

Taunton Deane urged to take up Grand Challenges.

Our goal to create a Centre for Research and Innovation for the South West, based in Taunton Deane, is aligned with the governments modern Industrial Strategy that sets out Grand Challenges to the UK to be at the forefront of the industries of the future, ensuring that the UK takes advantage of major global changes, improving people's lives and the country's productivity, this ties in with our own Prosperity agenda at Taunton Deane.

Taunton Deane is very strategically placed, with universities nearby such as Bristol, Bath, Exeter, Plymouth and the Combined Universities in Cornwall,* also with strategic linkages to industries such as agriculture and fisheries which are important in terms of food production thus meeting the technology needs of the agricultural sector in the future is paramount. We want to enable new collaborations across different growth sectors as stated in our report and reshape policies to be in line with our ambitions.

We know that we have low productivity in the South West, but gradually we can in part improve this situation by attracting highly educated people to the region. The South West is the number one area that people come to retire because it is a great place to live, our collective aim is to also make this area and particularly Taunton Deane a leading region for jobs, technical apprenticeships and graduate research programmes.

Jo Johnson, the science minister, has announced the fund of £100m to attract overseas talent as part of the biggest shake-up of public research funding since 1965, to be named after the father of nuclear physics and immigrant to the UK, Ernest Rutherford.

The Rutherford fund is part of wider reforms, which will see an umbrella body, the UK Research and Innovation Agency (UKRI), take on responsibility for strategic oversight of all public research spending.

The announcement in November 2016 of an additional £4.7 billion in research funding up to 2020 will see UKRI controlling a budget of £8 billion per annum by the end of the decade.

Much of the rationale for UKRI is to create a body that can foster **multidisciplinary research**.

The Five Pillars to our Innovation Centre (based on year on year growth) are:-

1.) Environmental impact (EI) effect of plastics into our fragile environment, challenges and opportunities.

Mass production of plastics, which started in 1950, has accelerated so rapidly that it has created over 8.3 billion metric tons of plastics, equivalent to 922 million 40ft Lorries full of plastics— only 10% of it is recycled; the rest end up in landfills or scattered around the planet much of it eventually ending up in the oceans. The task even to slow this build-up of non-biodegradable material is monumental and we cannot and must not allow the situation to continue.

We were slow to understand the implications of plastic ending up in our fragile oceans and environment and entering the food chain. Now we have a situation where we are perforce coming from behind to catch up.

Gaining control of plastic waste is now such a large task that it calls for a comprehensive, global approach, which involves biodegradable alternatives, rethinking plastic chemistry; product design, recycling strategies, consumer use and complete change of habits.

This is our opportunity as leaders of our communities to be at the forefront of this. We are quite fortunate that we have some of the most talented researchers in the world at Exeter University on our doorsteps, who have lent their expertise free of charge to our authority. It would be wonderful if Taunton Deane was to be recognised as Leading nationally on this.

Opportunities by 2030

Plastics is one of a number of environmental issues facing the world's seas, along with rising sea levels and warming oceans, and metal and chemical pollution, the Foresight Future of the Sea Report for the Government said.

But it predicted there were also opportunities for the UK to cash in the global "ocean economy" - which is set to double to £2 trillion by 2030 - in areas where the country is a world leader, such as offshore wind.

2.) Renewable Energy (RE)

Our drive to increase the proportion of energy we obtain from renewable sources will not only increase the security of energy supplies in the UK, it will also provide opportunities for investment in new industries and new technologies. The UK Government will help business develop in this area to put the UK at the forefront of new renewable technologies and skills.

The UK Government believes that climate change is one of the gravest threats we face, and that urgent action at home and abroad is required. We need to use a wide range of levers to decarbonise the economy. The development of renewable energy sources, alongside nuclear power and the development of carbon capture and storage, will also enable the UK to play its full part in international efforts to reduce the production of harmful greenhouse gases.

Meeting our 2020 target

The history of energy production in the UK has been based around our natural resources of fossil fuels. This means that we have not been as active in our exploitation of our renewable resources – this must change. Compared to many other Member States, the UK is starting from a very low level of renewable energy consumption and this means that our challenge to meet the 2020 targets is even greater.

The 2009 Renewable Energy Directive sets a target for the UK to achieve 15% of its energy consumption from renewable sources by 2020. This compares to only 1.5% in 2005

UK targets by 2020:

- 15% share of energy generated from renewable sources in gross final energy consumption;
- 12% of heat consumption met by renewable sources;
- 31% of electricity demand met by electricity generated from renewable energy sources;
- 10% of energy demand met by renewable energy sources.

The UK renewables policy framework relies on three main components:

1. Financial support for renewables;
2. Removing barriers (administrative, policy uncertainty, etc.);
3. Supporting and developing emerging technologies;

3.) Education (E)

The importance of knowledge and learning has been recognized since the beginning of time. Plato wrote: “If a man neglects education, he walks lame to the end of his life.”

The current skills system is not delivering the skills that UK businesses or the economy needs. Skills shortages consistently top the list of concerns of business leaders in our annual Global CEO survey, while the lack of powers over skills is a concern for local leaders.

Without addressing this issue, the skills gap will only grow wider. If the UK is to improve productivity, and build an economy fit for growth, focusing on delivering the right skills for the economy, the improvement of people and the growth of businesses will be essential.

A window of opportunity

The vote to leave the EU has drawn renewed attention on the need to **reshape the UK economy** and create an agile, highly skilled workforce which makes the UK a place where companies want to invest, where products drive trade and where people have access to opportunity.

With local institutions such as city regions, LEPs and Combined Authorities strengthening, there is a **window of opportunity to create a new locally-driven skills model** that can deliver on this vision. This new devolved approach requires a radical reorganisation of the current system.

