Opportunity East

July 2024

How the East of England will drive national productivity through innovation

East of England Local Government Association

Chambers EAST

BritishSugar

Contents

1 Foreword

The East of England makes a major contribution to national economic growth and prosperity. Some of our success stories are well known: Europe's largest centre of medical research and health science in Cambridge, world leading food and plant research institutions in Norfolk, and BT's global R&D headquarters at Adastral Park, Ipswich, to name just a few.

What is less well known is that innovation can be found right across our region: from the new Airbus space and defence headquarters in Stevenage, where the company has built the ExoMars Rover ahead of the first European rover mission to Mars, to Colorifix who are based at the Norwich Research Park and developing a revolutionary dyeing process to help the textile industry dramatically reduce its environmental impact. From Maycast Nokes in Essex, who make precision parts for aerospace, defence and automotive industries, to Iona Logistics in Bedfordshire, who are creating autonomous drones that can deliver efficiently to rural areas. Quite simply the East of England is the UK's innovation region. As the former Minister for Science, Innovation and Technology recently noted, it is "bursting with innovation, talent and opportunity". It is time to make the benefits of this creativity – including for future UK growth and productivity – clearer.

It is also time to make the extent to which the East of England supports national resilience and security more widely understood. Our energy production is set to play a major role in the UK's transition to a low carbon future. We are a hub of food innovation, production and manufacturing – providing the country with vital food security at a time of increasing climate challenges. Our ports and airports keep the UK's goods and passengers moving.

This report tells this regional story at an important time. Nationally, economic growth is underperforming and the country faces a long-term productivity slump. However, the East of England is one of the fastest growing and most productive regions and therefore provides a national opportunity to drive economic growth and resilience.

This opportunity requires investment to unlock it. The East of England receives less funding per head compared to other regions, working out at over £1,000 per capita less than the UK average annually – an £8bn gap every year. This is despite the region consistently being one of the highest contributors to the exchequer over the last two decades.

This historic underinvestment is apparent in our infrastructure. This report highlights a range of challenges across the region: from unreliable road journeys and rail links to patchy digital infrastructure, to grid and water challenges which are creating huge uncertainty for businesses and development.

We are also the region most affected by climate change, with one fifth of the region below sea level, and challenges around drought and nature conservation. Whilst much of our region is highly skilled, with a high quality of life, we also have many communities that are deprived, with challenges in terms of skills, access to work, health and housing affordability.

It is therefore essential that we redress the balance in public funding so that our region can continue to grow. Without significant investment in our infrastructure, it is likely that we will see more and more stalled development sites, businesses unable to expand and lost investment. This is not merely a future hypothetical – in the course of this work we have heard several examples of firms that are, or are considering, withdrawing or moving investment outside the region. If this continues it will be disastrous for the region, and the country.

However, with the right level of investment in key infrastructure, our contribution to UK plc could grow significantly. The East of England is already projected to grow to a £220bn economy by 2035. But with stronger infrastructure we will not only achieve higher, sustainable and inclusive growth, and drive forward productivity nationally, but also support the UK's goals around innovation, technology, net zero and food security. Devolution will also be an important component in achieving success, presenting us with future opportunities to take more control over local decision-making to help drive forward progress.

We would like to extend our thanks to stakeholders from across the region who have helped shape Opportunity East, produced in collaboration with the All Party Parliamentary Group for the East of England, helping us to arrive at a shared set of priorities which can help us to unlock our full economic potential. We look forward to working with these partners and with government to fulfil our aspirations, for the benefit of our region's residents and businesses as well as the UK as a whole.

Cllr Graham Butland, Chairperson of EELGA and Leader of Braintree District Council

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2 Executive Summary

Opportunity East: Driving National Productivity Through Innovation

A strong growing economy

Our economy makes a major contribution to UK growth, driven by expertise in a number of critical sectors.

£163bn Gross Value Added (GVA)

46% economic growth since 1998 (36% nationally exc. London)

Higher employment rate and higher productivity than the national average (exc. London)

Highest business R&D per capita of any region (double national average)

Nationally important sectors and clusters

Life sciences

Agri-tech

Net Zero

Digital

Advance manufacturing

Creative

Foundational Sectors:

Logistics

Construction

Visitor economy

Supporting national resilience and security

Our region is home to assets that drive the security and effectiveness of the UK economy.

Energy security and Net Zero
We are key to the UK achieving its net zero ambitions

National food security
major food producer and innovator

International Gateway
home to two freeports and four major airports

Challenges to our infrastructure and communities

But our region faces significant challenges due to inadequate infrastructure. And our communities need support to achieve their full potential.

We need to invest in key infrastructure + **Adapt and mitigate against climate change** + **Support better skills, health and housing**

Opportunity East: Driving National Productivity Through Innovation

We need stronger investment in our region

We receive one of the lowest rates of public funding of any region in the country

Despite this, we are a net contributor to the Exchequer

If we received the same public funding as the national average, we would have **an additional £8bn per year** of public investment

The risk: lack of investment results in slow growth

Historic growth has been strong, but our infrastructure challenges are severe. There is a risk that without further investment, growth will falter due to:

Stalled sites

Reduced investment

Congestion / delays

Climate change

Lack of skills

The opportunity: investment in infrastructure creates higher long-term growth

On current growth trends we will be a **£220bn economy by 2035.**

However, if we can correct the imbalance in our regional investment we can achieve even greater growth and productivity, benefiting our region and the whole of the UK.

With more investment we can:

Support national economic and productivity growth

Grow stronger technology sectors

Support national energy security and net zero

Support food security

The East of England has an extremely important role to play in supporting the UK to achieve renewed economic prosperity. Having formally entered into recession in the latter half of 2023, economic growth is clearly at the top of the agenda for the incoming Government.

As one of the fastest growing economies in the country, we continue to be a major economic contributor. We are an international gateway for the UK; our ports and airports are crucial to the movement of goods and people across the country. As a major source of food and energy production, we are also at the forefront of ensuring national food and energy security, which have come under increasing strain through global events putting pressure on the supply of oil and gas, contributing to higher food prices.

But we can do so much more. We continue to perform strongly despite a relative lack of funding, among the lowest per head across the UK.

If we were to receive additional investment to address this funding gap, with a strong focus on infrastructure, we could create the right conditions to boost growth further, not only benefitting our region but making an even greater contribution to the national economy, whilst securing the resilience of the country in the face of external challenges.

Without additional support, the UK is at risk of underutilising our key economic assets, pushing not only the East of England towards slower growth, but the whole country in the process. Failing to overcome crucial infrastructure obstacles will result in major projects being delayed and investment opportunities disappearing, in turn preventing our residents from benefiting from our many strengths.

