

How the Innovation Region will help deliver Economic Growth, Levelling Up and Net Zero in the East of England

Briefing paper for high-level invitation only roundtable

14:00 to 15:30, Monday October 30th

The joint APPG and EELGA report [Levelling Up the East of England 2023-2030: The East of England's Progress Towards Achieving the Government's Twelve Levelling Up Missions](#) found that the East of England has several clusters of R&D and innovation excellence. It argued that harnessing existing successful economic clusters is key to stimulating private sector investment whose impact is then spread across the country through enhanced collaboration and partnership.

This meeting is therefore designed to facilitate a discussion about how the East of England's key partners, and the Government, can work together to further enhance the region's innovation offer to UK plc and how that offer can be maximised – helping to deliver economic growth as well as the levelling up and net zero agendas.

THE EAST OF ENGLAND'S INNOVATION STRENGTHS

The East of England is a world leader of innovation, especially within the fields of green energy, digital technology, life sciences, agri-tech and advanced manufacturing. Total R&D expenditure in the region is £6.9bn per annum - equivalent to approximately 18% of all R&D spending across the UK. Driven in significant part by its innovation industries, the East of England is set to be one of the country's best performing regions for economic growth from 2024-26, growing by an average of 2.1% per annum.¹

Cambridge sits at the heart of innovation in the region, a globally competitive city and an economic hub, it is one of the fastest growing economies in the UK. Cambridge firms generated collective annual turnover of £48bn in 2021/22 and employment has grown at a rate almost twice that of the national average over the last decade. There are now over 72,000 people employed by knowledge intensive firms². Cambridge is an established breeding ground for Unicorns (companies valued at more than \$1bn), having produced 23.

Beyond Cambridge, the East of England has several major innovation clusters, each with their own significant role in the UK economy. Norwich has world leading institutes and innovative businesses focused on food production, nutrition and environmental sciences, international leadership in insurance and a burgeoning tech start up scene. Stevenage is home to a growing life sciences cluster with a world-recognised research specialism in cell and gene therapy³; around 45 companies are based at Stevenage Bioscience Catalyst (SBC) anchored by the Cell and Gene Therapy Catapult and GSK. Adastral Park, just outside Ipswich, is at the heart of the country's ICT and digital ecosystem, whilst Peterborough has one of the densest collections of cutting-edge manufacturers in the UK. The East of England is the UK's clean energy powerhouse. A significant proportion of the country's offshore wind is located off the coast of Norfolk, Suffolk and Essex with innovation and expertise across the region in a broad mix of other low carbon energy production – from solar to nuclear and biomass.

The region's universities are its engine rooms of innovation, training talented graduates and conducting cutting-edge research. They are spread geographically across the region including the University of Cambridge, UEA, the University of Essex and ARU. Harnessing our universities commercial power can deliver enormous benefits across the UK, for example the University of Cambridge delivers £23bn of impact annually just from its research and spin out activities.

¹ [Cost of living pressures set to intensify the UK's regional economic divide | EY UK](#)

² [Cambridge Cluster Insights - Cambridge Ahead](#)

³ [JLL-EMEA Life Sciences Cluster Report 2023](#)

