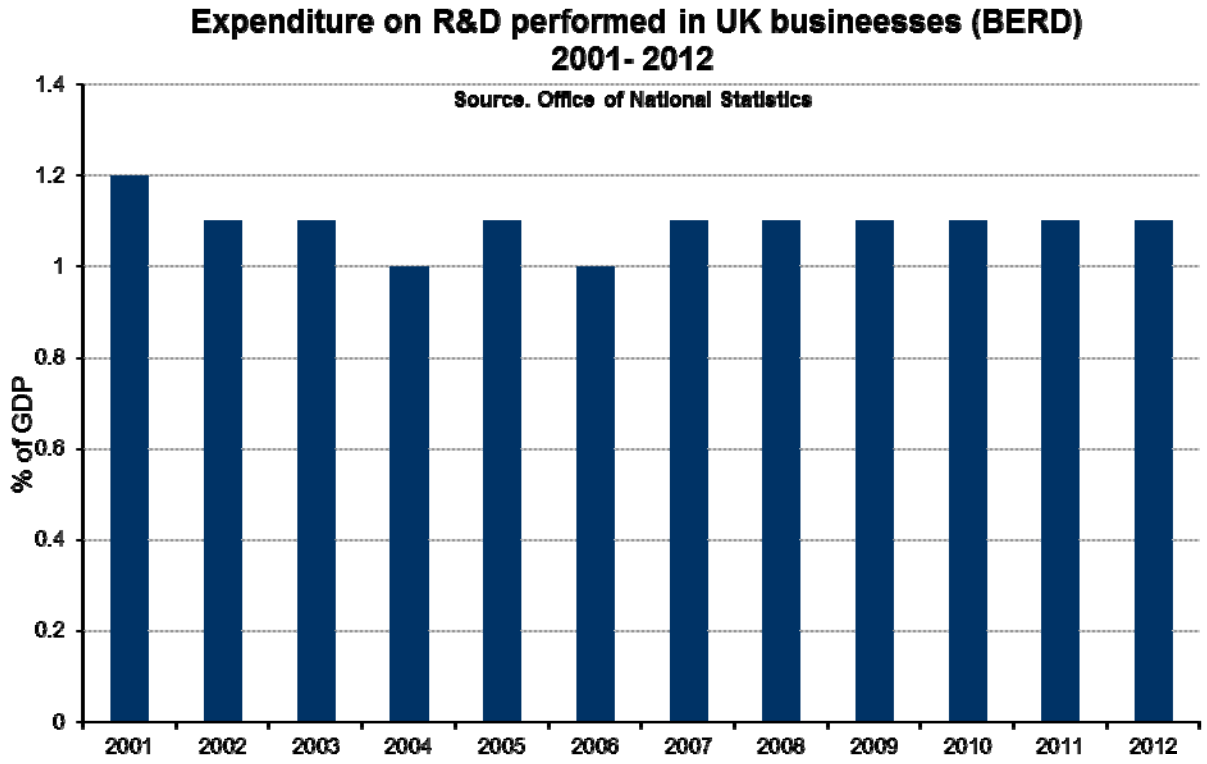


Figure 8

Investment by businesses in R&D is dominated by a relatively small number of sectors. Pharmaceutical, computer programming, motor vehicles & parts and aerospace sectors account for more than 50% of all investment by businesses. **This suggests that efforts are needed to widen investment in innovation by business across more sectors.**

[14] http://www.ons.gov.uk/ons/rel/rdit1/gross-domestic-expenditure-on-research-and-development/2011/stb-gerd-2011.html

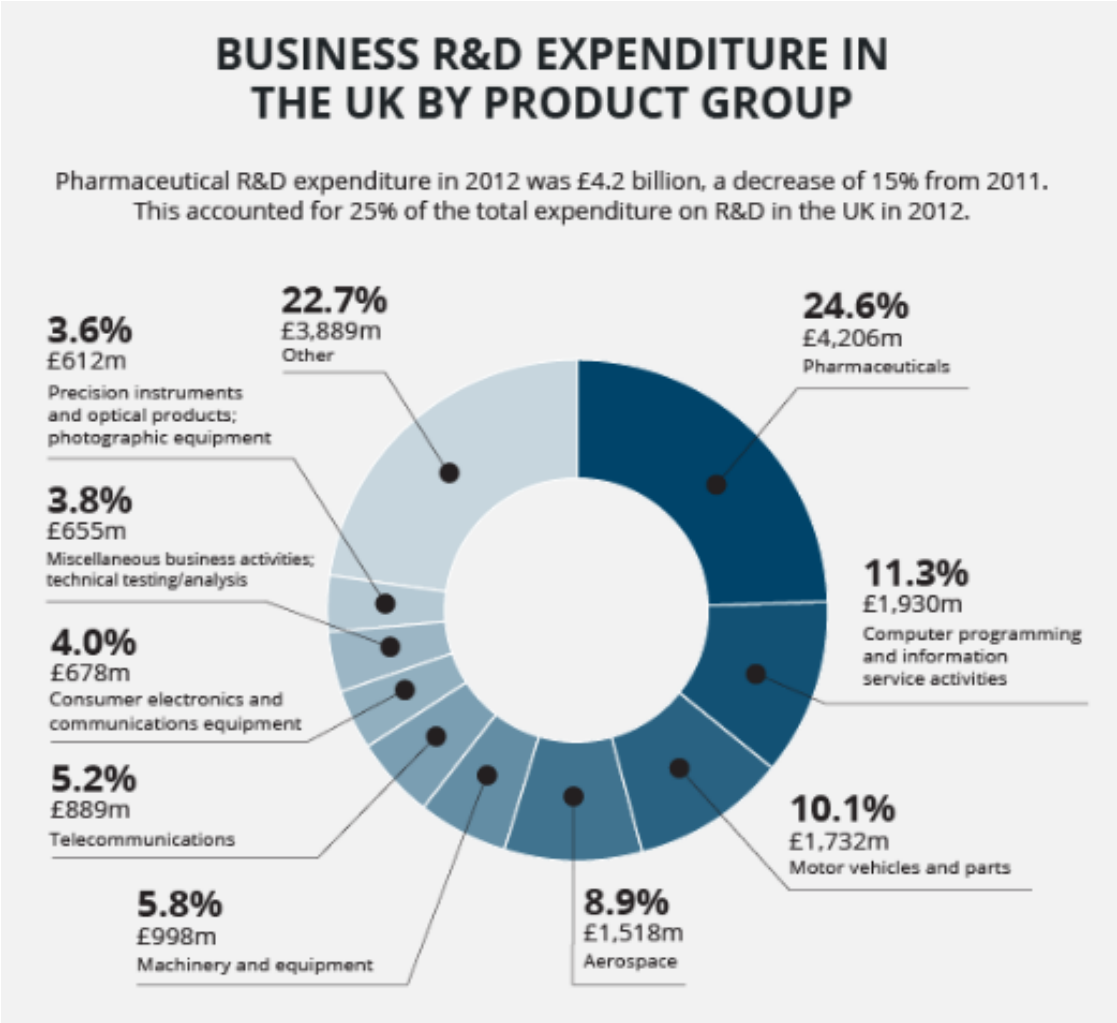


Figure 9
Source: Office of National Statistics

More progress is needed in working with SMEs to bring new products and processes to the market.

Although the number of claims made by SMEs in England for R&D Tax Credits in 2011/12 outnumbered the number of claims made by large companies by 9,235 to 1,840 the total value of these claims favoured the larger firms. Large companies received tax credits to the value of £727 million in the same period whilst SMEs made claims to the value of £392 million. Similarly, universities across England won contracts for collaborative research and consultancy from large firms in 2011/12 worth £365 million. The value of similar contracts placed by smaller firms was £66 million.

There is a need to continue to build levels of innovation in all areas of England, especially in those places where levels are lower, and by investing in and building stronger chains of innovation between different places.

The value and numbers of claims for tax credits differs across the regions of England. Although the data is somewhat skewed because claims are sometimes made from a registered location (often London) and different to where the R&D

actually took place, the majority and the value of claims were made by firms registered in London, the South East and the East of England.

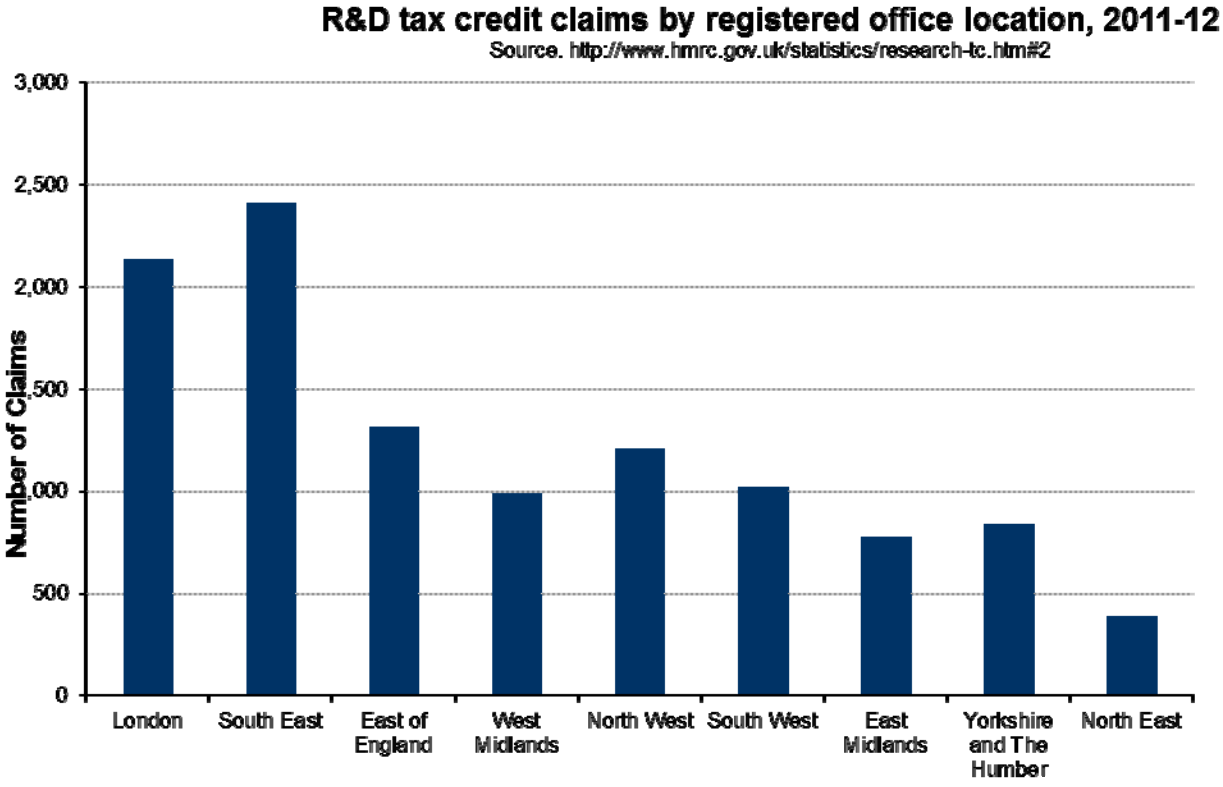


Figure 10

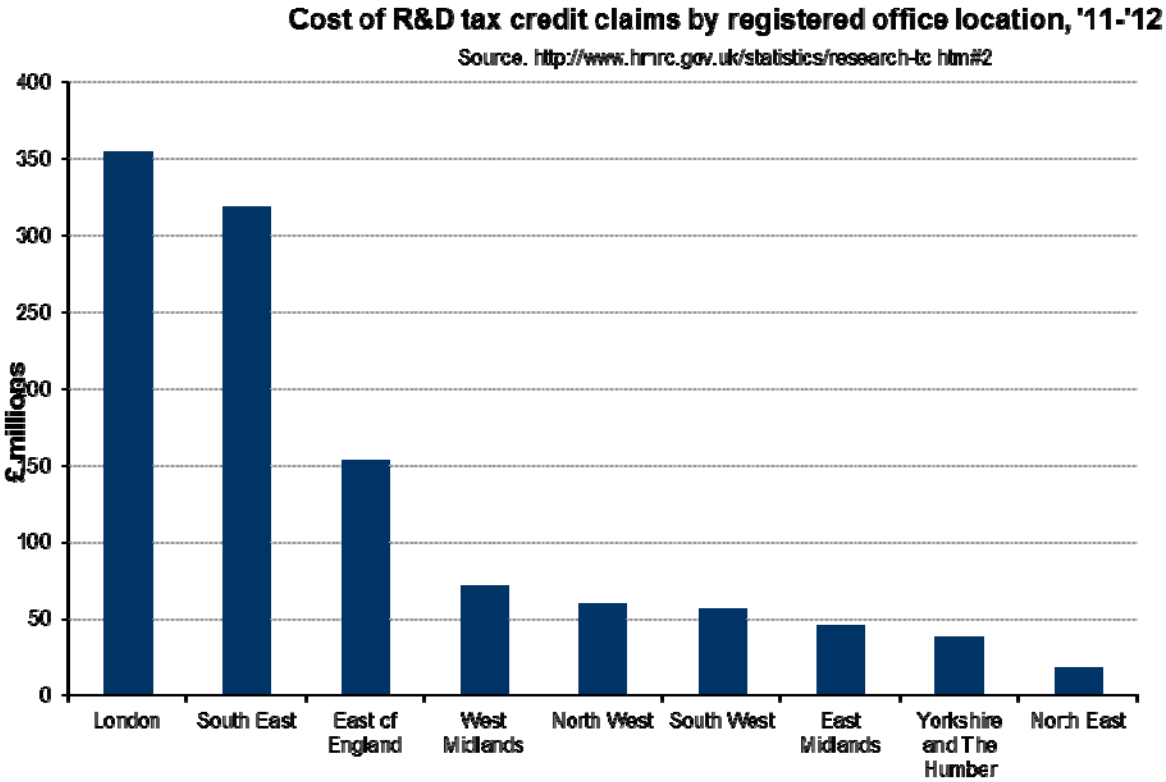


Figure 11

There are also significant variations in overall investment by businesses in research and development. The South East and East of England dominate the remainder of the UK, with approximately 44% of all UK investments in 2012 by business in research & development being made in those two statistical regions. These regions also employed 41% of all FTE research related jobs in the UK.