We ask for further investment for major projects and other improvements across transport, digital, water, grid and skills - and to mitigate against the impacts of climate change, to set our region, and the country, on a path to higher growth.

Our economic contribution and national role

The East of England economy contributes £163bn of Gross Value Added (GVA) to national economic output. Our economy is home to 270,000 businesses and 3.2m jobs. Ours is a high employment and high productivity economy, employment at 76.3% is above 75% nationally, and productivity 1.5% higher than the national average (excluding London).

In part, this reflects the high rate of economic growth that the region has achieved over the past two decades. Since 1998, our economy has grown by 46% compared to 36% nationally (excluding London). Our economic contribution also reflects the wide range of nationally significant sectoral and innovation clusters with specialisms in life sciences, digital technology, clean energy, agri-tech, advanced manufacturing and creative industries.

Innovation is a real strength of the region, reflecting our many high-quality academic and research institutions as well as business innovation. Business investment per capita in research and development (R&D) is more than double the national average, higher even than London or the South East region. Beyond our high technology sectors, our broader economy has strengths in high value professional services, construction, logistics and the visitor economy.

At a time of slow economic growth nationally, including a long-term, low-productivity challenge, the East of England has a critical role to play in supporting national economic growth and innovation excellence.

Nationally important assets

The East of England is home to a number of nationally important assets, which together play a critical role in safeguarding the long-term security and resilience of the UK. This is increasingly important given the external challenges which the UK faces, in terms of climate change, increased geopolitical risk and the supply chain challenges due to a more uncertain global context.

The region will continue to play **a vital role in the transition towards net zero emissions and national energy security,** with our wide range of generation assets from offshore wind to solar, biomass, natural gas, nuclear and hydrogen. Currently, energy produced in the East of England powers 32% of all UK homes equivalent and by 2035 could power 90% of homes equivalent[1], with all of this coming from low carbon sources. Simply put, the UK cannot achieve its net zero ambitions without the East of England. Sizewell C offers a major opportunity, expected to draw £4bn into the regional economy and support 70,000 UK jobs including stimulating local supply chain opportunities. There are major clean energy proposals to convert Bacton gas terminal to a hydrogen facility, which can provide a significant boost to the local economy by creating hundreds of green jobs. Additional investment in offshore wind will add to the sector, with our region already generating 24% of offshore wind nationally.

The region also plays **a crucial role in ensuring national food security.** We are a major source of food production and agriculture, as the most profitable farming region, with a third of the UK's Grade 1 (highest quality) agricultural land and second largest total farmed area across England. Moreover, we have significant expertise in agri-tech, with five of the eight national Biotechnology and Biological Sciences Research Council's (BBSRC) research institutions being located in our region - leading research in food and plant science, genetics and microbiology.

The East of England also has a role as **a major international gateway for trade and exports.** 50% of the UK's containerised freight moves through our region, reflecting our extensive logistics infrastructure: Freeport East which includes Felixstowe, the busiest container port in the country, Thames Freeport, and our four main airports play a vital role in the movement of goods and people across the country.

[1] Opergy Group

Our challenges

Despite these many important strengths, our region faces a number of challenges that require urgent investment at scale. In particular, there are a number of infrastructure constraints limiting our economic potential.

• **Transport:** We face significant congestion problems on our motorways and A-roads, with delays on the region's roads being 20 worse than the national average. Rail connectivity is hampered by inadequate infrastructure, critical pinch-points and the need for electrification in some parts of the network. Across both road and rail, there is poor east-west connectivity which hampers economic activity. These challenges also affect connectivity to and from our major ports and airports, which, given their national importance, creates a drag on growth and productivity nationally.

• **Digital connectivity:** Digital connectivity, although improving, is below UK levels for both broadband and mobile connections and is particularly weak in rural areas. Our region is the second lowest performing for gigabit and full-fibre broadband coverage, with other research undertaken suggesting that coverage figures are often overly optimistic in terms of reliability and average speeds achieved. This creates challenges for our business base in terms of business operation in an increasingly digital-first environment, as well as for our residents in the context of increased agile working.

• **Energy infrastructure:** Despite being a clean energy leader, our grid faces constraints which create barriers to new developments and limit the amount of additional renewable energy projects it can host. This is particularly true in some of our rural areas, which limit the potential for businesses to expand, especially those which are more energy intensive. Currently, the East Anglia network alone carries 3.2 gigawatts (GW) of electricity generation capacity and 15GW of new generation capacity is expected over the next decade. Our research has identified examples of businesses being unable to invest in the level of renewable energy they need due to an inability to export excess energy to the grid. We have also heard from residents who feel they do not get any of the benefits from the region's clean energy prowess, with much of the energy produced exported back to the grid and not making landfall locally.

• **Water infrastructure:** Water scarcity is already a challenge across the region, preventing businesses from expanding and delaying planned housing developments. Water Resources East estimate that unless action is taken, there will be water shortages of 800 million litres per day by 2050 across Bedfordshire, Cambridgeshire, Essex, Norfolk and Suffolk – the equivalent of a third of current water use in the region. The Water Resources South East area, which covers Hertfordshire, is also facing shortfalls as set out in the draft regional plan[2].

• **Climate change:** Climate change will heavily disrupt and potentially threaten our residents without further adaptation and mitigation measures. At the same time as the region faces drought, flooding is also an issue where about one fifth of the East of England lies below sea level. We also face issues around coastal erosion, where Norfolk and Suffolk have some of the fastest eroding coastlines in Europe, with over 2,500 homes at risk of erosion and thousands more properties and businesses directly and indirectly affected by loss of property, infrastructure and utilities[3].

• **Housing affordability:** Housing presents another major challenge. House prices have risen further and faster than the rest of the country, meaning that average house prices are 10 times average annual earnings, and as high as 14 times in some parts of the region, compared to 8 times as high nationally.

• **Supporting our communities:** In addition to the challenges we face around our infrastructure, we must ensure that we continue to level up our communities. The East of England is less deprived as a whole than much of the country, but there remains entrenched deprivation in some parts of the region, particularly in our more rural and coastal areas, which are amongst the most deprived nationally, as well as in some of our urban centres.This impacts on our health – despite relatively high life expectancy there is inequality in experience, particularly for those in more deprived areas. Skills participation and achievements have been declining significantly over the last 10 years and we are amongst the regions with the lowest skills participation rate in England.