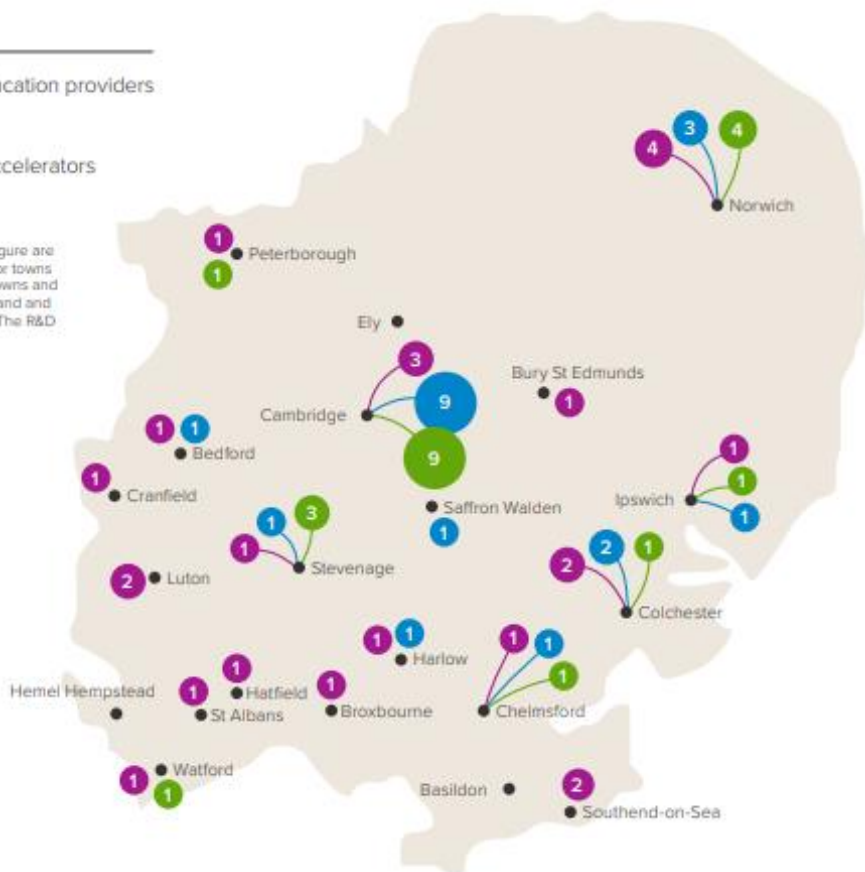
Figure 1 – Where does R&D take place in the East of England? ⁴

Map of R&D activity in the East of England

KEY

- Universities and higher education providers
- Science parks
- Business incubators and accelerators

Note: The geographical areas used in this figure are based on the ONS classification. List of major towns and cities from the ONS Geoportals Major Towns and Cities (Dec 2015) Names and Codes in England and Wales. Additional towns have been added. The R&D sites listed may not be exhaustive.



870 scientific research and development workplaces ⁵	25 universities and higher education providers ⁶	13% of the UK's research infrastructures ⁷	20 science parks ⁸	21 business incubators and accelerators ⁹
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Life Sciences

Cambridge is a world leader in life sciences. The Cambridge Biomedical Campus is the largest centre of medical research and health science in Europe and the city is home to critical research initiatives such as the Wellcome Genome Campus and Cancer Research UK. This wealth of assets supports the co-location of high growth companies including the global R&D headquarters of Astra Zeneca, a pioneering pharmaceutical company⁵.

Elsewhere in the region, Reef/UBS are developing an additional 1.6 million sq. ft of office, lab and GMP space at the Elevate Quarter in Stevenage, set to become one of the largest commercial life sciences campuses in Europe⁶, and a further 530,000 sq. ft at The Assembly in the town centre. This new development will work alongside the existing ecosystem of pharma R&D, cell and gene clustering excellence and the SBC start-up community accelerating the translation, scale up and commercialisation of cutting edge innovations.

⁴ [research-innovation-east-of-england.pdf \(royalsociety.org\)](#)

⁵ [Cambridge life sciences and healthcare industry - Cambridge& \(cambridgeand.com\)](#)

⁶ <https://www.stevenagecatalyst.com/news/ubs-asset-management-and-reef-group-secure-approval-one-europes-largest-life-science-campuses-stevenage/>.

Norwich Research Park has a concentration of health activity including in the fields of gut medicine (Quadrum Institute), genomics (Earlham Institute), biomedical research (Norfolk and Norwich University Hospital) and clinical trials (National Institute for Health and Care Research).

CMR Surgical

A Cambridge company with downstream manufacturing located within the eastern region.