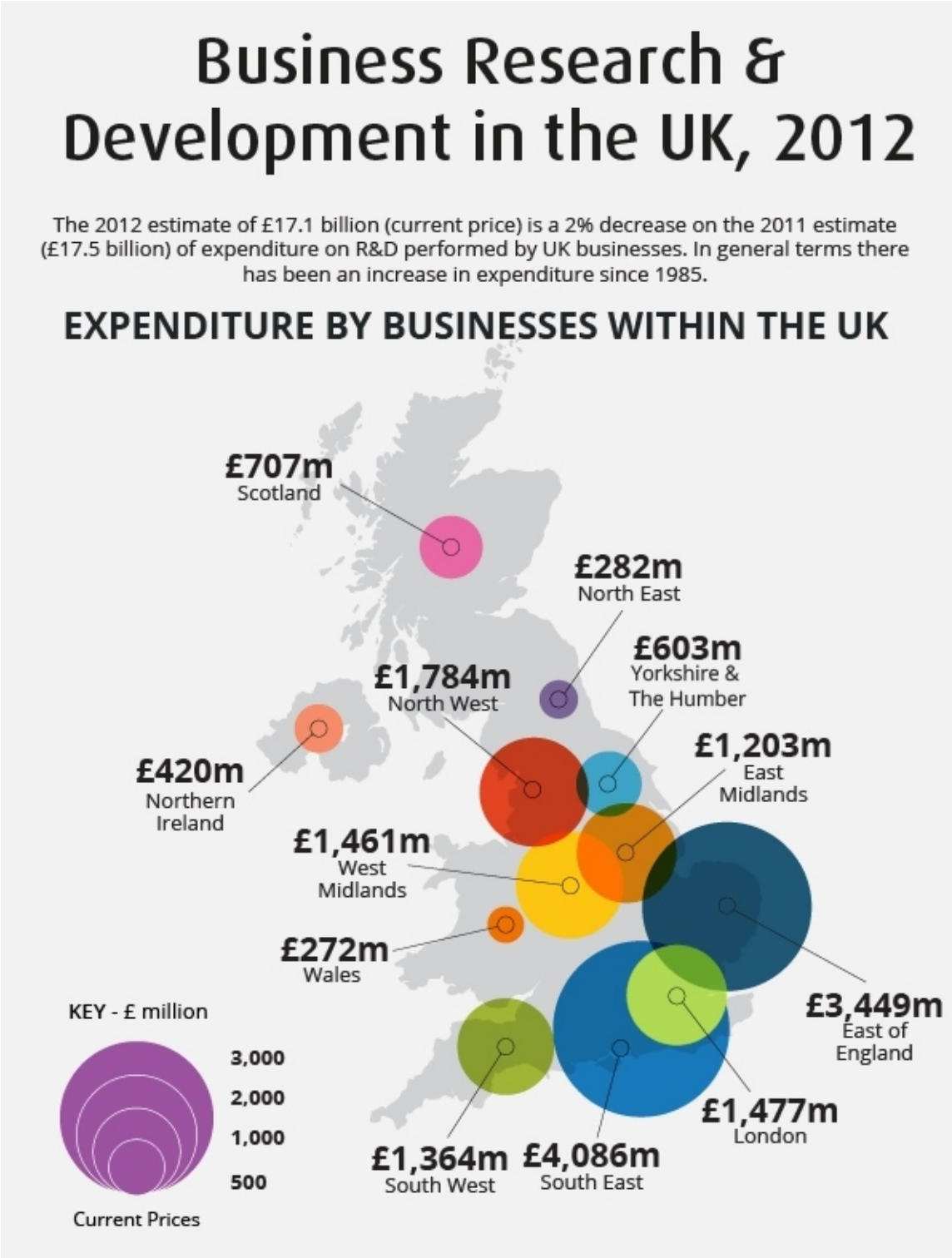


Figure 12
Source: Office of National Statistics

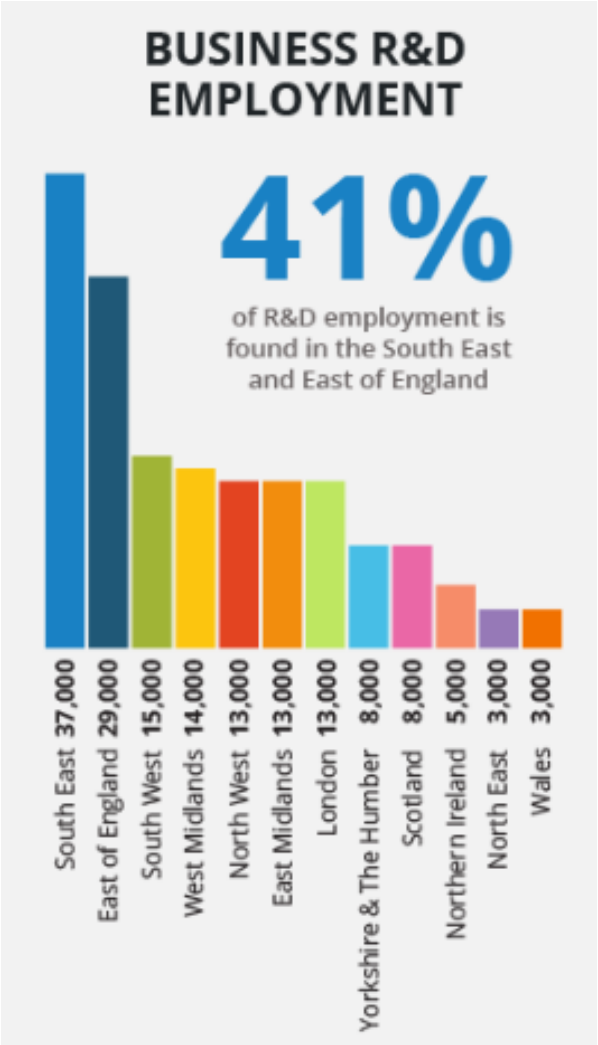


Figure 13
Source: Office of National Statistics

In summary, there are very significant variations in the level of investment in research and development across England. Overall levels of investment in research and development in some parts of England trail significantly. These are predominantly rural and more economically deprived post-industrial areas in the North, North West, West and South West.

The reasons for this variation in levels in investment in innovation are complex and long standing. These include; the general and relative concentration of more productive economic activity and more knowledge intensive industries in London, the wider South East and the larger cities; the geographical concentration of genuinely world class research intensive universities and research campuses; and programmes such as the EU Framework Programmes and many of the UK's investments in innovation, including those funded by the Research Councils and the Technology Strategy Board, are targeted deliberately to centres of research excellence, largely irrespective of their location.

Experience from current support programmes suggests that scale is important in the efficiency and effectiveness of some local economic development interventions. This applies most particularly to actions in support of innovation of a specialist nature, or

because some important sectors, physically concentrated in different parts of the country are nevertheless interconnected through trade and supply chains irrespective of local borders. The costs and practicalities of developing and delivering interventions means that some investment is best organised and implemented on a larger scale, perhaps across several local areas or nationally. This also reduces the risk of financial resources being too widely dispersed to achieve critical mass.

National Policy and Smart Specialisation

The national policy framework related to innovation is defined by the strategic documents set out below; these also inform LEPs smart specialisation strategies and their prioritisation process and help to identify and align their selected activities with national priorities, where possible.

The national Innovation & Research Strategy for Growth (2011), supported by an authoritative economics paper, provides detailed evidence for national innovation and research priorities and how UK and EU funds could support research, development and innovation.

The Strategy notes that the UK has the potential to be a world leader in innovation. The strength of our universities and the wider knowledge base is seen as a strong a national asset. The UK's knowledge base is the most productive in the G8, with a depth and breadth of expertise across over many areas of distinctive research strength. The Strategy confirms the Government's commitment to invest in maintaining and strengthening the research base, and to continue to fund a balance of blue skies and applied research projects. It recognises that the challenges we face in innovation are as big as those elsewhere. Some of these are long-standing, such as ensuring we make the most of the UK's inventions and discoveries. It recognises that the costs of cutting-edge research and the latest high-tech processes are greater than ever before, and are often too large for any one company.

The Strategy emphasises that the need to strengthen the ability to accelerate the commercialisation of emerging technologies. The private sector will always be central to innovation but Government and its partner organisations can play a key role in enabling entrepreneurs, financiers and innovators to operate through improving the interface between universities and business, and the environment for the commercialisation of research. The Strategy recognises that competition is important in driving the quality of research and business innovation. It stresses also that there is overwhelming evidence to show that multi-partner collaborations can add more than the sum of their parts.

The Government will produce a new Science and Innovation Strategy by the end of 2014. This will include a roadmap of how the Government's long-term commitment on science capital will deliver the research and innovation infrastructure to ensure that the UK's capabilities remain world-leading while playing a key role in economic growth and scientific excellence. The development of the strategy is underpinned by a comprehensive stakeholder engagement and evidence base.

The Industrial Strategy

The **Industrial Strategy** of 2012 sets out a long-term, whole of Government approach to how we support business in order to give confidence now for investment and growth. It has five core themes of activity; access to finance, skills, public procurement, sectors and enabling technologies. Support for a limited number of sectors and technologies and the broader research which underpins their development are therefore a fundamental part the approach of Government to the industrial strategy. The choice of these sectors was underpinned by a comprehensive

analysis of the evidence on which sectors can make the greatest contribution to future economic growth and jobs. The analysis considered in which broad sectors actions by Government can add the most value, including advanced manufacturing, knowledge intensive traded services, and enabling sectors.

A further and similarly detailed analytical paper brought together insights from analysis underpinning the sector strategies, focusing on the 4 themes of supply chains, innovation, skills and exports. It confirmed that a sector approach may effectively complement more traditional measures. It identified identifies common across the sectors, but also the significant differences which need to be reflected in policies and funding programmes. It also included the findings of new research to support a number of the strategies, including on nuclear and construction industry supply chains and developments in the information economy.

The Government worked closely with industry and other partners to prepare eleven sector strategies. Strategic partnerships with industry were strengthened or established to lead this work. These partnerships bring together in a collaborative environment for leadership senior figures from industry, representatives of trade associations of firms of all sizes, leading academics, and national agencies and trades unions. Each group is co-chaired by industry and Government.

These Leadership Councils are:

- Life Sciences Ministerial Industry Strategy Group and Medical Technology Strategy Group
- Aerospace Growth Partnership
- Nuclear Industry Council
- Oil and Gas Industry Council
- Offshore Wind Industry Council
- Information Economy Council
- International Education Council
- Agritech Leadership Council
- Construction - Industry Strategy Advisory Council
- Professional and Business Services Council
- Automotive Council

The work of these Councils is overseen and supported by the Industrial Strategy Council. This strategic group includes representatives of each the individual Councils and Ministers.

These partnerships oversaw a process of gathering or ‘search’ for further evidence with a wider range of businesses and other stakeholders. Tools used included:

- **Call for views / evidence** hosted on the Government website

- **Online surveys** to get wider engagement.

- **Workshops** to get views from stakeholders, both, at an early stage to help them to get a good picture of the challenges that the sector faced, and towards the end of the process to road test proposals.

- **Roundtable / focus groups** were used to explore specific topics with a smaller selection of stakeholders.

- **Selected bilateral meetings** individual or groups of firms.

- **Bilateral meetings with Government officials** to capture breadth and depth of views. .

The Government subsequently published individual strategies for each of the sectors. The update to the Life Science strategy was published in December 2012. Strategies have been published for sectors of Aerospace, Nuclear, Oil & Gas, Information Economy, Construction, Automotive, Professional Business Services, Offshore Wind, Agri-tech and Education.

The independent review of Sir Andrew Witty[15] supported this process by including 'heat maps' for each of the sectors in the Industrial Strategy[16] showing the extent to which LEP areas have a comparative advantage in terms of firms and numbers of people employed. These maps used a mathematical technique Location Quotients. These are explained in Appendix Two.

These 'heat maps' were supported by a detailed quantitative database of a larger number of sectors in their area showing numbers and location quotient of firms and employees[17]. This supported LEPs in their work to identify opportunities to both contribute to, and benefit from the Sector Strategies; to provide strong evidence in support of other niche or specialist areas of expertise with genuine importance and future relevance in their local area; and, importantly, to identify opportunities for collaboration with other parts of England with similar specialisms. This means that investments in each sector will differ according to where each sector is concentrated physically. Not every sector will be supported in each LEP area. The process of Smart Specialisation adopted by LEPs at local level will lead to the identification of a deliberately limited number of priority actions.

Business will provide the vast majority of investment finance for each of the sector strategies. The Government will support agreed actions from relevant public funds through a range of different channels. EU funding such as ESIF will be invested in compliance with agreed regulations. The focus on the new programme period 2014-2020 supports SMEs in areas of market failure to commercialise research and to bring new products to the market, often working in close collaboration with other innovative firms and with universities. This means that the range of actions to be supported by ESIF will be limited and targeted to specific aspects of each Industrial Sector Strategy. For example, it is unlikely that ESIF can or will be used to support universities to market their considerable strengths to attract more international

[15] Witty A. (2013) Encouraging a British Invention Revolution: Sir Andrew Witty's Review of Universities & Growth: Final Report and Recommendations.
[16] A heat map for Offshore Wind could not be published as the data was deemed to be disclosive by the Office of National Statistics
[17] Anyadike-Danes, Bonner, Drews & Hart (2013) Localisation of Industrial Activity across England's LEPs 2008 & 2012, Enterprise Research Centre, Aston University, Birmingham

students. Details of what actions can be funded with ESIF will be set out in the Partnership Agreement and Operational Programme(s).

The Industrial Strategy: One Year On

The government published in April 2014 a comprehensive progress report on the Industrial Strategy[18]. It recognised that the true impact of industrial strategy may not be seen for a decade or more but the progress report showed how much progress have been made in only twelve months. The report demonstrated that the government had allocated more than £2 billion in that period to industrial strategy objectives, a clear indicator of commitment in a period of fiscal constraint. In addition to investing time to set the strategic direction, industry has contributed to the delivery by match-funding the majority of this investment. The progress report noted this as an important departure from the old ways of working and as a demonstration of the confidence of industry in the approach. The progress report featured a number of key investments, including:

- The Aerospace Technology Institute is now operational, including a £2 billion joint funding commitment by government and industry between 2013 and 2020, for research and development of the technologies needed for quieter, more energy efficient and environmentally friendly planes.

- The Advanced Propulsion Centre (APC) has been established with up to £75 million available initially from Government for pilot projects to develop a new generation of low carbon powertrain technologies, kick-starting a £1 billion joint investment by Government and industry over 10 years. The APC's first projects were announced in April 2014.

- The £70 million Agri-Tech Catalyst has been launched to support industry-led 'proof of concept' development of near-market agricultural innovations. In the first phase, announced in March 2014, eleven projects across the UK benefitted from £2.8 million from Government, alongside £1.4 million from industry.

- Dedicated funding of £100 million per year has been committed to support projects to grow skills in key sectors and technologies, through co-funding with employers.

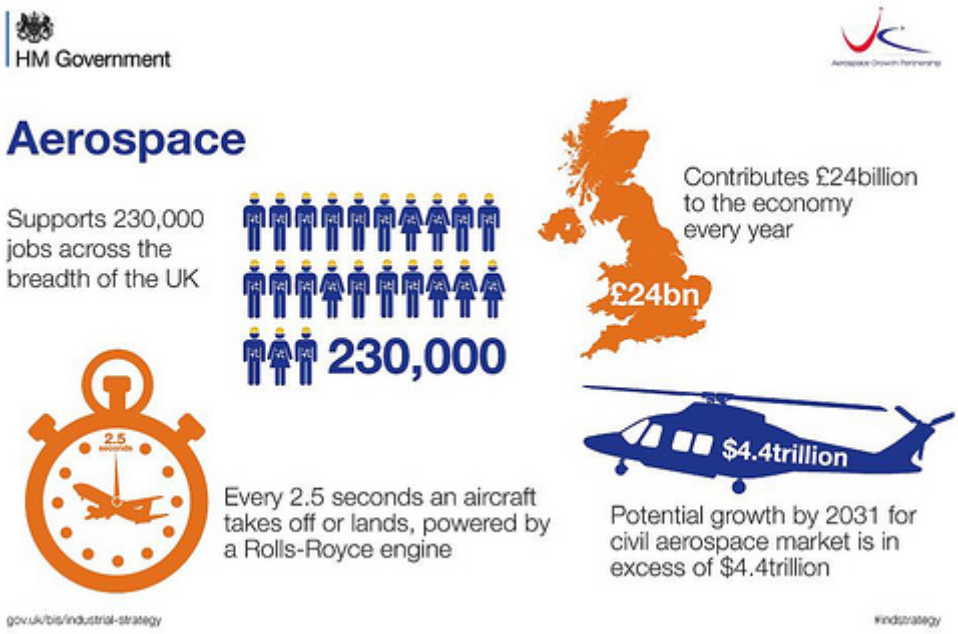
- Seven Catapult Centres are now open for business, with £1.5 billion of public and private funding over their first five years, helping businesses bring innovative ideas to commercial reality.