Central government, local government and business, as well as skills providers, will all have their role to play in building this new inclusive skills system which helps people reach their full potential, businesses grow and regions prosper.

Potential Market

According to PriceWaterhouseCoopers;

- £163bn increase in GDP over the next decade by improving vocational skills
- £45bn Increase in GDP if UK NEET rate for 20-24 year olds matched German levels

- £105bn increase in GDP if the UK employment rate for workers aged 55+ matched Swedish levels
- £9bn lost revenue in taxation as a result of people not fulfilling their potential in the labour market

4.) Artificial Intelligence (AI)

artificial intelligence

noun

“The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.”

Artificial Intelligence promises to transform more than just the way we do business, it will touch every corner of society. From using image recognition such the UK Hydrographic Office here in Taunton, identifying objects in the oceans around the world, to enhance public security and giving automated services with a human touch and natural language processing. The future will be the development of Block Chain – Advanced Robotics and Internet Technology according to Prof. Koorosh Khodabandehloo, he said, *“The technology was moving rapidly and in terms of block chain it was considered early days, but that it would mature”*.

Secretary of State for Business, Energy and Industrial Strategy Greg Clark has said:

“Artificial intelligence provides significant opportunities for future economic growth, which is why we made it a crucial part of our modern Industrial Strategy and worked with industry on a sector deal that outlines how we will ensure the UK is best placed to realise this potential”.

The Government and industry announced on the 26th June 2018, that they are going to work together to put the UK at the forefront of AI technologies. This gives Taunton Deane an ideal opportunity to make itself a centre of excellence for research and innovation in the South West. The Government's modern Industrial Strategy sets out a long-term plan to boost the productivity and earning power of people throughout the UK. It sets out how building an economy and a Britain fit for the future will help businesses create better, higher-paying jobs in every part of the UK with investments in skills, industries and infrastructure.

Forefront of the global AI industry.

The announcement forms part of the Governments modern Industrial Strategy to use the Country's knowledge power in research and innovation to ensure the benefits of technology are felt by everyone. We must grab our

share for the South West, and base it here at Taunton Deane. It also builds upon the £1 billion joint Government and private sector announced earlier this year to put the nation at the forefront of the global AI industry.

UK Economy by 2035.

Research suggests artificial intelligence could add £654 billion to the UK economy by 2035, and that the country is already recognised as the number one place in the developed world in readiness for AI.

The Office for AI.

The Office for AI is based in the UK Government and is responsible for overseeing implementation of the UK's AI strategy. As well as advising government on how to improve its use of the technology, the AI Council will promote industry-to-industry cooperation, boost the understanding of AI in the business world, and identify barriers to growth and innovation.

5.) Medical Science (MS)

Medical Science

noun

“The branch of science concerned with the study of the diagnosis, treatment, and prevention of disease.

Medical Science covers many subjects that try to explain how the human body works. Starting with basic biology it is generally divided into areas of specialisation such as anatomy, physiology and pathology with some biochemistry, microbiology, molecular biology and genetics.

The world of modern medicine is moving very fast, but if expert predictions about what to expect in 2018 prove true, they might move at a quicker speed than anyone anticipated.

It could also see technology companies start to become as important a player in healthcare world as pharmaceutical companies. Breakthroughs in everything from patient monitoring to sleep apnoea are coming from Silicon Valley and could dramatically shift the current paradigm.

Technology companies will become mayor players in healthcare.

It could also see technology companies start to become as important a player in healthcare world as pharmaceutical companies. Breakthroughs in everything from patient monitoring to sleep apnoea are coming from Silicon Valley and could dramatically shift the current paradigm.

The Prime Minister's Vision.

The Prime Minister also recently announced plans for how we can transform the prevention, early diagnosis and treatment of diseases like cancer, diabetes, heart disease and dementia by 2030.

The Government has since opened a competition, with £50 million of funding available, for a new set of radiology and pathology images, to help develop important new AI algorithms to fight disease. This is an important step to digitise all pathology networks by 2025, which lays the groundwork for even greater adoption of AI-based technology.

Size of the market

In 2016, the Life Science sector had 5,142 companies, generating approximately £63.5 billion in turnover with 233,000 jobs. The database shows that the sector is also growing, with 6.2 per cent revenue growth and 2.5 per cent employment growth from 2015 to 2016.

The Life Sciences database shows that in 2015, the Life Sciences sector had 5,142 companies generating approx. £63.5 billion turnover. This covers both core Life Sciences companies and the service and supply chain. This breaks down into:

- Biopharmaceutical sector and service and supply chain 1,857 companies, generating £41.9 billion turnover; employing 113,000 workers;
- The biopharmaceutical sector is largely dominated by large, global companies. There is a diverse size range of core biopharmaceutical companies with a lot of micro companies: 43 per cent have less than 5 employees and 10 per cent have over 250 people;
- Medical technology sector and service and supply chain 3,463 companies, generating £21 billion turnover; employing 120,000 workers; and
- 98 per cent of UK Med Tech firms are SME's, 42 per cent are micro-companies with less than 5 employees and only 2 per cent have over 250 employees.

Our vision in TD

We have secured the support of Dr Stuart Monk, Director of Innovation, South West Academic Health Science Network (SWAHSN), he works across the commercial sector and the third sector identifying proven products and services expanding into the South West peninsula's health care and wellbeing systems through NHS and local authority.

Dr Monk states,

“Somerset is a great place to live and work, healthcare entrepreneurs and innovators would benefit enormously from considering Taunton as a possible site for their ventures.” He goes on to say that SWAHSN is supportive of the Task and Finish Group’s vision to make Taunton a world-class site for healthcare innovation.

Cllrs Habib Farbahi and Andy Sully (August 2018)

End.