CMR Surgical is transforming surgery for people through a next-generation surgical robot Versius®. The robot is designed to enable surgeons to perform more minimal access surgery, so that more patients can have access to the highest quality of surgical care. It has raised \$850m and is valued at over \$3.5bn. It has its headquarters, research and design in Cambridge. To meet the increasing global demand for Versius®, a large-scale manufacturing facility is being built in Ely, Cambridgeshire.

Agri-tech

The East has some of the largest agri-food sectors and most productive farmland in the UK, supporting an advanced and nationally significant food and drink sector; and globally recognised experts in plant and soil research who are addressing the challenges facing future generations.

Norwich Research Park has a concentration of research expertise in food and plant science, hosting a community of 17,000 students and more than 3,000 scientists, researchers, clinicians, and business people. As part of the UKRI Infrastructure Fund, in June 2023 it was announced that £317.7million is set to be invested in The John Innes Centre and The Sainsbury Laboratory at the park over the next seven years. This will allow them to fund new pioneering, world class facilities, including the development of a ground-breaking plant and microbial science and innovation hub.

Also in Norwich, Broadland Food Innovation Centre is a focused public-private-research partnership which champions the food and drink economy in Norfolk and Suffolk. It opened in 2022 and has supported 142 food and drink businesses and helped to enable 40 collaborations between industry and academia.

British Sugar

Partnership with Tropic Biosciences on gene editing technologies

British Sugar has its headquarters in Peterborough. It is a home-grown industry working with over 2,300 sugar beet growers across the East of England, the East Midlands and Yorkshire. They produce and supply over 50% of the sugar consumed in the UK and support around 7,000 jobs across the UK directly and indirectly. Sugar Beet is particularly susceptible to Virus Yellow disease, which is spread by aphids. In 2020, 40% of the crop nationally was affected by the disease and overall yields were down 25% on the five-year average.

British Sugar is committed to investing in a long-term, sustainable solution for the industry which does not rely on pesticides to protect yields. They have partnered with Tropic Biosciences (based at the Norwich Research Park), a UK-based agricultural biotechnology company that leverages cutting-edge precision breeding methods to develop healthier, more robust and sustainable varieties of tropical crops. Tropic's use of gene editing technology accelerates breeding of crops so that they can withstand climatic stress, exhibit disease-tolerance, produce higher yields and have longer shelf-life. By developing disease resistant crops, they are also reducing reliance on imports, expediting agricultural development, and reducing the need for pesticides.

Technology

Technological innovation comes to the fore at the globally-significant science and technology campus at Adastral Park, BT's global R&D headquarters just outside Ipswich. The park's high tech business cluster – called Innovation Martlesham – has around 140 companies that work either in or with the digital sector. They range from global organisations like Cisco and Nokia to a diverse collection of dynamic SMEs and start-ups serving a multitude of sectors. In 2021, the University of Suffolk and BT opened a £9.6m DigiTech centre on the park to train students, graduates, and apprentices.

Cambridge is also home to a vibrant technology sector with expertise in Artificial Intelligence, use of drones, data and robotics. Cambridge has grown global digital business, like ARM and Aveva, and many global giants have a presence in Cambridge, including Amazon, Apple, Microsoft and Samsung⁸.

The Digital Creative and ICT sector within Norfolk and Suffolk has a current workforce of 24,400 and 4,400 enterprises. There are plans to create 10,000 tech roles to be filled by 2024. Norwich hosts a vibrant cluster of digital creative businesses, and a rich ecosystem of interlocking meet-up groups catering to a range of tech and digital interests. Businesses include award winning digital businesses such as Foolproof, EPOS NOW and Further. Norwich University of the Arts (NUA), with its specialism in arts, design and media is at the cutting edge of design innovation, launching innovative degree programmes such as UX design.

UtterBerry

A Cambridge University spinout, manufacturing AI sensor technology in Leeds.