- The British Business Bank has been launched in interim form. Its programmes made £660 million of finance available to Small and Medium sized enterprises (SMEs) in 2013 – a 73% year-on-year increase from 2012.

[18] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/306854/bis-14-707-industrial-strategy-progress-report.pdf

The Industrial Strategy Sector Strategies

Aerospace



The UK is the number one aerospace industry in Europe. The sector supports more than 3,000 companies employing around 230,000 people (direct and indirect). It is a sector that is high value-added and intensive in R&D. The sector has performed relatively well in the recession; output has grown by an average rate of 6% from 2008-2012. In 2012 it was responsible for 3.9% of manufacturing GVA and 4.4% of employment; up from 2.1% and 2.9% in 2000. By 2031 the global civil aerospace market is estimated to be worth in excess of $4.5trn.

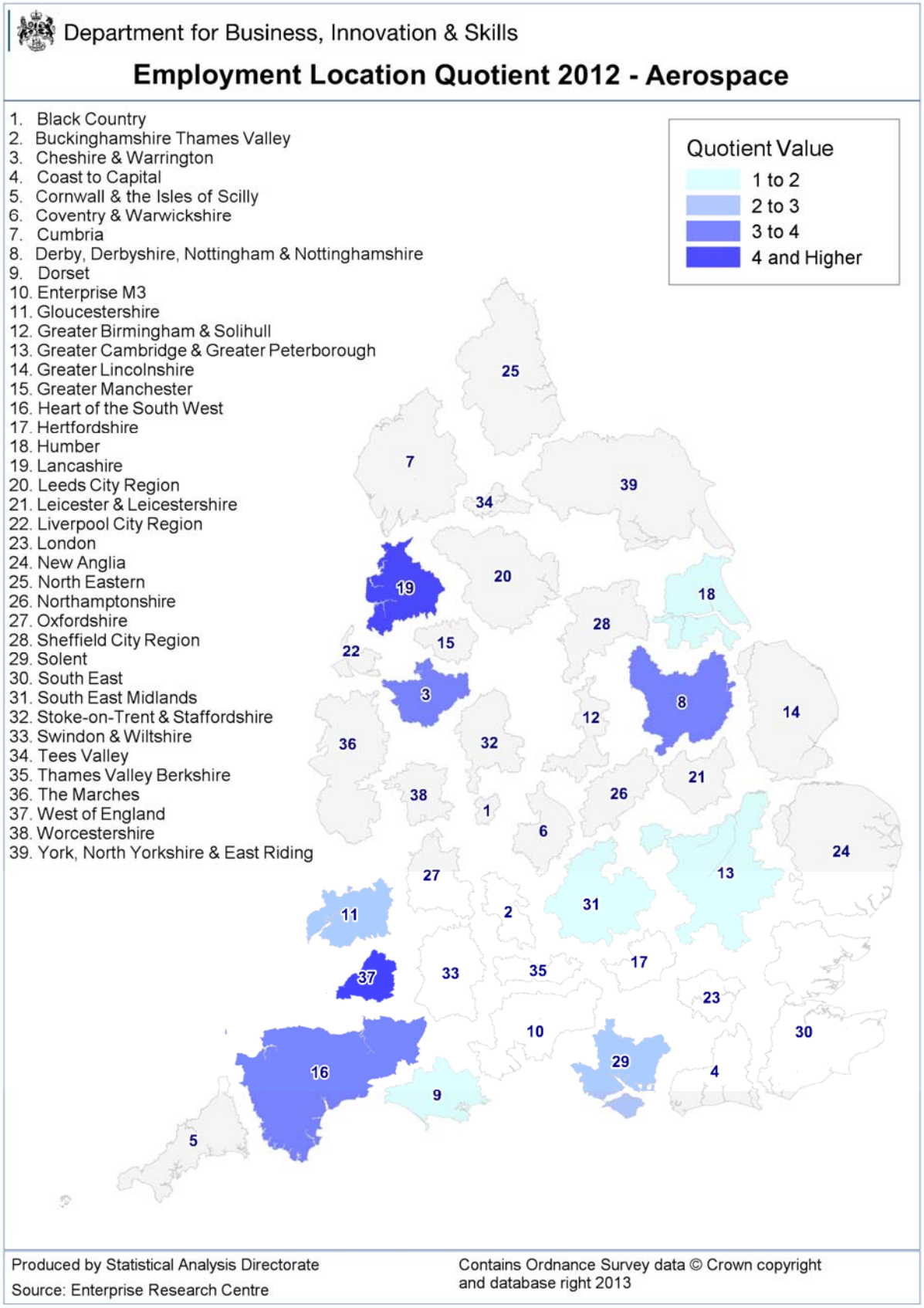
The UK aerospace industry is expected to grow at a rate of 6.8% over the next few years. This is driven by a global increase in air traffic, which is expected to be sustained at a rate of 4.7% per annum between now and 2030, meaning a doubling in air traffic in the next 15 years. Between now and 2031, there is a global requirement for over 27,000 new passenger aircraft worth circa $3.7 trillion. Over the same time period, the global market demand for new commercial helicopters is expected to be in excess of 40,000 units, worth circa $165 billion.

Analysis by the Confederation of British Industry (CBI) suggests that just by maintaining our current market share, air traffic growth in Asia alone has the potential to contribute an extra £4.7 billion in UK exports annually in the next ten years, adding 20,000 high-value jobs.

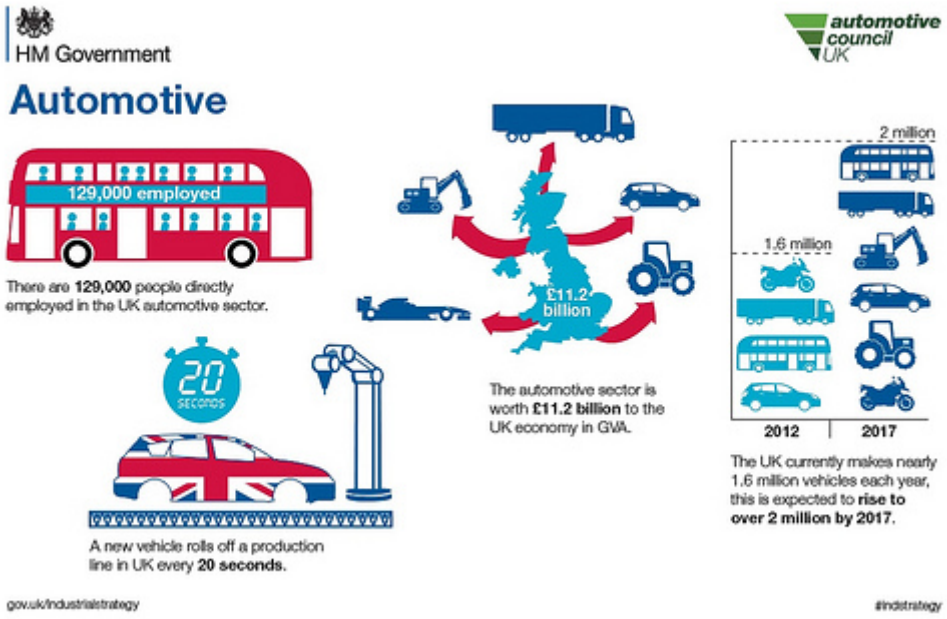
Despite this, the UK's incumbent position is at risk as the next generation of aircraft will feature substantially different product and manufacturing technologies from those used today.

The Aerospace Industrial Strategy developed by the Aerospace Growth Partnership focuses investment on those areas where the UK has particular strengths, especially

in the four key, high-value, highly complex areas of modern aircraft – wings, engines, aero structures and advanced systems.



Automotive



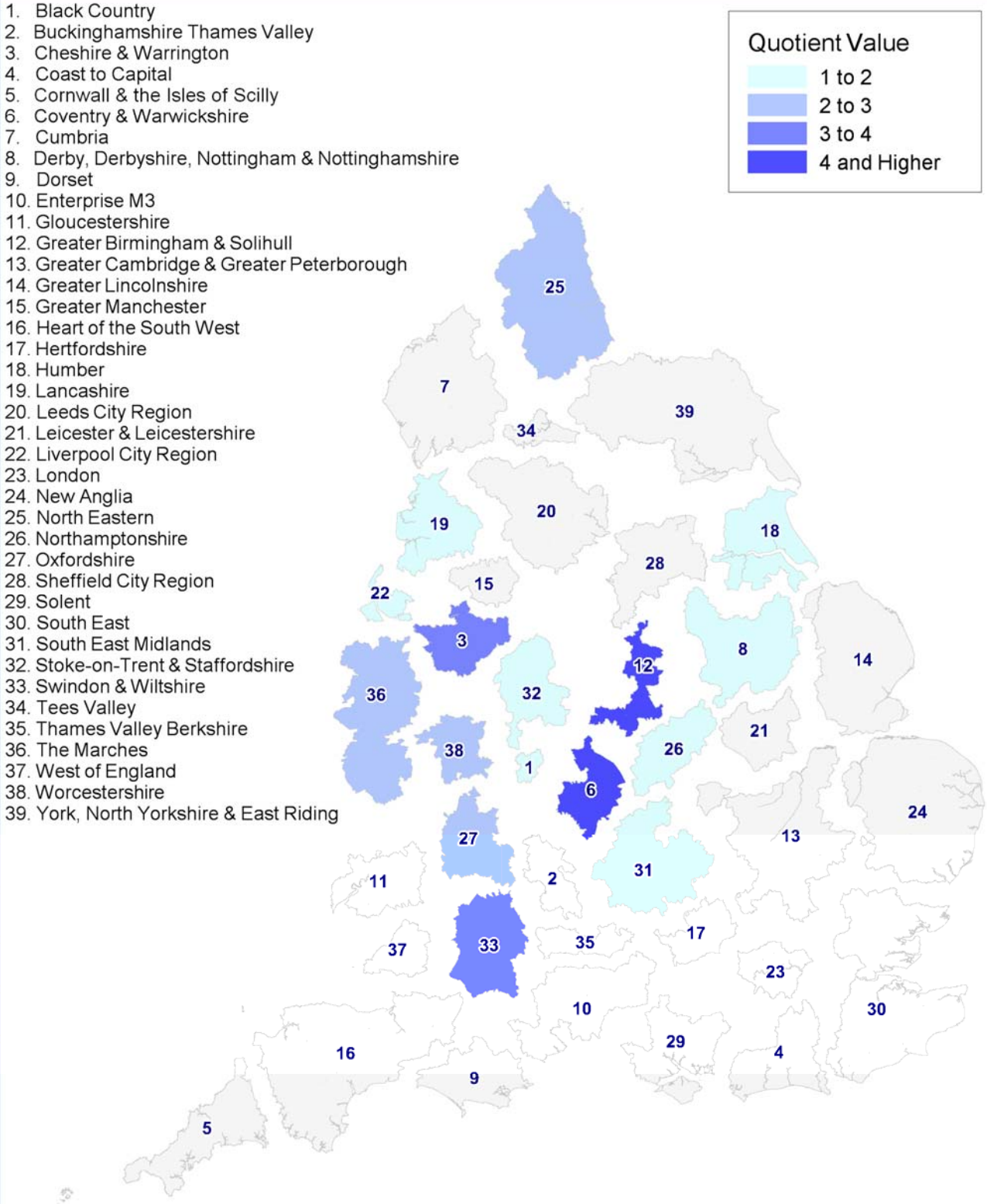
The UK is the fourth largest vehicle producer in Europe, making 1.58 million vehicles in 2012. Every 20 seconds a car, van, bus or truck rolls off a production line. Over 80% of these are exported to more than 100 countries. From 2002-12, the automotive sector has accounted for an average of 0.7% of UK GVA and 5.2% of UK manufacturing jobs. Vehicle exports from the UK have recovered strongly since 2009; at a quicker rate than in the USA and Germany. Exports to China and India have shown dramatic growth in the last decade and global demand in the future will be driven by these and other emerging economies. The challenge is to maintain this momentum by growing the UK share of the value chain and by investing in the R&D on ultra-low emission vehicles.

The Automotive Strategy developed by the Automotive Council focuses on a limited number of key areas for investment, including innovation and technology. By 2040 almost none of Europe's new cars will be powered solely by a traditional petrol or diesel engine. The UK needs not only an increase in R&D investment, but also to capitalise on this – by securing production in the UK. This requires innovative small and medium enterprises (SMEs) to be nurtured and investment by multinational companies. The Strategy also focuses on the domestic supply chain which is relatively weak. On average, only a third of the parts that are used during manufacture are sourced from suppliers based in the UK. Increasing the UK content is dependent on a stronger automotive supply chain. UK suppliers could then take a much bigger share of the market with £3 billion of opportunities identified by the Automotive Council.

Department for Business, Innovation & Skills

Employment Location Quotient 2012 - Automotive

1. Black Country
2. Buckinghamshire Thames Valley
3. Cheshire & Warrington
4. Coast to Capital
5. Cornwall & the Isles of Scilly
6. Coventry & Warwickshire
7. Cumbria
8. Derby, Derbyshire, Nottingham & Nottinghamshire
9. Dorset
10. Enterprise M3
11. Gloucestershire
12. Greater Birmingham & Solihull
13. Greater Cambridge & Greater Peterborough
14. Greater Lincolnshire
15. Greater Manchester
16. Heart of the South West
17. Hertfordshire
18. Humber
19. Lancashire
20. Leeds City Region
21. Leicester & Leicestershire
22. Liverpool City Region
23. London
24. New Anglia
25. North Eastern
26. Northamptonshire
27. Oxfordshire
28. Sheffield City Region
29. Solent
30. South East
31. South East Midlands
32. Stoke-on-Trent & Staffordshire
33. Swindon & Wiltshire
34. Tees Valley
35. Thames Valley Berkshire
36. The Marches
37. West of England
38. Worcestershire
39. York, North Yorkshire & East Riding



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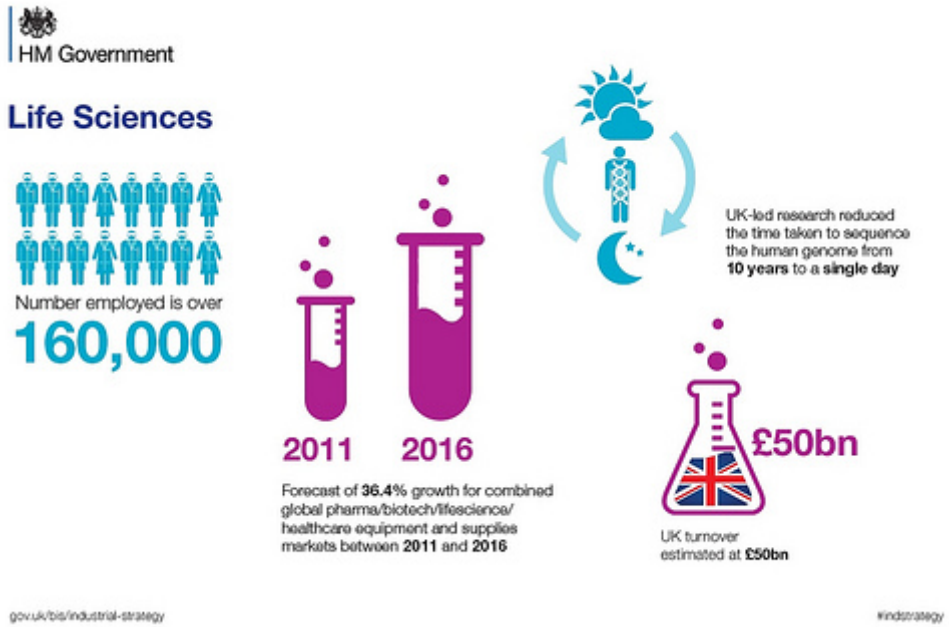
Life Sciences



The Life Sciences is growing faster than the economy as a whole and is a key source of high-skill, high-tech jobs. Pharmaceuticals, medical biotechnology and medical technology sectors together comprise around 4,500 firms, employing 165,000 staff, with an annual turnover of over £50bn and R & D spend of nearly £5bn. The pharmaceuticals sector alone accounts for more UK-based business R&D than any other manufacturing sector (accounting for over 28% of all business R&D); and exports from pharmaceuticals account for a much higher share than is seen globally. Over 300 pharmaceutical companies are based in the UK and employ nearly 78,000 people, with an annual turnover of £31bn. The medical technology and medical biotechnology sectors represent over 4,000 companies employing 87,000 people with an annual turnover of around £18.4bn.