[2] Water Resources South East (WRSE), Futureproofing our water supplies, 2023

[3] Environment Agency, Resilient Coasts - Great Yarmouth and East Suffolk, 2024

The East of England Opportunity

The East of England is one of the fastest growing regions across the country and by 2035 will be a £220bn economy based on our current growth trajectory. Our success over the last two decades has happened despite low levels of public investment. The region has been one of the highest contributors to the UK treasury, but we continue to receive some of the lowest allocations of public sector expenditure per capita, over £1,000 (10%) lower per head of population per year than the UK average. In total, this means that **our region receives £8bn less per year than it would if we were funded at the same level as the rest of the country.**

We also frequently receive low levels of allocations from major funding initiatives – for example the recent Levelling Up funding pots, where the East of England received the second lowest per capita allocation.

This consistent underinvestment is taking its toll on our vital infrastructure and undermining the potential of businesses in the region to grow and invest. There is a **real threat to the continued prosperity of the region** arising from issues associated with slow and stalled development of commercial and housing sites, poor transport and digital connectivity, energy and water utilities, and the unmitigated risks of flooding and drought on the region. Given the importance of the success of the region to the rest of the UK, this is a national challenge.

Without a significant increase in investment, we should expect economic growth in the East of England and the UK to slow.

Given that historic growth has been achieved with limited investment, it stands to reason that there is an opportunity for the East to grow even faster if we receive the right support.

This would not only deliver improved economic performance and higher GVA, it would also:

- Help deliver national objectives around key sectors and clusters, including life sciences, quantum computing, advanced manufacturing, agri-tech and bioscience and energy.
- Support delivery of the UK's energy security and net zero goals, by unlocking improved baseload capacity, renewables, new nuclear and hydrogen.
- Drive innovation in food technology and help secure national food security.
- Adapt to and mitigate against further impacts from climate change.
- Ensure our residents are supported to benefit from the many projects needed in the region, including through employment opportunities and developing new skills.

We call on Government to work with us, and with local partners, to ensure that the East of England can fulfil its potential – and continue to deliver for our residents, our businesses, and the whole of the UK.

What we need

To unlock the East of England's full economic potential, we ask the Government to support on the following infrastructure improvements:

Transport

- Confirm commitment to major transport schemes such as East West Rail, and Ely and Haughley rail junction improvements.
- Extension of Bus Service Improvement Plan (BSIP) / new funding to support bus networks, particularly in rural areas.
- Simpler, longer-term funding mechanisms to facilitate stable regional transport investment pipelines supporting priorities set out in the strategies of the region's two Sub-national Transport Bodies (STBs).
- Increase of maintenance budgets to support necessary repairs to our road and rail networks.
- Commitment to work in partnership with local councils to facilitate an acceleration in the roll out of the infrastructure needed for electric vehicles.
- Enhance the role and powers of the Sub-national Transport Body partnerships of local authorities and other partners, to better join-up strategic transport planning across the East with Government and national delivery bodies, to improve outcomes and achieve cost efficiencies.

Digital Connectivity

- Follow through with the national Wireless Infrastructure Strategy to boost the reliability of mobile and internet connectivity reporting measures.
- Look to hold both providers and the regulator to account, in part by ensuring that measurements of connectivity reporting are accurate.
- Provide more funding for the Gigabit voucher for rural communities.
- Undertake a risk assessment of the 'Big witch Off' of copper lines and G to ensure businesses and residents are protected from any adverse effects.
- Provide an up-to-date roadmap for the Shared Rural Network for the East of England.

Energy

- Ensure sufficient grid reinforcements take place to allow for clean energy developments.
- Consideration for alternatives to current National Grid overhead lines and pylon proposals such as offshore solutions.
- Collaborate with National Grid and Distribution Network Operators to explore innovative power solutions for constrained areas.
- Ensure that our communities benefit from energy infrastructure investments.
- Investment in hydrogen network opportunities to maximise the potential of green hydrogen.

Water

- To provide stability in light of troubles faced by Thames Water.
- To take urgent action at a national level to reduce water pollution, both directly with providers and ensuring sufficient resourcing for regulators.
- Assure the delivery of a major new reservoir in Fenland expected to supply 250,000 households a year. A new Lincolnshire reservoir will also be relevant for our region.
- Interim solution to transfer water from Grafham Water to Cambridge to help alleviate pressures on sensitive chalk rivers before the Fens reservoir comes into supply.
- A smaller winter storage reservoir in North Suffolk by 2040 along with water reuse schemes at Colchester and Lowestoft.
- Greater investment in network leakage identification and mitigation.
- More national support for business and domestic water efficiency – including smart metering.
- Investing ahead of need to support growth – including desalination.

Climate change and planning

- Independent climate change risk assessment for the East of England.
- Resources to facilitate place-based climate action networks.
- Investment needed in strategic flood defences to protect our communities and key economic assets, and to enable growth in currently at-risk areas.
- Investment needed in waste facilities, wastewater and minerals provision to support the continued growth of our communities.
- Greater, simplified, less competitive funding for councils to deliver against net zero ambitions.

Skills

- Further devolve skills funding to single devolved funding for all post-16 skills, including apprenticeship funding and the Apprenticeship Levy Transfer (which should be made more flexible).
- Increase the adult education budget in the East of England to support infrastructure projects, including the delivery of at least one more Institute of Technology in the region.
- Conduct a region-wide plan to meet the need of Health and Social Care skills across the East of England.
- Address the lack of funding for transport to industry placements (for T levels; 45 days+ and work experience) and training. Also provide funding to meet the costs of travel to first jobs.
- Continue with Local Skills Improvement Plans beyond March 2025 to ensure employers remain at the heart of skills planning.

Tying this all together: Regional co-ordination

A key enabler will be to bring regional partners together to co-ordinate a stronger regional approach to infrastructure. This co-ordination should include representation from: local government, STBs, business representative groups, universities, the Regional Climate Change Forum, utilities, infrastructure companies and Freeports. We ask for support and engagement from government to ensure that our regional work informs and drives stronger public investment.

As part of developing stronger regional co-ordination, we ask for support and to work in partnership with Government and alongside regional partners to develop a full economic analysis of the impact of required infrastructure to make a more quantified case for long- term funding.

3 Introduction

The East of England Local Government Association (EELGA) in partnership with the East of England All-Party Parliamentary Group (APPG) and Chambers East commissioned Metro Dynamics to develop this report.

This work is a review of existing strategies, studies and data, supported by new analysis where needed, in order to compile a comprehensive picture of the economic and infrastructure challenges and opportunities in our region. The aim of this work is to provide a strong evidence base and a clear list of what our region needs to grow.