Founded in 2013 by Heba Bevan during her Cambridge PhD, UtterBerry builds AI sensor technology used to monitor the safety of infrastructure on national and international projects like Crossrail, Thames Tideway and London Underground. UtterBerry additionally create technology for sport and health monitoring, including a medical device for 30-second or less spot-checks to screen people entering a building for infectious disease.

The company has based its manufacturing and innovation hub in Leeds, where it aims to create at least 400 full-time and 400 part-time jobs over the next five years to design and manufacture UtterBerry's products.

Advanced Manufacturing and Engineering

Peterborough has one of the densest collections of cutting-edge manufacturers in the UK, with a concentration 50% higher than the UK average. Peterborough manufacturers are at the forefront of digitalisation and the cluster includes 3D printers Photocentric and composite experts like TRB Lightweight and Codem Composites. Together Peterborough's manufactures employ 37,500 people of which around 70% are in hi-tech manufacturing.

Innovation in Peterborough does not happen in isolation, it is enabled by talent development from the College of West Anglia, internationally renowned TWI and the Institute for Manufacturing at the University of Cambridge. The ARU Peterborough University, which opened in 2022, also has a significant focus on automation, digitisation and AI, supporting cross-sector innovation⁹.

Norfolk has advanced manufacturing and engineering clusters focused on the agritech, energy and automotive sectors. Hethel Engineering Centre in South Norfolk, close to iconic sports car manufacturer Lotus, helps SMEs across the region become more innovative, productive and competitive. It has been home to more than 350 ground-breaking businesses and incubated more than 200 start-ups, creating more than 1,500 high-skilled jobs. Hingham Enterprise Park is home to

⁸ [Cambridge tech industry - Cambridge& \(cambridgeand.com\)](#)

⁹ [Manufacturing and Advanced Engineering - Invest in Peterborough](#)

world class businesses such as Mirus Aircraft Seating. Mirus is contributing towards net zero through its R&D investment in innovation lightweight aircraft seats and equipment.

Airbus chose to locate its £35 million UK space and defence headquarters in Stevenage. It is the home of the European Space Agency's (ESA) ExoMars rover. The UK team also built and designed the Aeolus wind sensing satellite and are played a key role in Biomass, the ESA mission to measure the world's forests from space.

Equipmake

Engineering an electric future

Equipmake were established in Hethel Engineering Centre in 1997 to design and produces Electric drivetrain solutions. Since working with Innovate UK and the Advanced Propulsion Centre in 2012, they have won funding for 13 projects ranging from £75,000 to £2.6 million. In 2019, they moved to a new 1,500m² purpose-built facility at Snetterton Business Park.

The company has grown to 85 staff members, achieved a turnover of £3.7 million in 2021/22, and their systems are on trial in busses in the UK and both North and South America. Equipmake has secured £16.2 million in private investment since its initial public offering in July 2022 and has been selected by Australia's leading space company, Gilmour Space Technologies, to support its commercial space rocket programme.

Clean Energy

The East of England has major energy generation capabilities, with a unique mix of wind power, through nuclear to hydrogen and solar as well as natural gas assets. Norfolk & Suffolk have the potential to supply up to 50% of the UK's 40GW target from offshore wind by 2030. Whilst Sizewell C is expected to meet 7% of the UK's energy needs when operational.

With its outstanding research and development capabilities, and the green energy infrastructure already in place, the opportunity is there for the East to act as the driving force behind the UK's green transition. Global corporates including EDF and Vattenfall's supply chains ensure a constant stream of innovation and both the Offshore Renewable Energy Catapult and Orbis Energy Centre provide a hub for clean energy in Suffolk¹⁰.

Freeport East has significant plans to develop a 'green energy hub' at the Port of Harwich with high-skilled jobs supporting the large-scale manufacturing of offshore wind turbines and components. In addition, Hydrogen East has unveiled plans to lead the development of a clean hydrogen cluster in the East of England, with a proposal for six "core" electrolyser sites across Norfolk and Suffolk.