Innovation in Health and Wealth, published in December 2011 outlined the contribution the National Health Service can make to the Life Sciences Strategy and to the wider economy. It shows that ill health impairs economic productivity. The annual economic costs of working-age ill health are estimated to be over £100bn. The cost to the taxpayer – benefit costs, additional health costs and forgone taxes – are estimated to be over £60bn. In simple terms, good health is good for business, and good for the economy. Reports of the European Commission show that health expenditure in the EU accounts for around 10% of GDP and almost 15% of public spending. The health and social sector workforce accounts for 10% of all jobs in the EU. Employment in the sector continues to grow with around 8 million job openings projected up to 2020.

Innovation in Health and Wealth focuses on the NHS as a major investor and wealth creator in the UK, whose success in adopting innovation enables industries to invest in developing the technology and other products the NHS needs for its development. The aim of is to support the NHS in achieving systemic change in the way it operates; in pursuing innovations that add value for the service but not cost and in enabling the consistent and widespread adoption and diffusion across the NHS. This

involves both the supply of, but also critically the demand for, new and existing ideas, services and products. Central to this agenda is the relationship between the NHS, academia and industry.

NHS England has confirmed the designation of 15 new Academic Health Science Networks (AHSNs) across the country[19]. Acting as the strategic entry point for industry to the health sector, each AHSN has the potential to transform health and healthcare by putting innovation at the heart of the NHS. This will improve patient outcomes as well as contributing to economic growth. AHSNs present a unique opportunity to pull together the adoption and spread of innovation with clinical research and trials, informatics, education, and healthcare delivery. They will develop solutions to healthcare problems and get existing solutions spread more quickly by building strong relationships with their regional scientific and academic communities and industry. They will work with all parts of the NHS and healthcare delivery partners to accelerate the adoption and spread of innovation.

The use of ESIF to support the work of AHSNs to bring new products to the commercial market provides an important opportunity to support firms who have benefitted from the Health, Demographic Change & Wellbeing strand of the Societal Challenge focus within the new Horizon 2020 research programme funded directly the European Commission.

[19] The designated AHSNs are: East Midlands, Eastern, Greater Manchester, North East and North Cumbria, North West Coast, Imperial College Health Partners, Oxford, South London, South West Peninsula, Kent, Surrey and Sussex, UCL Partners, Wessex, West Midlands, West of England, and Yorkshire and Humber

Department for Business, Innovation & Skills

Employment Location Quotient 2012 - Life Sciences

1. Black Country
2. Buckinghamshire Thames Valley
3. Cheshire & Warrington
4. Coast to Capital
5. Cornwall & the Isles of Scilly
6. Coventry & Warwickshire
7. Cumbria
8. Derby, Derbyshire, Nottingham & Nottinghamshire
9. Dorset
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23. London
24. New Anglia
25. North Eastern
26. Northamptonshire
27. Oxfordshire
28. Sheffield City Region
29. Solent
30. South East
31. South East Midlands
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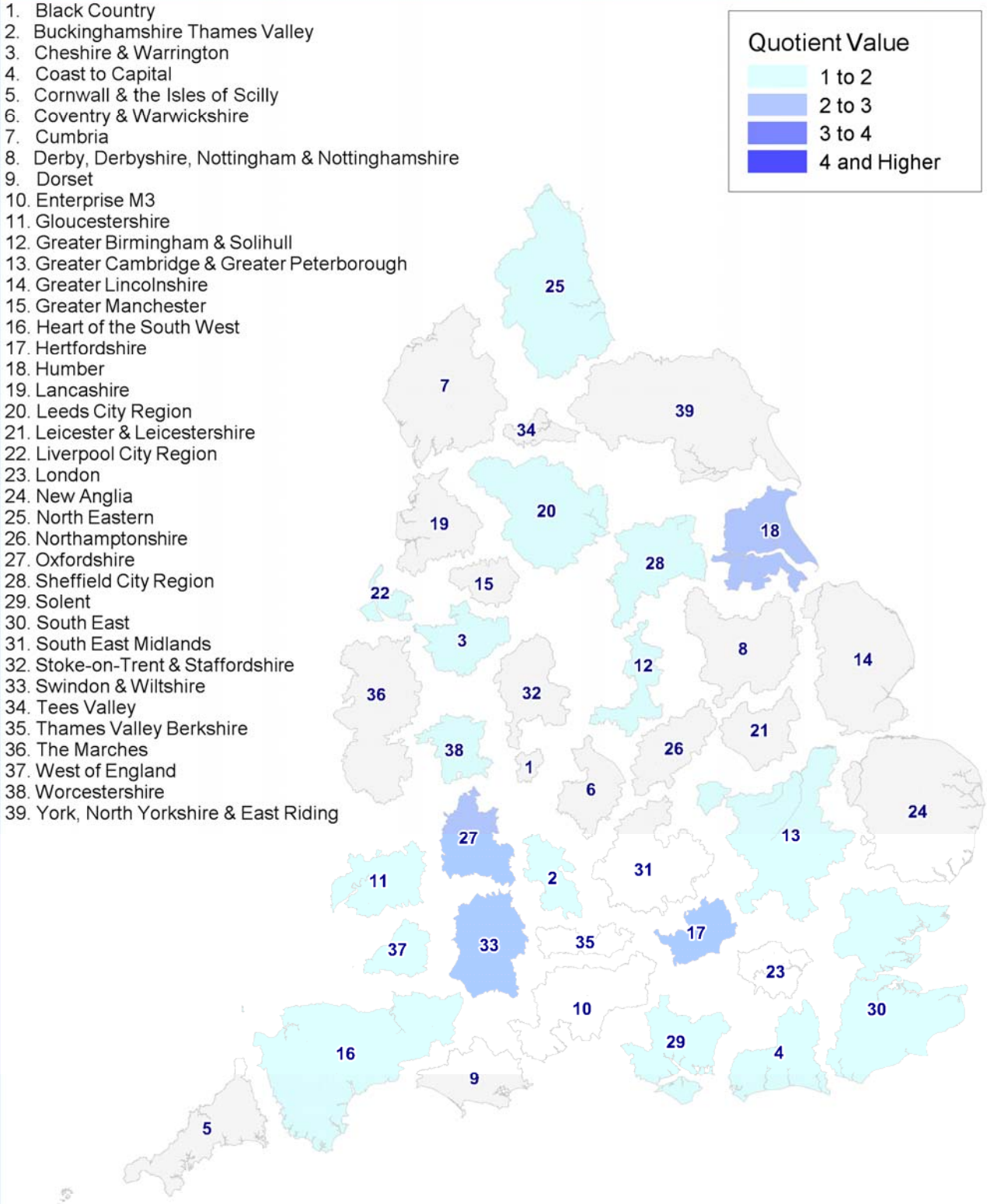

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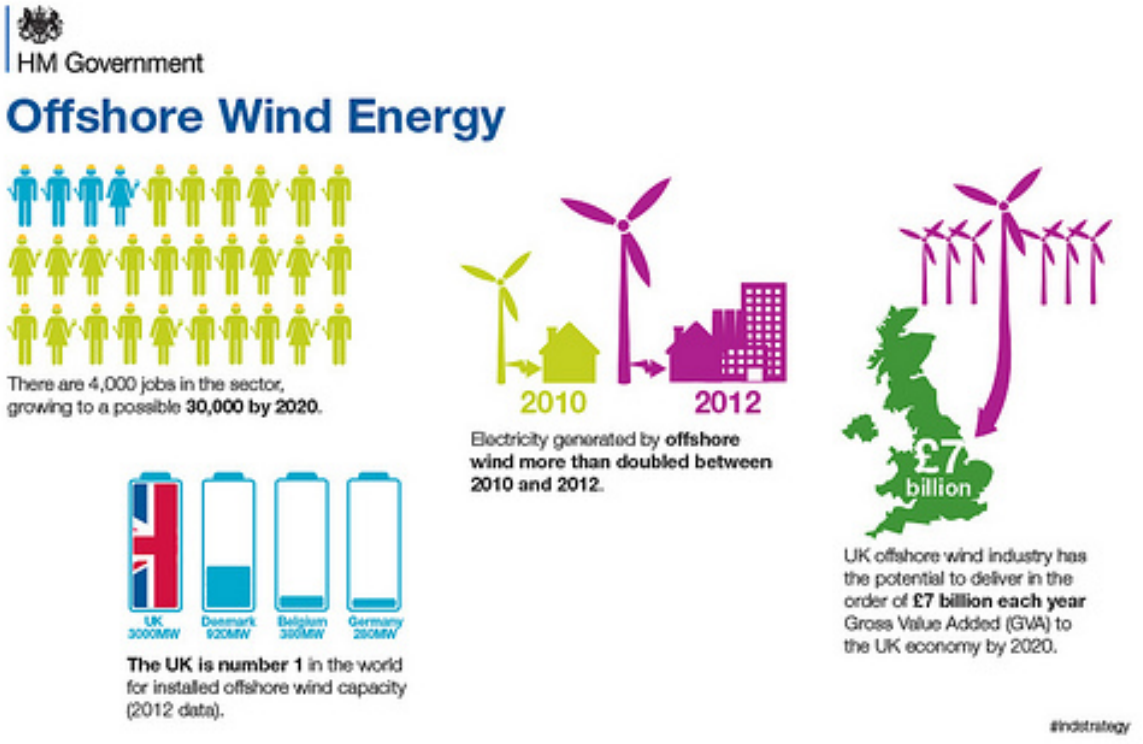
Offshore Wind



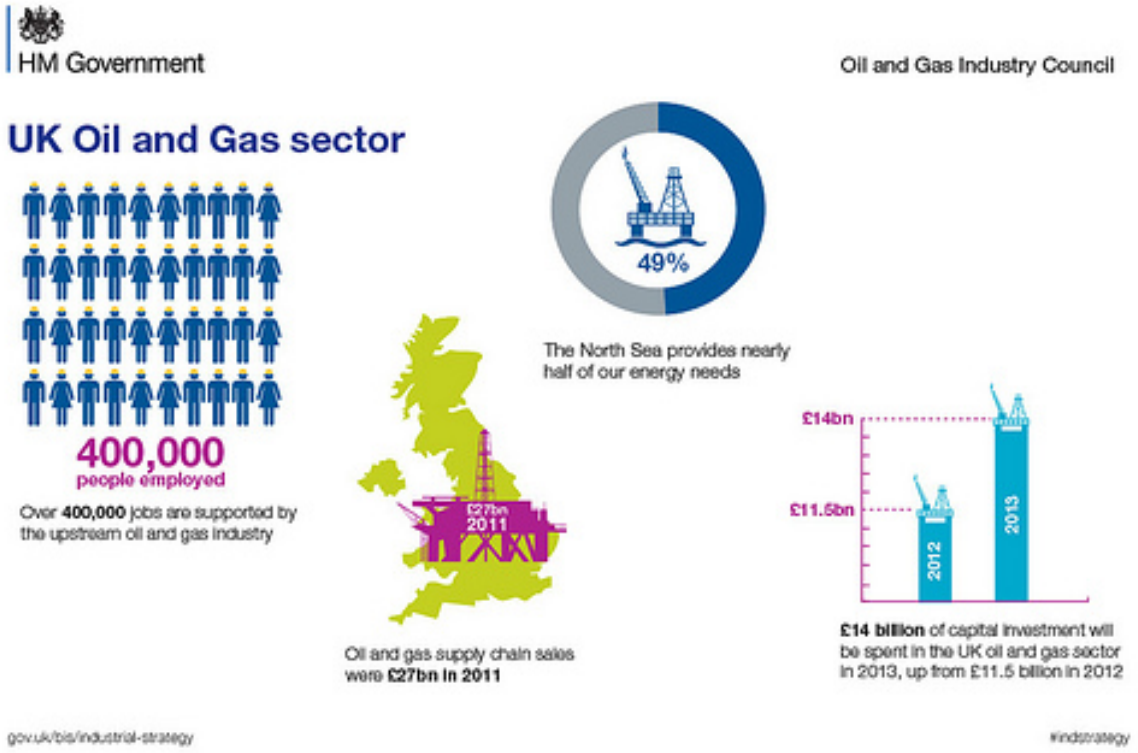
Offshore wind is an ideal technology for the UK. Our shallow seas and strong winds make it an important comparative asset. The offshore wind industry has evolved to become a large-scale commercial technology with an important role to play in helping to meet our 2050 carbon targets. Long-term price stability and a huge development pipeline, this has helped make the UK one of the most attractive locations in the world to invest in the offshore wind market.

The UK has more offshore wind turbines operating than the rest of the world: more than 1000 turbines with a combined capacity of about 3.6 GW, as well as the largest wind farm, the largest construction project, the largest planning application and the largest development pipeline in the world. Energy generated from offshore wind rose by 46% between 2011 and 212.

The sector has the potential to become one of strategic economic importance, supporting a thriving supply chain and exporting expertise and technology all over the world. In 2020/21, under a strong growth scenario, the sector could deliver approximately £7 billion GVA (excluding exports) and could support over 30,000 Full Time Equivalent jobs. Independent analysis forecasts 28GW of installed offshore wind capacity across the EU by 2020 and 55GW across the EU by 2030. It has been estimated that offshore wind could increase net exports by £7-18bn by 2030.

Data is unavailable for statistical reasons for the Offshore Wind sector preventing disclosure in some places of potentially sensitive commercial information. However, the sector is located largely in those LEPs situated around the coast, particularly the Eastern, North Eastern and North Western coastal areas.

Oil & Gas



The Oil & Gas sector provides employment for 400,000 people across the UK (45% in Scotland and 55% in England, Wales and Northern Ireland). It is our largest industrial investor and is investing more than ever before (estimated at £14 billion in 2013). The sector has a strong domestic supply chain of over 1,100 companies that has seen revenue growth each year since 2008, reaching £27 billion in 2011.