In developing this work, we are clear that we need a region-wide perspective. Our region is large and diverse, but despite the differences across different places, there is a remarkable consistency in the nature of the infrastructure issues and challenges. It is also clear that there are beneficial linkages between different parts of the region that can be developed further. Therefore, it is appropriate to talk about the region as a whole, even whilst acknowledging the differences that exist.

Review approach

Starting in November 2023, Opportunity East has drawn together the excellent research compiled by regional partners over the past few years and added to it with extensive stakeholder engagement and further data analysis.

We have undertaken an extensive **literature review** for the region. In the recent past, EELGA has produced major reports on levelling up, housing and digital which have fed into this review. Since November, there have been a number of major reports released, including work by: Water Resources East, Anglian Water, East of England Energy Group, and our Sub- national Transport Bodies (STBs) to name but a few. This has been supplemented by recent reports and notes of meetings commissioned by the East of England APPG, including work on climate change, skills and housing. All this work has informed the development of this narrative for our region.

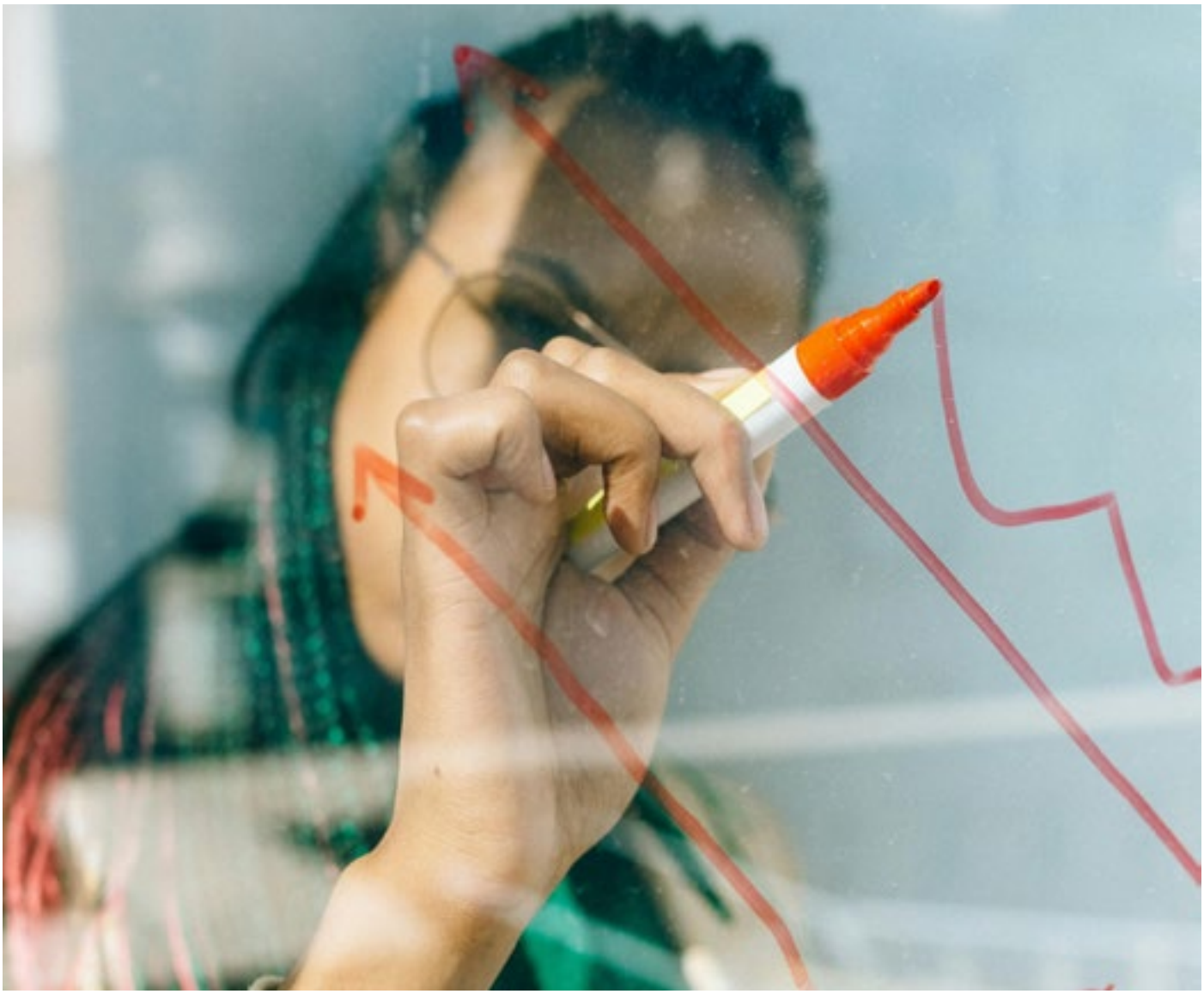
We have conducted **extensive stakeholder engagement**, speaking with well over 100 stakeholders to hear their views on strengths, opportunities, challenges and threats for the region, helping to arrive at a collective set of priorities. We have used a mix of 1-2-1 conversations and workshops to hear from as many people as possible. This included convening three workshops on, respectively: inclusive growth, innovation, and climate change & the green economy. We have also attended East of England APPG events on climate change, and skills and health, as well as EELGA's Infrastructure and Growth Panel and the East of England Chief
Executives Forum.

Where existing reports or studies are not fully up-to-date, or where key statistics are missing, we have undertaken **additional data analysis** of key metrics. This work has drawn on a range of public and commercial data and has helped us to round out the narrative.

Structure of the report

The rest of the report is structured as follows:

- **The East of England:** The geography and major trends in the region, and the typology of places.
- **Our economic contribution:** Setting out our significant economic contribution in terms of GVA, productivity, and major sectoral and innovation clusters.
- **Our nationally important assets:** Our role in supporting energy security, food innovation and security, and trade and exporting.
- **Our regional infrastructure challenges:** Spanning transport, digital connectivity, grid, water and climate change mitigation, including our asks to government in these thematic areas.
- **Levelling up our communities:** Identifying challenges around deprivation, health, housing, and skills.
- **Investing in our region:** An analysis of public sector investment received in the East of England.
- **Opportunity East:** How further investment in the East of England can support improved regional and national growth.