Anglian Water

Tomato Greenhouses powered by sewage water heat

Anglian Water provides latent heat from the sewage treatment process to two industrial scale tomato greenhouses, one at Fornham (Bury Saint Edmunds) and another at Whitlingham (Norwich). This is a fantastic example of committing to net zero and demonstrating a circular economy approach to local food production.

Whitlingham Water Recycling Centre is also the first in the country to inject biomethane directly into the national grid, providing renewable gas sources to UK consumers, all from the by-products of sewage treatment.

¹⁰ [12 Clusters of Tech – East of England, London Tech Week](#)

HOW DO WE ENHANCE INNOVATION IN THE EAST OF ENGLAND?

Cambridge is the most intensive science and technology cluster in the world, as measured by research output¹¹. However, it has historically been less efficient in translating these discoveries into at-scale businesses. Whilst the density of the Cambridge ecosystem makes it well suited for the origination of research, downstream development and creating scale requires Cambridge to become much more porous and the ecosystem easier to navigate. There is enormous opportunity to be found in a much more integrated and symbiotic relationship between Cambridge and the rest of the Eastern region¹².

The East of England is a web of over 120 towns and cities. Enabling innovation to flourish therefore relies on our ability to better connect all areas of the region, and the clusters of excellence described within this document. Practical infrastructure issues must be tackled, skills mismatches must be resolved, and we must continue to invest in space for start-ups and support for collaborative research between academia and industry.

- **Upgrade our road and rail networks to ensure they are fit for purpose.** Recent announcements around funding to progress crucial Ely and Haughley rail junctions are welcomed, as is progress on further dualling of the A47. We must now ensure rapid delivery of East West Rail so that the benefits of growth along the Oxford to Cambridge corridor can be spread beyond to more deprived areas in Cambridgeshire, Norfolk and Suffolk.
- **Invest in high quality digital infrastructure to drive the development of high-value sectoral clusters.** At present however, only 65% of premises in the East of England have access to gigabit broadband – (1000 MB per second) - 6.4% lower than the national average. Norfolk, Suffolk and Thurrock are the three areas with the highest percentage of properties with the slowest internet speeds and should be prioritised for improvements.
- **Establish direct air services from Stansted to San Francisco and Boston.** The regions two major UK airports, London Luton and London Stansted, act as gateways between the UK and the world. The high concentration of knowledge intensive industries in the East relies on international connections to secure new investment, recruit talent globally and enter new markets. Direct air services from Stansted to San Francisco and Boston would produce an economic dividend for the East of England of around £185m in new inward investment, plus £85m in exports per year.¹³
- **Support innovation and activation infrastructure.** Innovation infrastructure acts as an essential anchor for innovation clusters, enabling companies to scale. Together public and private sectors must continue to support the development of Enterprise Zones, Investment zone, science parks, innovation centres and incubators. By continuing to invest in the East of England Government can maximise return on public investment in R&D by harnessing private investment and making the UK a leading location for the industries of the future.
- **Devolution to allow opportunities for local oversight of skills funding and coordination across local partnerships.** The East of England is projected to deliver around 600,000 new jobs by 2036 driven by the growing industries of the future. However, skills shortages and mismatches with local employer needs pose significant challenges, and this is further compounded by the demands of technological progress. We need greater integration between knowledge intensive job needs and local skills pathways. There also needs to be more in-work education provision and participation on further education and skills training for adults. Local skills improvement plans, which bring together employers, skills providers and local authorities to better understand and resolve skills mismatches at a local level, will be at the centre of this.

¹¹ [Cambridge remains most intensive science and technological cluster in the world – Cambridge Enterprise](#)

¹² [Innovate Cambridge Strategy](#) and Prashant Shah, o2h Ventures

¹³ [Report reveals long-haul benefits for the region \(stanstedairport.com\)](#)

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