The UK is internationally recognised as a global leader in subsea engineering and a centre of excellence in project management, design engineering, asset and operational management, design and manufacturing of advanced equipment, research and development, safety management training and education and professional and financial services.

The new Oil & Gas Industry Council, whose membership includes Ministers, is co-chaired by Government and a leading member of the industry. It will provide leadership and oversee implementation of a strategy which supported by a series of initiatives grouped under the following headings: Safety; UK Supply Chain; Domestic and International Growth; PILOT; Access to Finance; Technology; Skills; Awareness of the Industry; Engaging with other industries; Decommissioning; and the Fiscal Regime.

Department for Business, Innovation & Skills

Employment Location Quotient 2012 - Oil & Gas

1. Black Country
2. Buckinghamshire Thames Valley
3. Cheshire & Warrington
4. Coast to Capital
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6. Coventry & Warwickshire
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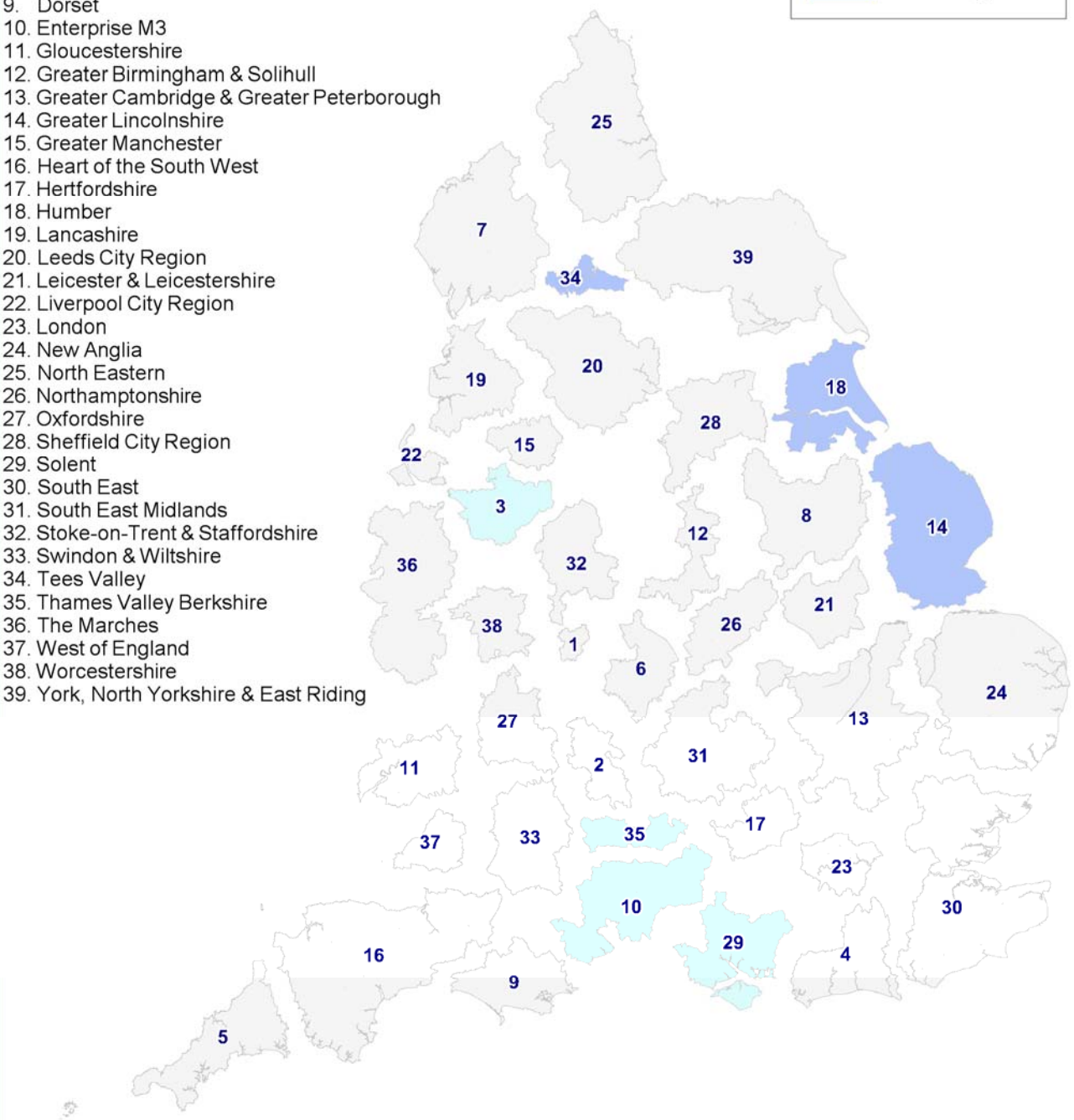

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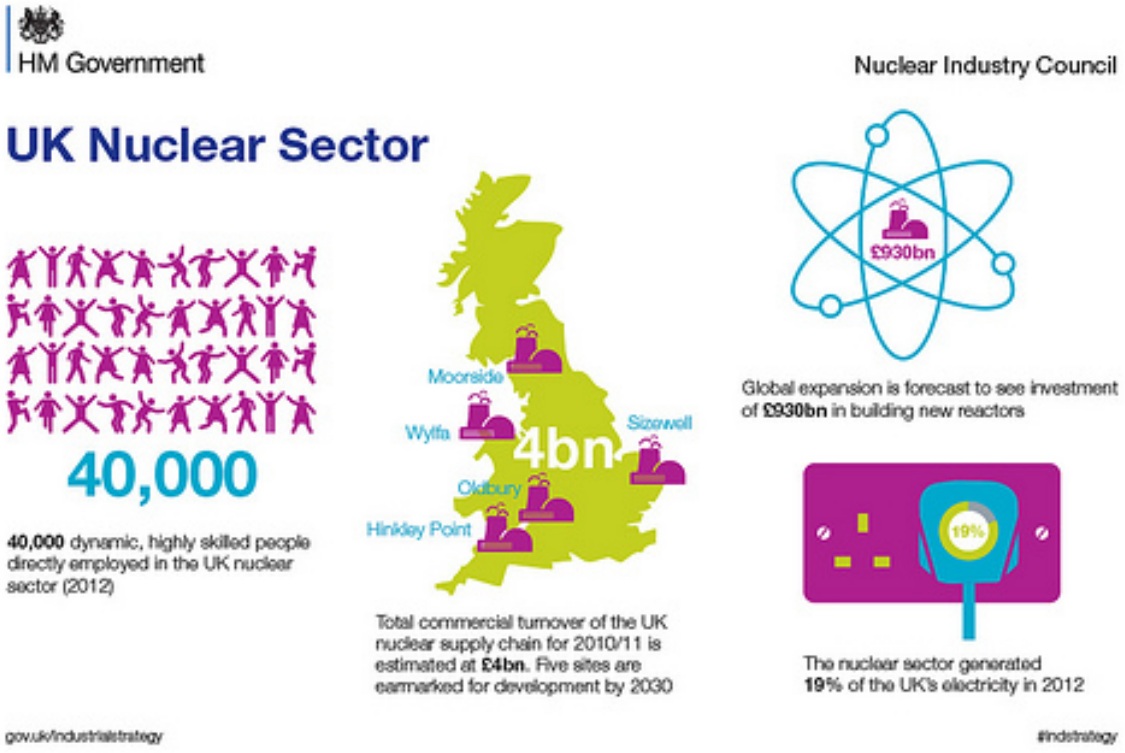
Nuclear



The Nuclear industry will play a significant role in the UK energy mix in the future. Existing activity to decommission existing stations is worth approximately £3 billion a year. Huge opportunities lie ahead for companies in the nuclear sector. The industry is set for a global expansion over the coming decades. Around £930 billion investment is planned globally to build new reactors and £250 billion decommissioning those that are becoming redundant.

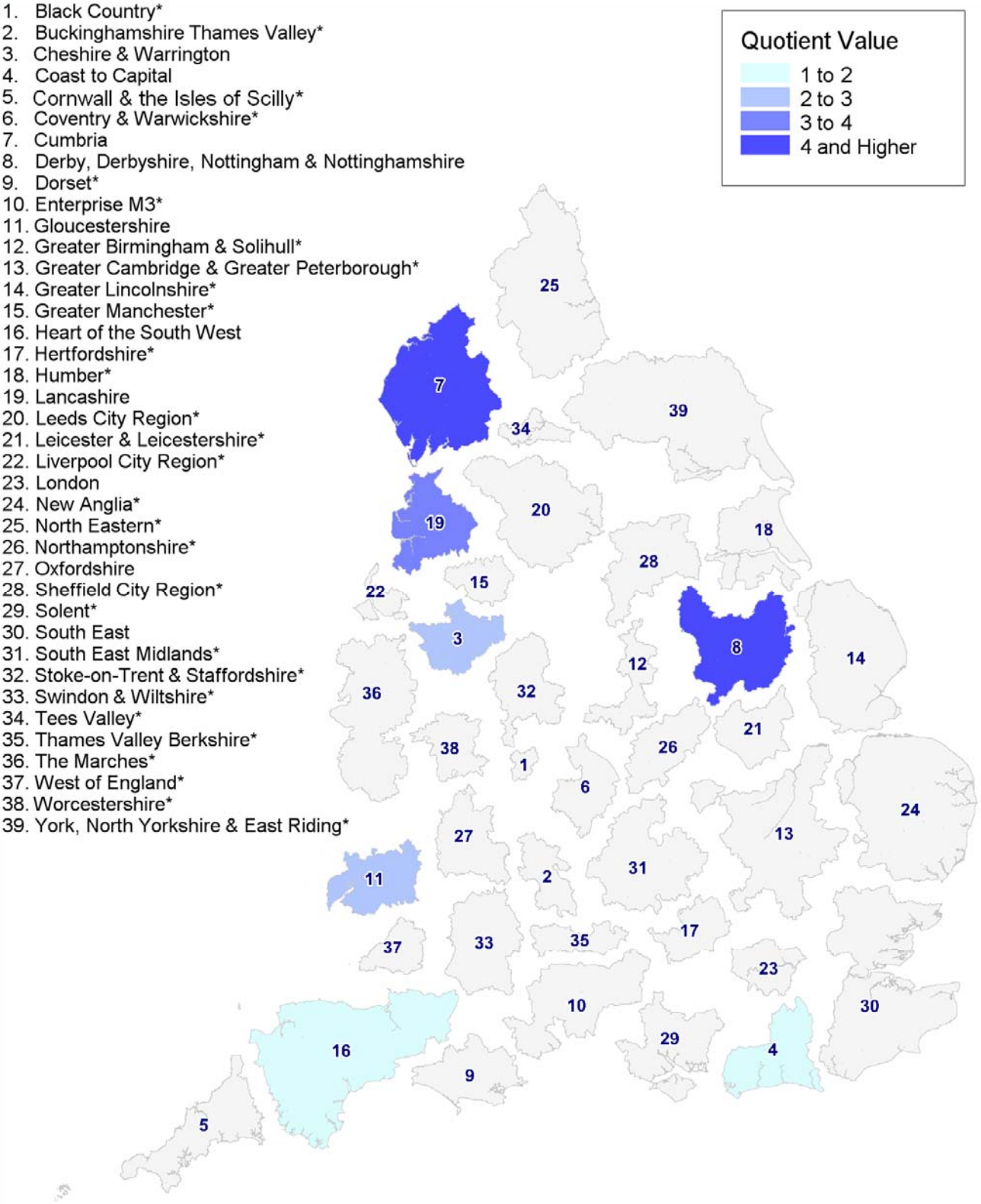
The Government sees the domestic new build and wider nuclear market as an essential platform to further enhance the UK nuclear commercial base and to grow global market share. In the UK, industry has set out plans to deliver around 16 GW of new nuclear capacity by 2030. That broadly translates into at least 12 new nuclear reactors at five sites currently earmarked for development:

This is a significant programme of new build. The construction of these new stations, together with providing the long term infrastructure and supply chain needed to support them, and building an important UK nuclear export sector, means a new concentrated strategic approach is needed to ensure requirements are met across the whole sector. The supply chain and skills for the sector as a whole going forward will largely be developed from this existing base.

Department for Business, Innovation & Skills

Employment Location Quotient 2012 - Nuclear

1. Black Country*
2. Buckinghamshire Thames Valley*
3. Cheshire & Warrington
4. Coast to Capital
5. Cornwall & the Isles of Scilly*
6. Coventry & Warwickshire*
7. Cumbria
8. Derby, Derbyshire, Nottingham & Nottinghamshire
9. Dorset*
10. Enterprise M3*
11. Gloucestershire
12. Greater Birmingham & Solihull*
13. Greater Cambridge & Greater Peterborough*
14. Greater Lincolnshire*
15. Greater Manchester*
16. Heart of the South West
17. Hertfordshire*
18. Humber*
19. Lancashire
20. Leeds City Region*
21. Leicester & Leicestershire*
22. Liverpool City Region*
23. London
24. New Anglia*
25. North Eastern*
26. Northamptonshire*
27. Oxfordshire
28. Sheffield City Region*
29. Solent*
30. South East
31. South East Midlands*
32. Stoke-on-Trent & Staffordshire*
33. Swindon & Wiltshire*
34. Tees Valley*
35. Thames Valley Berkshire*
36. The Marches*
37. West of England*
38. Worcestershire*
39. York, North Yorkshire & East Riding*



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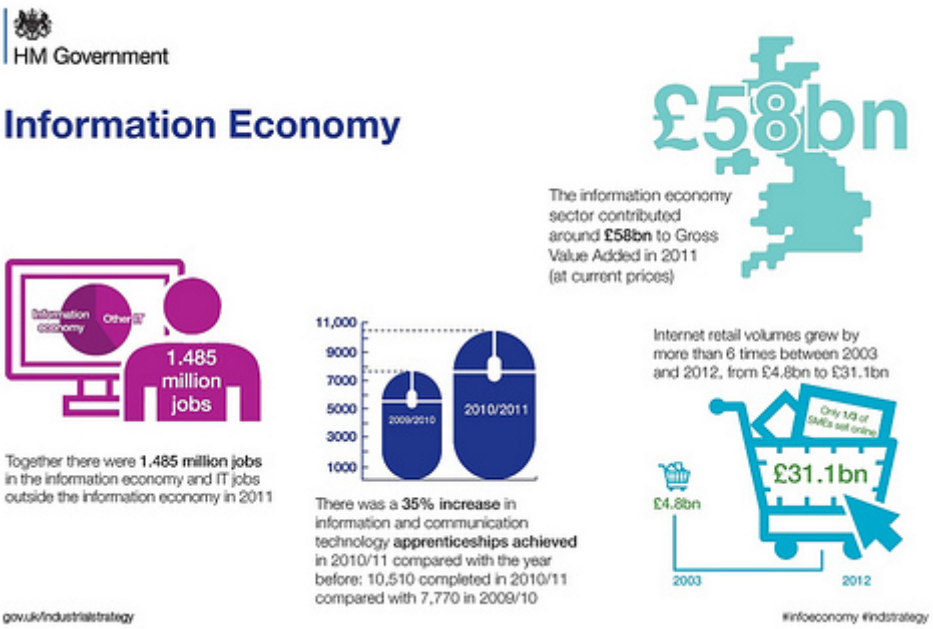
Information Economy



The UK is well placed to take advantage of the information economy, recognised in the World Economic Forum's 2012 Global Competitiveness rankings, which placed the UK seventh in the world in terms of technological readiness. This measured the preparedness of our economy to use ICT to boost competitiveness and citizens' wellbeing, and found the UK to have one of the most conducive environments for ICT development, with a sound political and regulatory environment and high levels of ICT adoption by citizens, businesses and Government.