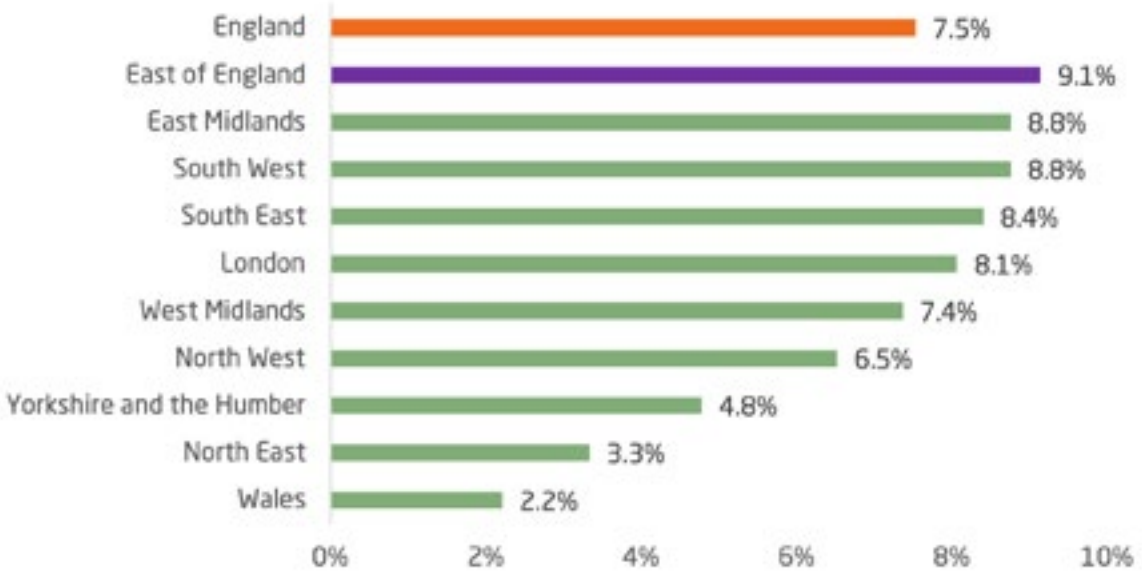


4 The East of England

Covering over 19,000 square kilometres, the East of England is the second largest region in England by land area, reaching from Bedfordshire and Hertfordshire in the west, to Norfolk, Suffolk and Essex on the east coast; and from the edges of London in the south, up through Cambridgeshire to where the region meets the Midlands.

We have the fastest growing population across England and Wales, reaching 6.4 million in 2022, up by 9% from 5.9 million in 2011. Although our region does not contain any of the top 10 largest cities by population size, many of our towns and cities are among the fastest growing in the country over the last decade, including Cambridge, Peterborough, Harlow, Watford, Colchester and Luton, all of which have seen population grow by 10% or more since 2011.

Figure 1: Populating growth by region (2011-22)[4]



Although our cities may not be defined as large in pure population terms, they are productive and home to many significant national assets as shown by Figure 2. Cambridge, forming part of the UK Innovation Corridor, Cambridge-Norwich Tech Corridor and Oxford-Cambridge Partnership, sits at the centre of innovation in the East of England. The city is synonymous for its world leading strengths in biotechnology, with major anchors for the regional economy in the Cambridge Bio Medical Campus and Science Park.

Alongside Cambridge's strengths in life sciences, we have specialist centres in tevenage with its world-recognised research specialisms in cell and gene therapy, Harlow which will be the home of the UK Health Security Agency national science hub, Braintree's Cell and Gene Therapy Catapult Manufacturing Innovation Centre, and Norwich with a concentration of health activity in nutrition and environmental sciences.

The region has several major innovation clusters, each playing a 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, forming the other end of the Cambridge-Norwich Tech Corridor - joining up many of our leading assets into a compelling offer for investors. Adastral Park, BT's global R&D headquarters just outside Ipswich, is also at the heart of the country's ICT and digital ecosystem.

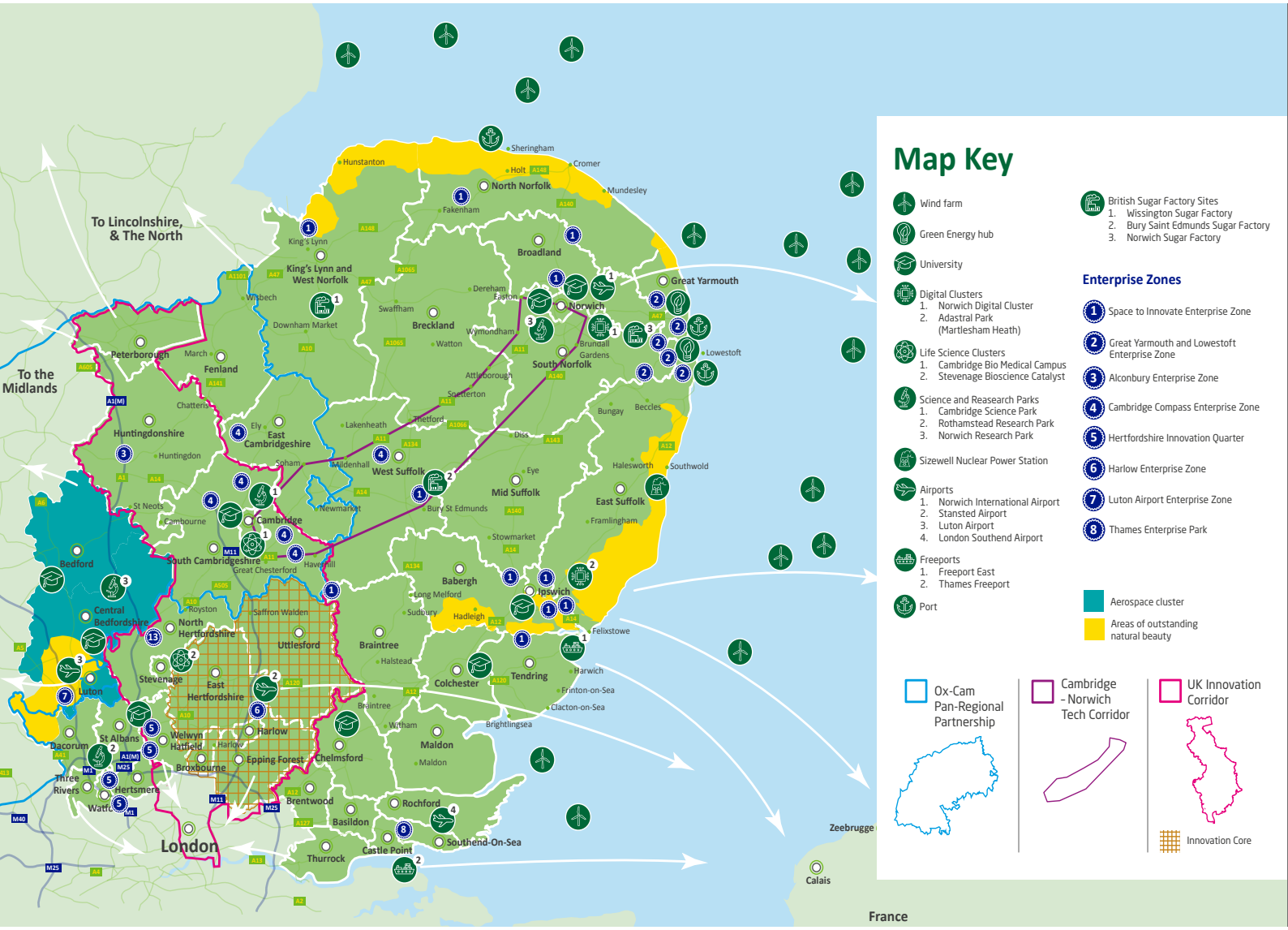
[4] ONS, Mid-Year Population Estimates, England and Wales, June 2022