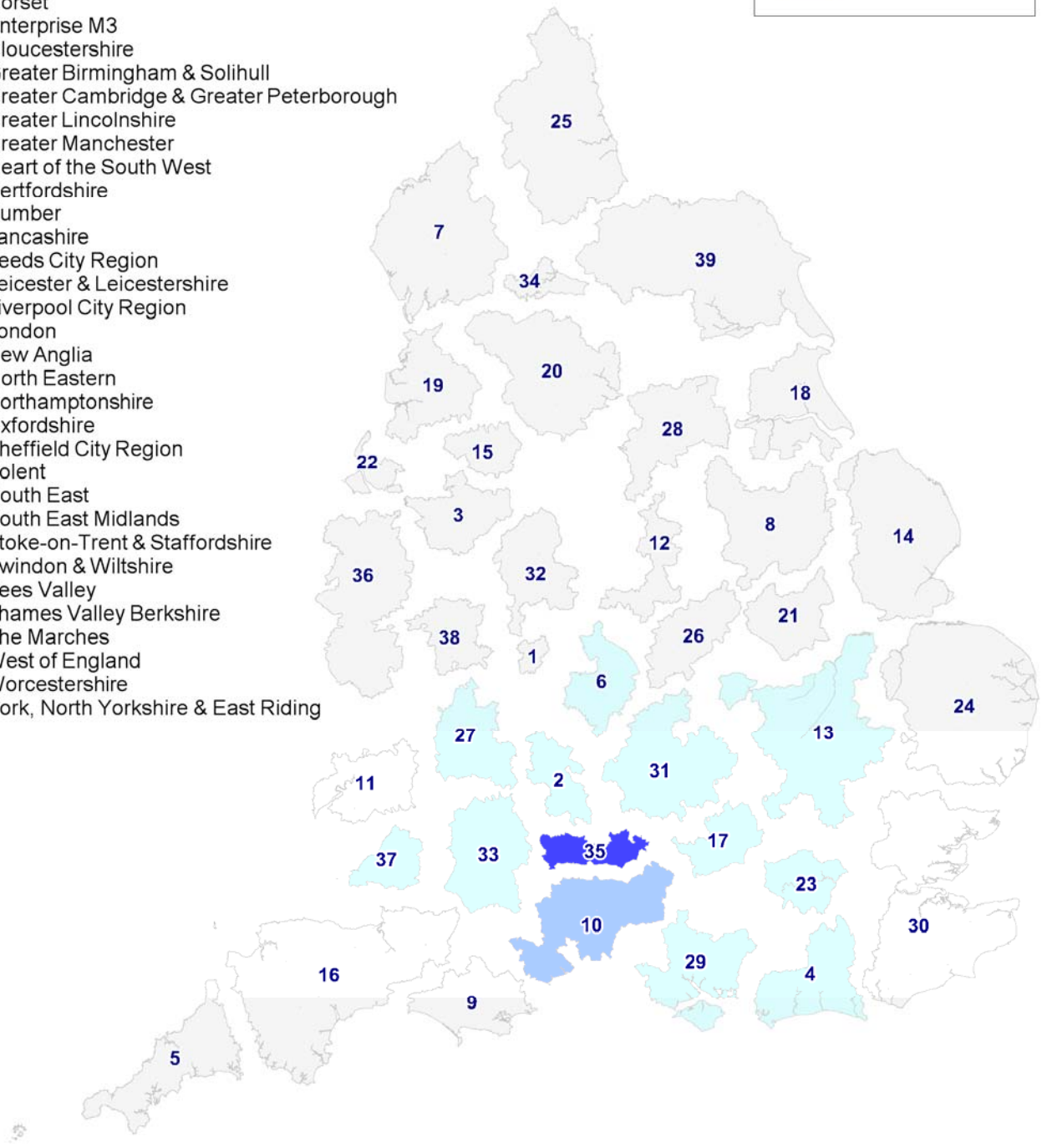
There are a number of large global companies in the information economy who are household names and have played a fundamental role in shaping the industry. However, the overwhelming majority – 95% – of the 120,000 enterprises in the UK employ fewer than ten people. Companies working in the information economy are highly innovative, in terms of both products and services, as would be expected for firms working in a fast-paced, globally competitive and highly mobile sector. They are also strong exporters, generating a significant contribution to UK GDP by reaching markets across the world.

The Connected Digital Economy Catapult started work in summer 2013 with funding of up to £50 million over five years. Working in collaboration with leading business, research and innovation partners, the Catapult will address gaps in the digital economy innovation landscape and help make it easier to take innovative products and services to market.

Department for Business, Innovation & Skills

Employment Location Quotient 2012 - Information Economy

1. Black Country
2. Buckinghamshire Thames Valley
3. Cheshire & Warrington
4. Coast to Capital
5. Cornwall & the Isles of Scilly
6. Coventry & Warwickshire
7. Cumbria
8. Derby, Derbyshire, Nottingham & Nottinghamshire
9. Dorset
10. Enterprise M3
11. Gloucestershire
12. Greater Birmingham & Solihull
13. Greater Cambridge & Greater Peterborough
14. Greater Lincolnshire
15. Greater Manchester
16. Heart of the South West
17. Hertfordshire
18. Humber
19. Lancashire
20. Leeds City Region
21. Leicester & Leicestershire
22. Liverpool City Region
23. London
24. New Anglia
25. North Eastern
26. Northamptonshire
27. Oxfordshire
28. Sheffield City Region
29. Solent
30. South East
31. South East Midlands
32. Stoke-on-Trent & Staffordshire
33. Swindon & Wiltshire
34. Tees Valley
35. Thames Valley Berkshire
36. The Marches
37. West of England
38. Worcestershire
39. York, North Yorkshire & East Riding



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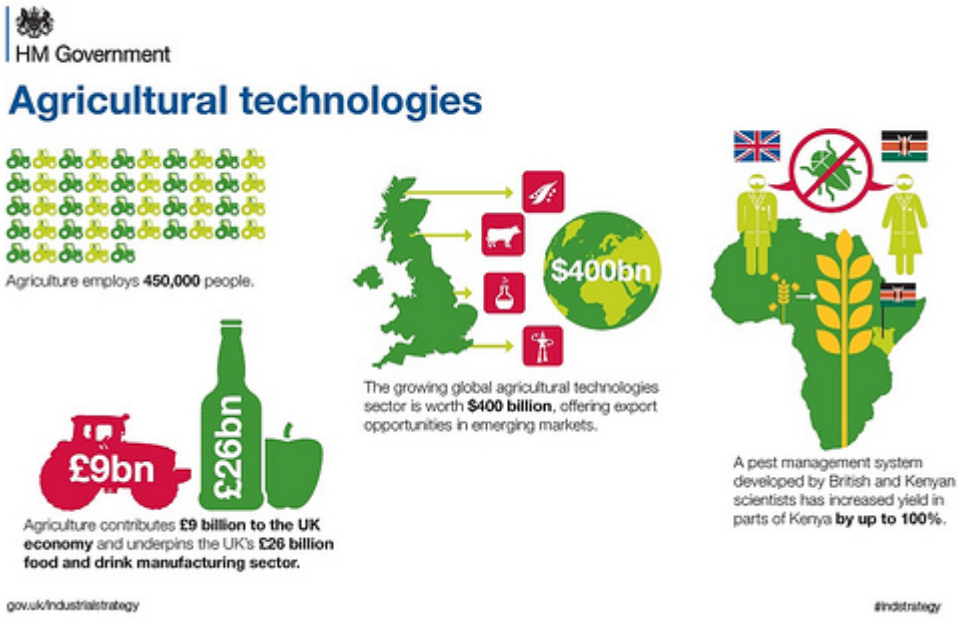
Agri-tech



[

The entire agri-food supply chain, from agriculture to final retailing and catering, is estimated to contribute £96 billion or 7% of GVA. The UK exported £18 billion of food, feed and drink in 2012 and is one of the top 12 food and drink exporters. There are 3.8 million people employed in the food supply chain including agriculture and fishing.

The UK has strengths in all three elements vital to support the growth of the sector: institutes and university departments at the forefront of areas of research vital to agriculture and related technologies; innovative and dynamic farmers, food manufacturers and retailers; and is well positioned to make an impact on global markets through exports of products, science and farming practices. There is huge potential to attract more global investment and EU funding into the UK and open up new global markets in agri-tech innovation

Agricultural science and technology is rapidly becoming one of the world's fastest growing and exciting markets. It is driven by global changes: a rising population, rapid development of emerging economies with western lifestyle aspirations and growing geopolitical instability around shortages of land, water and energy. A technology revolution is also taking place. Breakthroughs in nutrition, genetics, informatics, satellite imaging, remote sensing, meteorology, precision farming and low impact agriculture are driving major global investment in agri-tech.

However, the infrastructure to support industry in applying science and technology to help modern farming and food production has declined over the past 30 years. UK agriculture's productivity growth has declined relative to our major competitors. Aspects of the current regulatory regime and skills gaps can hinder the development of innovation and the use of new technologies. The UK Strategy for Agricultural Technologies sets out a range of actions including:

- improving the translation of research into practice through a £70 million Government investment in an Agri-Tech Catalyst
- increasing support to develop, adopt and exploit new technologies and processes through £90 million of Government funding for Centres for Agricultural Innovation
- helping exploit the potential of big data and informatics by establishing a Centre for Agricultural Informatics and Metrics of Sustainability
- building a stronger skills base through industry-led actions to attract and retain a workforce who are expert in developing and applying technologies from the laboratory to the farm
- increasing export and inward investment performance through targeted sector support

Department for Business, Innovation & Skills

Employment Location Quotient 2012 - Agritech

1. Black Country
2. Buckinghamshire Thames Valley
3. Cheshire & Warrington
4. Coast to Capital
5. Cornwall & the Isles of Scilly
6. Coventry & Warwickshire
7. Cumbria
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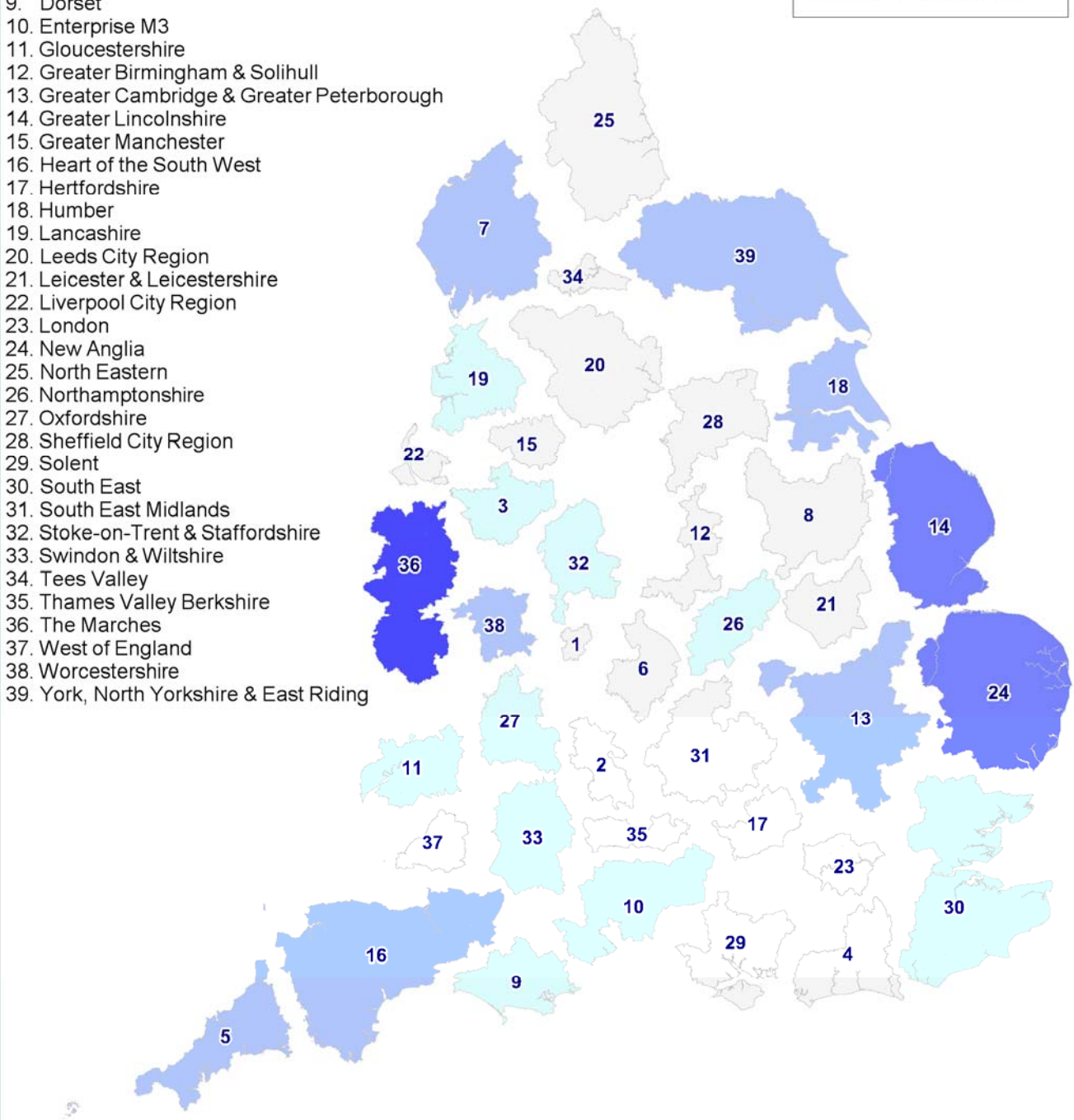

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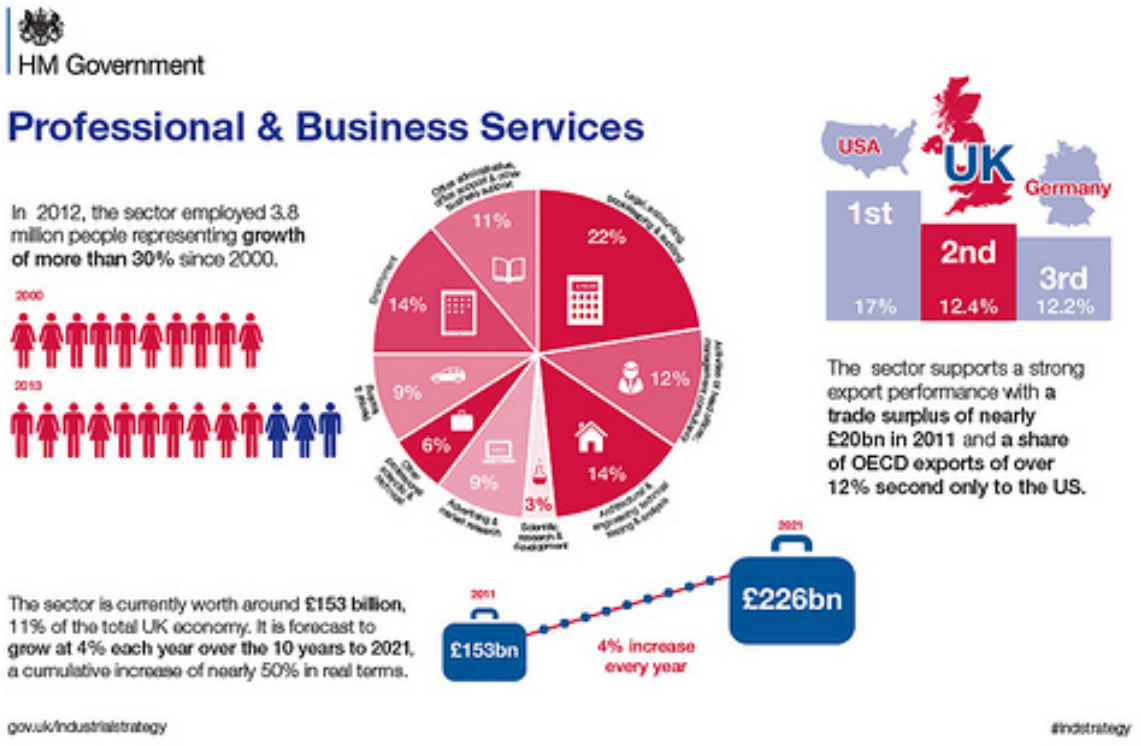
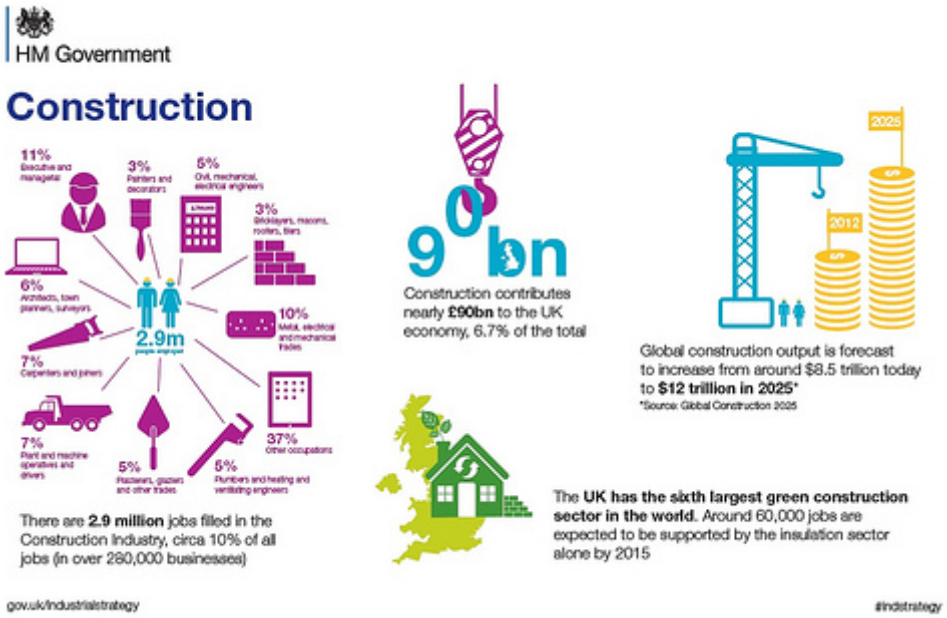
Professional Business Services



Professional and business services (PBS) in the UK are a global success story. The sector has grown by over 50% in real terms since 2000. It generates 11% of UK GVA and provides nearly 12% of UK employment. It also contributes strongly to economic growth and productivity: despite the economic downturn, PBS has seen growth of nearly 4% pa. The UK is host to top international firms providing the various highly skilled services that make up the sector, including in advertising, accountancy, architecture, legal services and management consultancy. The sector is highly competitive internationally, with a share of exports to developed countries second only to the US. Exports totalled £47 billion in 2011 and with a trade surplus of £19 billion.

The UK is host to many world leading PBS businesses, including six of the top 10 international networks of accountancy firms, the 'magic circle' of leading law firms, and the world's largest advertising company, WPP. The UK has strong international players across the rest of the sector, including architecture, recruitment services and audit. Small and medium size PBS enterprises also flourish; barriers to entry and concentration levels are generally low, with intellect, ideas and personal contacts more important than capital assets. Future opportunities are huge: the UK Commission for Employment and Skills expects 600,000 additional UK jobs to be created in the PBS sector in the next decade. The sector is a catalyst for change and innovation both the public and private sectors, transforming business processes and business models. The sector is very evident across England, especially in larger cities but, statistically, it is not highly concentrated in any specific LEP area. Those LEP areas with concentrations at or just above the average were largely located in 2008 the Southern half of England but LEP areas in the midlands had by 2012 employment concentrations higher than previously, at or just above the average.

Construction



The UK has a strong comparative advantage in construction. The sector contributes £90 billion to GVA (nearly 7% of the total). Over 280,000 businesses (mostly small firms) provide 3 million jobs. This is equivalent to about 10% of all employment. Construction has been badly hit by the economic downturn. Key markets have declined – output in the private housing market has fallen by 40% and private commercial building decreased by over 30% since 2007 – reflecting the general weakness in the economy over this period.

But it is also a sector with considerable growth opportunities, with the global construction market forecast to grow by over 70% by 2025. The UK is well placed with world-class expertise in architecture, design and engineering, and in sustainable construction solutions.

The Construction sector was not particularly concentrated in 2008 in any LEP, with the majority having employment concentrations at or just above the average. LEPs in the central belt of England were an exception with slightly below average concentrations. The pattern was similar in 2012, but with several LEPs in the North now having lower than average concentrations of construction employment.

Department for Business, Innovation & Skills

Employment Location Quotient 2012 - Construction

1. Black Country
2. Buckinghamshire Thames Valley
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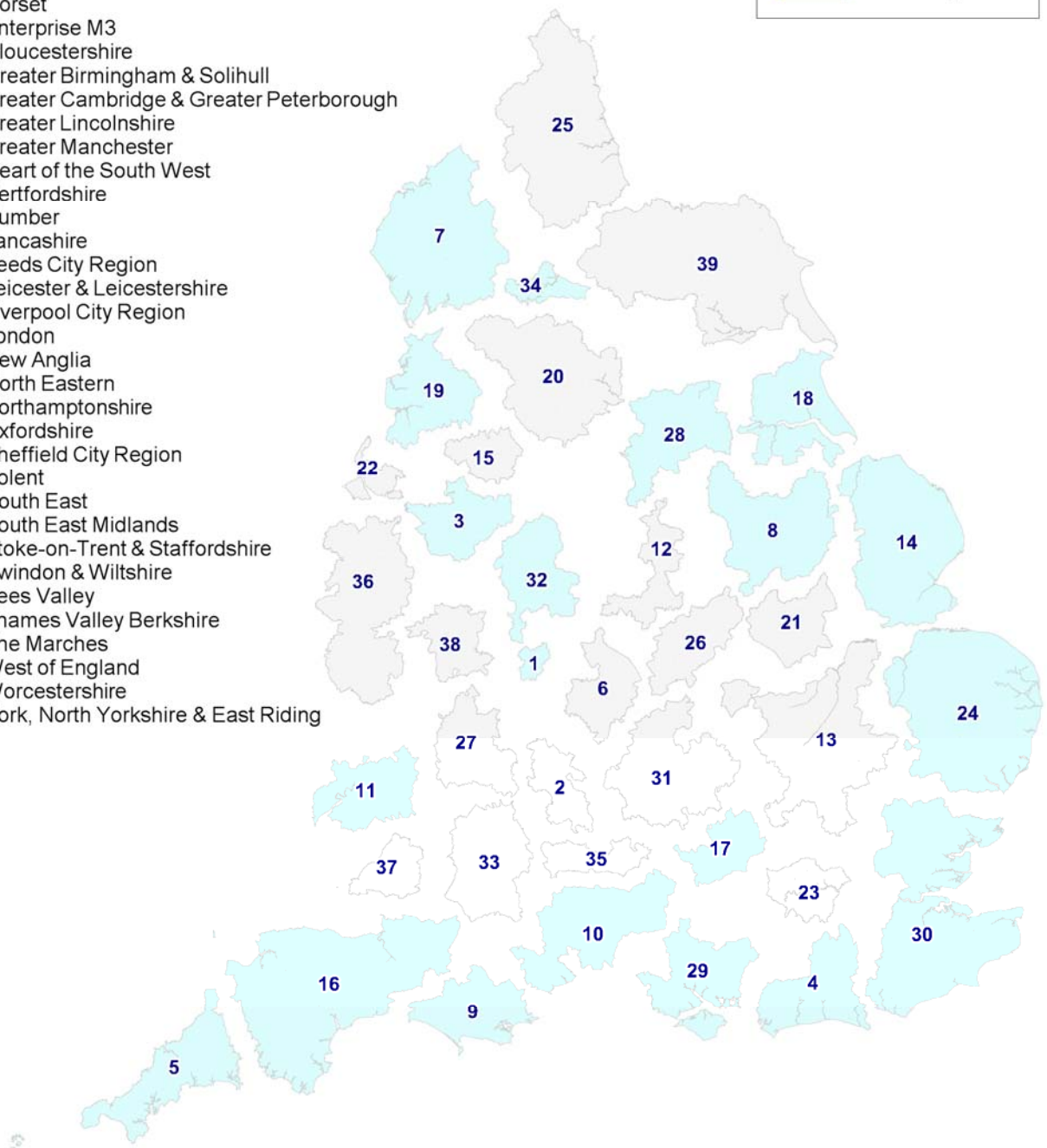

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The Eight Great Technologies[20]

Key Enabling Technologies (KETs) are an inherent part of Smart Specialisation. They are technologies which can be used across a number of sectors and have the potential to deliver transformational improvements in productivity and performance. They are also critical in addressing the 'grand societal challenges' across the European Union. However, not every place in the EU can be a leader in developing KETs or that a standard list of KETS can apply across the whole of the EU.

Government embraces the concept of KET and has invested an initial £600 million into the 'Eight Great Technologies'. This list of eight technologies drew on Technology and Innovation Futures report prepared by the Government Office for Science which was updated in 2012. The list was based also on the Emerging Technologies & Industries Strategy published by the Technology Strategy Board and the Strategic Framework for Capital Investment published in November 2012 by Research Councils UK. The Eight Great Technologies are those in which the UK has a genuine comparative advantage and potential for commercial exploitation across a global market.

The Eight Great Technologies are:

- Big data and energy efficient computing
- Robotics and autonomous systems
- Satellites and commercial applications of space
- Life Sciences, genomics and synthetic biology
- Regenerative medicine
- Agri-science
- Advanced materials and nano-technology
- Energy technologies (including, energy storage, reduced cost renewables, energy efficiency, bioenergy, transport, next generation nuclear and carbon capture and storage)

[20] https://www.gov.uk/government/publications/eight-great-technologies-infographics

HM Government

Eight Great Technologies

Big Data

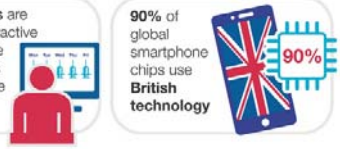
Transforming the data revolution into new products and services

UK research strength

UK researchers are creating an interactive web programme to help diabetes patients at home

UK industrial capability

90% of global smartphone chips use **British technology**



Multiple applications

The UK MET office creates **3,000 tailored forecasts** a day using a supercomputer

90% of the world's data has been created in the **past two years**

UK growth opportunities

The global market for business data analysis products grew by **14% in 2011** and is expected to continue to **£31bn by 2016**

Accelerating the commercialisation of technologies
www.gov.uk/bis/industrial-strategy

#8Great

HM Government

Eight Great Technologies

Satellites

Harnessing powerful location and imaging data to transform industries

UK research strength

Satellite and space technologies have enabled UK researchers to create a device for detecting TB in remote regions

UK industrial capability

40% of the world's small satellites are produced in **the UK**

Multiple applications

A UK company provides satellite-based solutions to allow coffee farmers to enhance their crop

Satellites enable today's television, internet, navigation, weather and shipping forecasts

UK growth opportunities

£8.2bn added to the UK economy by space industries: **16% growth since 2009**

Accelerating the commercialisation of technologies
www.gov.uk/bis/industrial-strategy

#8Great

HM Government

Eight Great Technologies

Robotics and autonomous systems

Improving manufacturing, medicine and transport

UK research strength

British autonomous submarines were the **first to explore** under a polar ice shelf. The latest is designed to have a range of **6,000m**

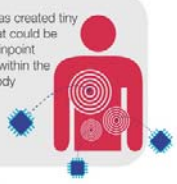
UK industrial capability

UK scientists are developing robotic arms to work in hazardous places

Multiple applications

UK researchers have developed a **low-cost** radar technology that **enables cars to drive themselves**

The UK has created tiny robots that could be used to pinpoint diseases within the human body



UK growth opportunities

£13 billion global market for robotics and autonomous systems by **2025**

Accelerating the commercialisation of technologies
www.gov.uk/bis/industrial-strategy

#8Great

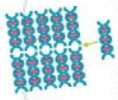
HM Government

Eight Great Technologies

Synthetic Biology

Harnessing the power of biology to fuel and heal us

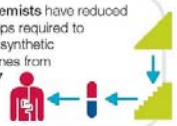
UK research strength



UK researchers have developed a new method for copying DNA which is up to **10,000 times faster** than before

UK industrial capability

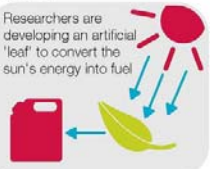
UK chemists have reduced the steps required to create synthetic hormones from **20 to 7**



Multiple applications

A British company has created a DNA-based solution to control insects that spread disease and damage crops

Researchers are developing an artificial 'leaf' to convert the sun's energy into fuel



UK growth opportunities

The synthetic biology global market is expected to reach **£62bn by 2020**

Accelerating the commercialisation of technologies
www.gov.uk/bis/industrial-strategy

#8Great

HM Government

Eight Great Technolog

Advanced Materials

Engineering superior, stronger, lighter materials

UK research strength

UK researchers have developed **LED bulbs** which could turn lights into **wireless transmitters**

UK industrial capability

The **UK** produces a revolutionary bone replacement material **used by surgeons worldwide**

Multiple applications

New materials are being created to **absorb greenhouse gases** such as **carbon dioxide**

CO_2

British-discovered graphene is the **strongest, thinnest material** known

UK growth opportunities

UK material-related industries have a yearly turnover of **£197bn**

£197bn

Accelerating the commercialisation of technologies

www.gov.uk/bis/industrial-strategy

#8Grea

HM Government

Eight Great Technolog

Energy Storage

Developing new ways of storing energy to power our devices and homes

UK research strength

UK researchers have developed a new power pack for soldiers that is **50% lighter**

UK industrial capability

The **UK** produced a **zero emission** London taxi for the 2012 Olympic Games

0% CO_2

TAXI

Multiple applications

UK researchers are developing next generation batteries which could reduce our electricity consumption **by one fifth**

1/5

10%

With up to **10% of UK electricity** coming from wind, energy storage will keep our lights on when it's not windy

UK growth opportunities

Innovation in energy storage could create **£12bn** of new business revenue in the UK

£12bn

Accelerating the commercialisation of technologies

www.gov.uk/bis/industrial-strategy

#8Grea

HM Government

Eight Great Technologies

Regenerative Medicine

Using new medical advances to repair damaged tissues

UK research strength

The **UK Stem Cell Bank** was the first facility in the world to store and distribute stem cells

1st

UK industrial capability

A **UK company** is testing the injection of stem cells into brains to **reverse damage** caused by strokes

Multiple applications

UK scientists have **reversed paralysis** in dogs by **transplanting stem cells** from the nose into the spinal cord

By adding stem cells to a voice box, **UK researchers** have developed a transplant that won't be rejected by the body

UK growth opportunities

The regenerative medicine market is expected to create **15,000 jobs by 2020**

2020

15,000 jobs

Accelerating the commercialisation of technologies

www.gov.uk/bis/industrial-strategy

#8Great

HM Government

Eight Great Technologies

Agri-Science

Finding greater, greener ways to feed the world

UK research strength

UK research has reduced the amount of water required to grow a strawberry by **80%**

UK industrial capability

Food production is the **largest single manufacturing** sector in the **UK**

1st

Multiple applications

80% of breeding chickens come from **UK-developed genetic stock**

A **UK company** uses LEDs to grow crops in multi-storey rows which can triple yield

UK growth opportunities

The UN forecasts that by **2050** global food production with need to increase by **70%**

Accelerating the commercialisation of technologies

www.gov.uk/bis/industrial-strategy

#8Great

It is possible to estimate the relative contribution of each of the Eight Great Technologies to the Sector Strategies.