We are leading the way in other national priority areas, including clean energy as highlighted by Sizewell Nuclear Power Station and some of the largest offshore wind farms in Europe, and advanced manufacturing businesses spread through the region. In many cases, our high value service sector is anchored by a university, including in Norwich, Ipswich, Colchester, Chelmsford, Peterborough, Luton and Hatfield.

Our universities are at the forefront of research, including the new Early Cancer Institue and Whittle Laboratory Centre for net zero aviation and energy at Cambridge university. Further examples include the Tyndall Centre for Climate Change Research at the UEA, the Institute of Public Health and Wellbeing at the University of Essex, and the Digital Futures Institute at Suffolk. These are joined by the Institute for Research in Applicable Computing at Bedfordshire, the Centre for Autonomous and Cyberphysical Systems at Cranfield, and the Animation School and Centre for AI and Data Innovation at the University of Hertfordshire.

The region is also essential as an international gateway, acting as a hub for trade as the home to two Freeports - Thames Freeport and Freeport East, and four major airports[5], including Stansted and Luton, which have the fourth and fifth highest passenger volumes of any major UK airports[6].

Figure 2: The East of England[7]



5 London Southend, London Stansted, London Luton, Norwich

6 Department for Transport, Air Traffic by operation types and airport, United Kingdom 2012 to 2022

7 EELGA, A Prospectus for Sustainable growth in the East of England, 2021

The East of England contains a mix of places. To the West, we have a number of small cities/large towns that are heavily connected to London, forming the backbone of the London commuter belt. These are interspersed with more rural and coastal areas stretching along Essex, Norfolk and Suffolk to the east. The region is less densely populated than the rest of England, with 335 residents per square kilometre[8] compared to 438 across England, with areas to the west tending to be more densely populated than those to the east in more coastal areas, illustrating the diversity of place there is within the region, and some of the varying experiences people face.

Our coastline is important not only in terms of the opportunities this provides to be at the forefront of national developments in renewable energy and advanced logistics, but to our regional identity and beauty of our region. Further encapsulating this is the Broads National Park, Britain's largest protected wetland and our Areas of Outstanding Natural Beauty (AONB) - Suffolk Coast & Heaths, Dedham Vale, Norfolk Coast, and the Chilterns, which are crucial in supporting our quality of life and pulling visitors to our region. The visitor economy is a major source of employment in our region, with our varied landscape, unique towns and cities, culture, and sporting events including Newmarket, the home of horse racing, key draws for visitors.

Residents generally enjoy a good quality of life in the East of England, and the region is less deprived as a whole compared to much of the country. However, when examined in detail by the APPG, EELGA and partners last year, it was found that for five of the Government's targets for levelling up – health, education, skills, transport and affordable housing – there was low confidence that they would be achieved. Meanwhile, recent cost of living pressures have intensified the challenges some are facing, particularly those in some of our more rural and coastal areas where we know there were already significant pockets of deprivation before recent cost of living rises.

Growth and levelling up requires inclusive and sustained growth based on innovation and investment. In some parts of our region, devolution is helping to deliver greater local control and investment, but it is important that those areas without formal deals are not held back, whilst ensuring that further steps towards devolution across the region are taken.

Whilst recognising the diversity across the East of England, this report will focus on the region as a whole. Nonetheless, much of what is discussed is shared by the constituent parts of the region, albeit to different extents.

[8] ONS, Mid-Year Population Estimates, England and Wales, June 2022

5 Our economic contribution

The UK economic growth and productivity puzzle

The UK is in a challenging economic position, having formally entered into recession at the end of 2023. Growth was sluggish over the course of last year, with the economy only growing by 0.1% in 2023, as weak as it has been since 2009, excluding the Covid period. The figure below puts this in context with leading international economies, showing the stark reality that the UK economy is the second slowest growing compared to pre-pandemic levels. Although the Office for Budget Responsibility (OBR) expects growth to pick up over the reminder of 2024, as interest rates are expected to fall, growth is only expected to reach 0.8%.

Productivity is a key enabler to improving living standards over the long term and is a key piece in the puzzle in boosting the economy. Historically, productivity has risen by around 2% year-on-year in the UK over the five decades before the 2008 financial crisis, but since then productivity gains have remained subdued, as evidenced in the below figure. GDP per hour in the UK had grown by 26% up to Q2 2008 compared to the start of 1997, however since then has remained below the 2% historical productivity growth trend line.

Our region can help support the UK to address this growth and productivity challenge. The UK urgently needs more economic growth and the East of England can deliver this as a growing and productive economy, which is leading in several innovation sectors and clusters.