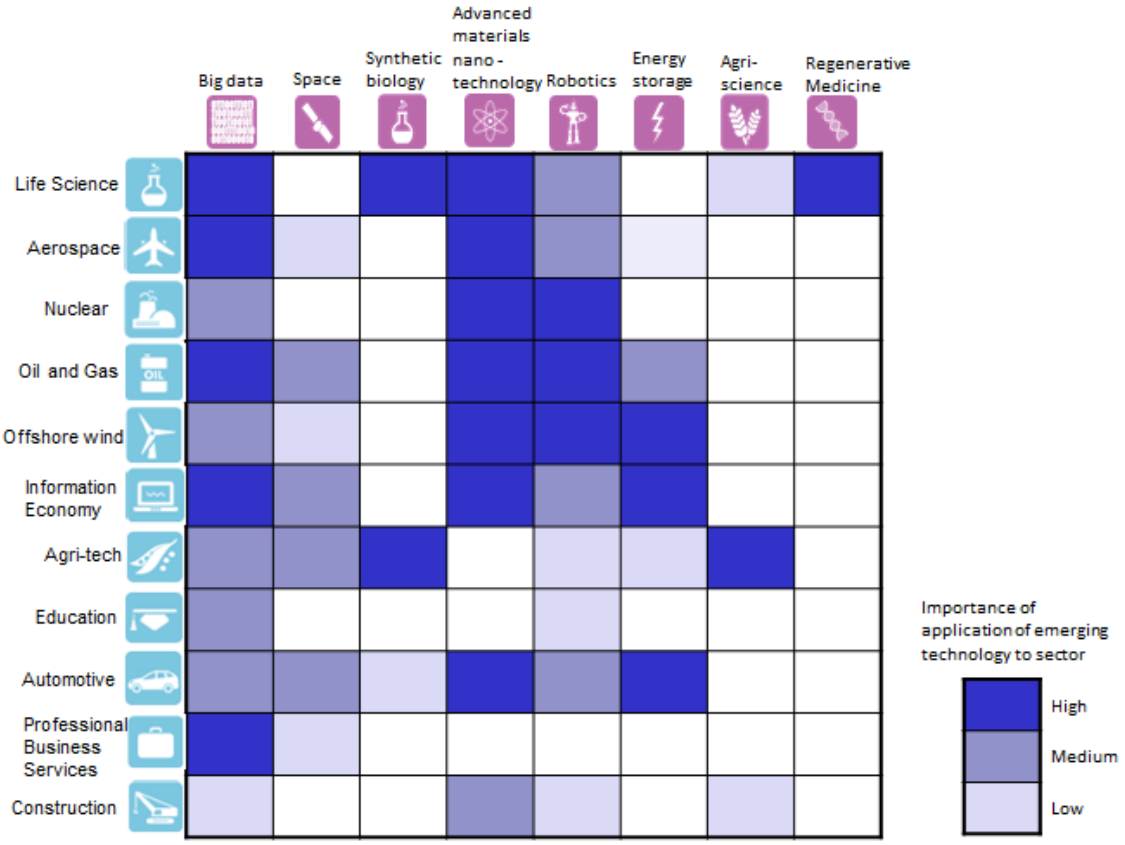


Figure 14

Advisory Hub for Smart Specialisation

In his Preliminary Findings of his Review of Universities and Growth, Sir Andrew Witty reported concerns about potential sub-optimal duplication among LEP plans and noted the need for a mechanism to achieve co-ordination and coherence. This was a point made also by international experts and peers during the Peer Review of an earlier draft of this Strategy organised by the JRC's Smart Specialisation Platform.

Sir Andrew urged the Government to ensure LEPs' plans avoid duplication and missed opportunities to collaborate. Sub-optimal outcomes could be avoided if there were a recognised source of authoritative advice to inform such decisions. He envisaged a body to advise Ministers and the Growth Programme Board on the strength of LEP proposals, and be a source of advice to LEPs in seeking to devise strong plans. This body should also be a means of meeting the longer term need to support LEPs, universities and others setting collaborative priorities and making investment decisions on R&D and Innovation with an understanding of the national context, and how to promote coherence in these decisions. It would also be well placed to recognise those LEPs which are proving most effective, and to identify the associated good practice. It should capture these insights and include them in its advice to the Growth Board, Ministers, and LEPs, so that each can take the opportunities available to them to bring all LEPs up to the level of the best. It would

need to include senior officials drawn from the Research Councils, industry and academia and the Technology Strategy Board.

In his report 'Encouraging a British Invention', Andrew Witty therefore recommended that:

"The Government should ensure that all the funds available to LEPs to invest in Innovation and R&D are spent on these areas. It should establish an authoritative advisory capability to advise it and LEPs and other relevant decision-takers on how strongly LEP proposals are based in a sound assessment of comparative advantage, and to identify and communicate the best practice of the most effective of LEPs so that the Government and LEPs can work to bring all LEPs up to the level of the best".

Government response to the Witty Review

The Government accepted the Witty recommendation and has set up an Advisory Hub for Smart Specialisation. The Advisory Hub will gather evidence and help to improve the use of it; share and disseminate best practice, improve connections between different partners, advise on compliance with ESIF procedures and, through this, support LEPs in delivering stronger collaborative proposals

The advisory capability of the Hub will be built on existing networks and initiatives with complementary functions to add value to the current landscape. Organisations to play a role will include National Centre for Universities and Business (NCUB), the Technology Strategy Board, the LEP Network, the What Works Centre for Local Economic Growth, the Horizon 2020 National Contact Points and the Enterprise Europe Networks. The Hub will address challenges to unlock innovation locally, such as lack of capacity or resources; not knowing whom to contact, with potential collaborators being in other places; missed opportunities to invest by universities or other research centres, complexities of funding streams; ensuring funding priorities are more relevant to the needs and priorities of business; and capacity building to increase demand for innovation.

The European Regulations on ESIF require Member States to put in place mechanisms to encourage better coordination between different European Funds (e.g. Horizon 2020). The creation of the Advisory Hub will help this objective because it will seek to establish institutional arrangements to build coordination and synergies.

The Government has commissioned NCUB to take the lead in working with both national and local partners to make detailed proposals for the functions and form of the Advisory Hub. NCUB is an independent, not for profit business focusing on strengthening the strategic partnership between universities and business with a view to driving economic growth. It achieves this through seeking effective collaboration through facilitation, integration, and communication that does not duplicate or substitute successful work done by others. NCUB has the active and financial support of major firms, academia, and Government Departments. The set up phase of the Advisory Hub is expected to be complete by November 2014 and pilot operations will then commence. It is a possible that an application may be made to add value to its work with the use of Technical Assistance.

Local Enterprise Partnerships (LEPs) and Smart Specialisation

LEPs are in the driving seat for growth at the local level. Each LEP is working with partners across its area to prepare a Strategic Economic Plan. This Plan will set the strategic vision for each LEP area, bringing the LEP and its partners together around a common and comprehensive agenda for growth. Each of these Strategic Economic Plans will be different as they will reflect the drivers and barriers to growth specific to each Local Enterprise Partnership area, but each will also have regard to national policy on growth, including, for example, housing, transport, skills, flooding, climate change, rural economies and the Innovation & Research Strategy for Growth and the Industrial Strategy. Research, development and innovation will therefore be integral in the individual LEP's own way to each Strategic Economic Plan.

The Strategic Economic Plan will also form the basis upon which the LEP and its partners will decide how to make best use of a range of all available resources and levers – not just its allocation from the Single Local Growth Fund. Its Strategic Economic Plan will also guide investments and maximise synergies with a range of other funding sources, including for example, City Deals, Regional Growth Fund, Enterprise Zones, the Growing Places Fund and the EU Structural & Investment Funds.

Alongside the wider Local Growth Fund, each LEP has received a notional allocation of ESIF for the period 2014-2020[21]. LEPs are responsible for: preparing a robust investment strategy for spending their allocation; identifying activities and projects to deliver that strategy, using a mixture of commissioning, bidding and co-financing as best meets local need; working with partners to find match funding for those projects; supporting those projects to deliver their targets; making sure their allocations are spent on time; and monitoring how well they are delivering against their strategies and the programme priorities. All ESIF will be deployed within this framework but guidance was issued by Government to ensure that plans for investments in innovation are informed by the concept of Smart Specialisation.

The Government guidance strongly encouraged LEPs and their partners to embed Smart Specialisation in their Investment Strategies and to focus on specific actions in support of innovation. It also asked LEPs to consider the development of a specific strategy of Smart Specialisation and particularly encouraged the use the Joint Research Centre's (JRC) RIS3 guide . A number of LEPs have chosen this route, including Cornwall & Isles of Scilly, Liverpool City Region, Greater Manchester, North East, and Tees Valley LEP. Other LEPs were required to use a similar planned and staged approach to the development of their Investment Strategies in a manner proportionate to the scale of investment.

LEPs were requested to demonstrate collaborative leadership and cultures of innovation at the local level by strengthening the local innovation 'ecosystem(s)' and building local capabilities to enable this, supporting local supply chains to invest and collaborate, catalysing and leveraging the differing opportunities of social innovation, and by positioning places as credible centres of smart specialisation. Although the membership of individual partnerships are dependent upon local circumstances, they often contain local businesses that are already (or are seeking to become) active in

[21] These notional allocations are subject to review

innovation, especially SMEs and including those based on science parks and innovation campuses; local universities and other research centres; Catapult Centres where they are relevant to local plans for innovation wherever they exist, locally or elsewhere in England; Academic Health Science Networks; and strong leadership and support from other public bodies.

LEPs were asked to work in ways similar to that used by businesses to identify and examine thoroughly future opportunities for investment, and to ensure that these plans are tested systematically against a fuller understanding of how technologies and markets are evolving across the globe[22]. This process is intended to identify what a place or functional economy does best in terms of innovation because 'entrepreneurial actors' are best equipped to know what they are good at making and selling. They also have the best knowledge of how markets are developing, and how patterns of trade, finance and the transfer of knowledge and new ideas are increasingly dense, complex and interconnected. Businesses therefore have a leading role to play in this process, but it also requires the valuable knowledge held elsewhere, such as in universities, other centres of research, public leaders and institutions with a democratic mandate, and other groups representing wider civil society.

LEPs presented the true and relative potential of their local area within a SWOT or similar analysis. They had to ensure that SWOT analysis was informed heavily by the views of businesses in the local area, especially those who have (or who are seeking to build) connections with similar or related sectors in other parts of the UK and beyond. Many LEPs used online surveys, focus groups and other forms of consultation to prepare their analysis. Local universities often supplied specialist knowledge to help calibrate the analysis within the local SWOT.

LEPs were asked to use this SWOT analysis to concentrate resources on a limited, realistic and relevant set of research and innovation priorities, identifying opportunities to contribute to, and benefit from national policies for innovation, especially the Industrial Sector Strategies. LEPs were able to identify more specific priorities e.g. sub sectors or niche industries provided these proposals were fully evidenced and justified.

[22] The academic literature on Smart Specialisation calls this the 'entrepreneurial process of discovery'.

Appendix One

Note. This financial table includes only relevant elements of each delivery partner. Data for financial year 15/16 is indicative at this stage.

		FY 13/14	FY 14/15	FY 15/16
Technology Strategy Board		To be confirmed		
Higher Education Funding Council for England[23]				
	Recurrent grant for research	1573	1573	1573
	Higher Education Innovation Fund[24]	113	113	113
	Research Capital England	67	55	117
	HEI Research Capital England	64	72	86
	Research Partnership Innovation Fund (UK)	120	160	100
Science & Technologies Facilities Council[25]				

[23] http://www.hefce.ac.uk/news/newsarchive/2014/news85409.html
[24] The funding for HEIF is the research contribution to the HEIF budget. HEFCE can decide to add additional funding from teaching budgets.
[25] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32478/10-1356-allocation-of-science-and-research-funding-2011-2015.pdf

	Core programme (revenue)(UK)	172	172.2	165.1[26]
	Core programme (capital) (UK)	14.2	14.1	53.3
	International revenue subscriptions (revenue) (UK)	121.7	123	127.5
	International subscriptions (capital) (UK)	28.5	27.7	27.3
	Facilities (revenue) (UK)	81.4	89.5	107.4
	Large facilities (capital) (UK)	47.7	128	48.5
European Structural & Investment Funds[27]				
	ERDF	18.9	82	108.7
	EAFRD[28]	0[29]	0.3	0.47

[26] https://www.gov.uk/governmentGovernment/publications/science-and-research-funding-2015-to-2016
[27] Figures are for calendar years 2014, 2015 and 2016
[28] Figures are incomplete as at 12/2/14
[29] Due to expected later start of the EAFRD programme

Appendix Two: Location Quotients

A Location Quotient (LQ) is a way of measuring how concentrated a particular industry, occupation, or demographic group is in an area compared to the nation as a whole. It can reveal what makes a particular area “unique” in comparison to the national average. The maps contained in the report of Sir Andrew Witty and included in this draft strategy show only those LEPs which have an LQ greater than one – that is, those LEPs with a higher than the national average proportion of employment in the relevant sector.

The LQ equation is

$$LQ = \frac{e_i / e}{E_i / E}$$

Where:
e_i is sector employment in a LEP area
e is total employment in a LEP area
E_i is national sector employment
E is national total employment

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Smart Specialisation in England has also benefitted from consistent expert input and feedback from a wide range of local and national partners. Three separate workshops were held in Birmingham. Senior representatives of nine LEPs nominated by the LEP Network provided consistent and in-depth input as an informal Sounding Board, working together with Government to shape proposals at all stages of design. Those involved in the development of the Strategy also included Research Councils UK (RC UK), Universities UK, NHS Confederation, Nesta, Design Council, the National Council for Voluntary Organisations, Technology Strategy Board (TSB), and Higher Education Funding Council for England (HEFCE). The Government organised a UK-wide workshop on the synergies between ESIF, Horizon2020 and KETs and launched a social media group to maintain the momentum between the different stakeholders; this will be taken on by the Advisory Hub.

An earlier draft of this Strategy was presented for Peer Review at an event for Member organised by the JRC Smart Specialisation Platform States in Riga, in February 2014. Good insight and specific recommendations were provided by international experts and specialist representatives from across 24 different Member States. The report of the Peer Review is available and its proposals have been embedded where appropriate into this revised draft.

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Ends

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