Figure 3: G7 real GDP growth compared to pre-pandemic levels (Q4 2023 compared to Q4 2019)[9]

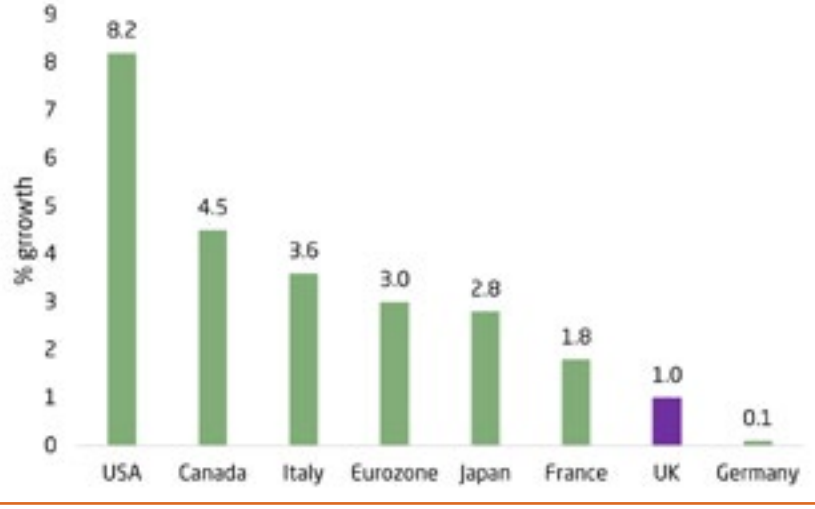
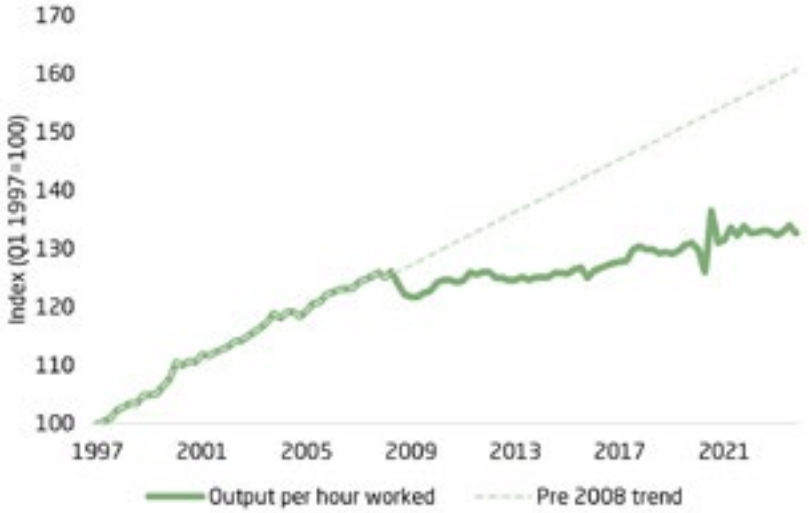


Figure 4: Output per hour worked, UK, Index (Q1 1997 = 100)[10]



[9] House of Commons, GDP - International Comparisons: Key Economic Indicators, February 2024

[10] ONS, Productivity flash estimate and overview, UK: Q4 2023 and Q3 2023, released 2024

East of England economic contribution

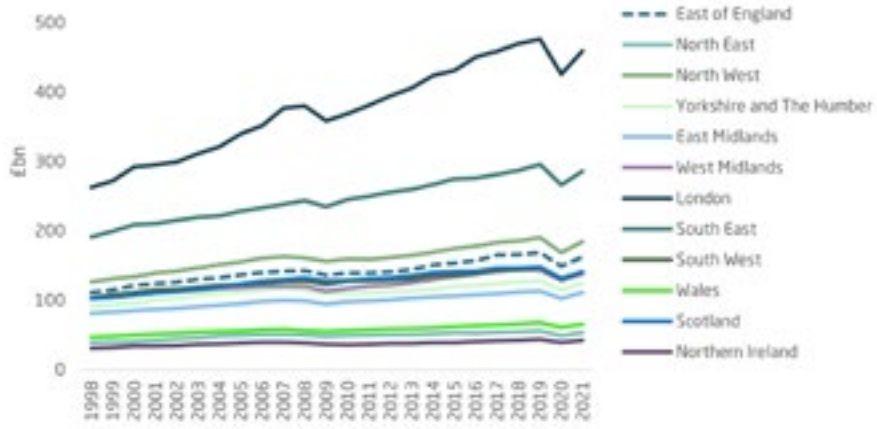
Economic Output (GVA)

The East of England continues to be a strong driver of the national economy, consistently the fourth largest contributor to the UK economy behind only London, the South East and North West, all of which have significantly higher populations than the East of England.

In 2021, the economy in the East of England had grown to £163bn, representing 11% of the UK economy excluding London. To put this in context, this is more than the combined contribution of the Greater Manchester and West Midlands Combined Authorities of £141bn[11].

As can be seen from the below chart, there were two periods where economic growth fell across all regions. One being around the time of the 2008 financial crisis and the other being in 2020, as a result of lockdowns imposed by the Government to try and curb the spread of Covid-19. Although the economy in the East of England has not quite returned to pre-Covid levels, the economy has bounced back in line with the UK average.

Figure 5: GVA by region (1998-2021)[12]



Tracking economic growth over a longer period shows that growth in the East of England has been relatively strong compared to other UK regions. Since 1998, the economy has grown by 46%, among the highest across the UK and in line with growth across the North West and South East, and behind only London. The capital remains integral to the overall success of the national economy and an obvious driver of national economic growth, as evidenced in the figure below. If we compare the East of England with the UK average without London, we can see that our region has grown strongly, at 46% compared to 36% across the UK excluding London since 1998.

Figure 6: GVA growth by region (1998-2021)

[11] ONS, Regional gross value added (balanced) by industry: city and enterprise regions, released 2023

[12] ONS, Regional gross value added (balanced) by industry): all International Territorial Level (ITL) regions, 2021

Tax revenue

The East of England is also one of the highest contributors to UK Exchequer, with the region consistently contributing around 9% of total tax revenue received by Central Government since 2000. Latest estimates for the East of England report total revenue of £86.7bn in 2021/22; 9.5% of total revenue received by central Government. This equates to £13,665 of tax revenue per person, the third highest behind only London and the South East.

Figure 7: Tax revenue per capita by region (2021/22)[13]

[13] ONS, Country and regional public sector finances, UK: financial year ending 2022, released 2023

Exporting

Our region is essential for trade, not only as an international gateway (see Section 6, below), but also in terms of the goods and services we trade internationally. Most recent full year data for 2022 for trade in goods shows that the East of England recorded over £33bn in goods exports, accounting for 8.9% of total UK goods exports, behind only London, the South East and Scotland. Trade in goods made up 56% of total exports in the East of England. Provisional data up to Q3 for 2023 reports a similar story.

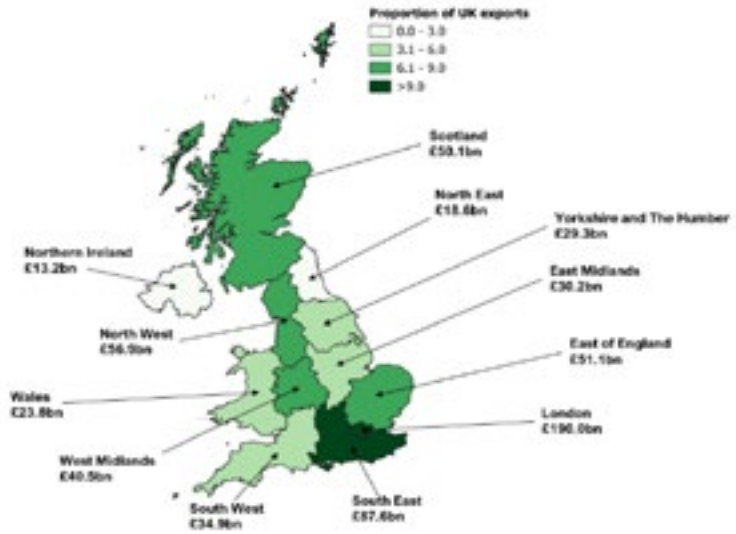
There are a wide range of sectors where the East of England made a significant contribution to national goods exports; 22% in transportation, storage, accommodation and food service activities (including our food production sector), 17.5% scientific and technical activities (this category includes life sciences and technical products), 14.1% in information and communication (i.e. digital goods exports), and 10% in manufacturing.

Service exports totalled £22.4bn in the East of England, making up 7% of the UK total. Manufacturing is one area which contributes highly to the region's services e ports, making a contribution of 16.2% to total UK manufacturing service exports, above traditional manufacturing areas of the West Midlands and North West. Service exports in the East of England in real estate and professional, scientific and technical activities also accounted for over 10% of the sector total across the UK.

Combining trade in goods and services, the East of England accounted for £51.1bn worth of exports in 2021, the fourth highest across the UK and one of only four regions where total exports had returned to pre-pandemic levels[14].

Figure 8: Proportion of UK goods exports (2022)[15]

Figure 9: Total exports by region (2021)[16]



[14] The others being London, the North West and Scotland

[15] HM Revenue & Customs, UK regional trade in goods statistics: Q3 2023, released 2023

[16] Department for Business and Trade, UK trade in numbers, 2024

Productivity

Not only does the East of England make an important economic contribution to the national economy, our workforce is also one of the most productive in the UK. Using GVA per hour as a proxy for productivity, the East of England was the third most productive region excluding London in 2021. At over £36 per hour, productivity in the East of England stands at 1.5% above the UK average excluding London, and one of only three regions where this is the case. This emphasises the importance of the East of England in helping to drive growth and productivity nationally, especially given the 'productivity puzzle' facing the UK since the start of the financial crisis.

Figure 10: Difference in GVA per hour to UK excluding London by region (2021)[17]

Using another metric for productivity, output per job, reiterates the East of England's relatively strong productivity levels. In 2021, output per job was over £56,100 in the East of England, the third highest of all regions excluding London and 1.6% above the UK average excluding London. Again, the East of England was one of only three regions with a higher output per job than the UK average excluding London.

Figure 11: GVA per job per region (2021)[18]

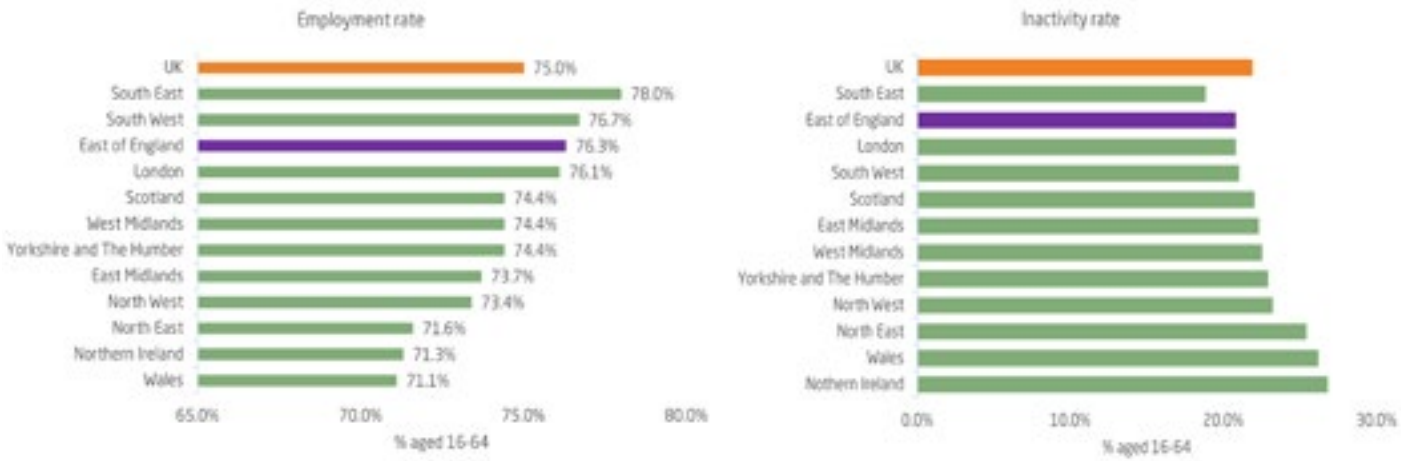
[17] ONS, Regional labour productivity, UK: June 2023

[18] ONS, Regional labour productivity, UK: June 2023

Employment and wages

There are three million people in employment across the East of England, 76.3% of the working age population. The employment rate in the East of England is amongst the highest across the country, despite a slight fall over the last year. The rate of economic inactivity also compares well in the East of England – at 20.8% this is amongst the lowest rates of the working age population who are neither working nor looking for work.

Figure 12: Employment and economic inactivity rates by region (October to December 2023)[19]



Earnings continue to be amongst the highest in the UK as shown in the figure below. In 2023, annual median earnings in the East of England were £36,400, the third highest across the UK and 4% above the UK average.

Figure 13: Difference to UK median annual earnings by region (2023)[20]

[19] ONS, Labour market in the regions of the UK: February 2024

[20] ONS, Annual Survey of Hours and Earnings, 2023

Innovation in the East of England

Innovation is another crucial enabler to drive economic growth by fostering the development of new industries, products and/or services. Evidence shows that firms that pursue innovation as a strategic approach have higher growth potential than those that don't[21]. Therefore, innovation is crucial in overcoming the national challenges we are facing to bring further growth nationally, but also to remain competitive internationally.

Looking at Research and Development (R&D) expenditure by region shows that the East of England is leading the way in innovation adoption across the UK. R&D expenditure in the East of England totalled £6.9bn in 2019, making up approximately 18% of total R&D spend in the UK. This equates to £1,106 per person, higher than the UK average by over £500 and the highest amongst all UK regions including the South East and London.

Figure 14: R&D expenditure per person by region (2019)[22]

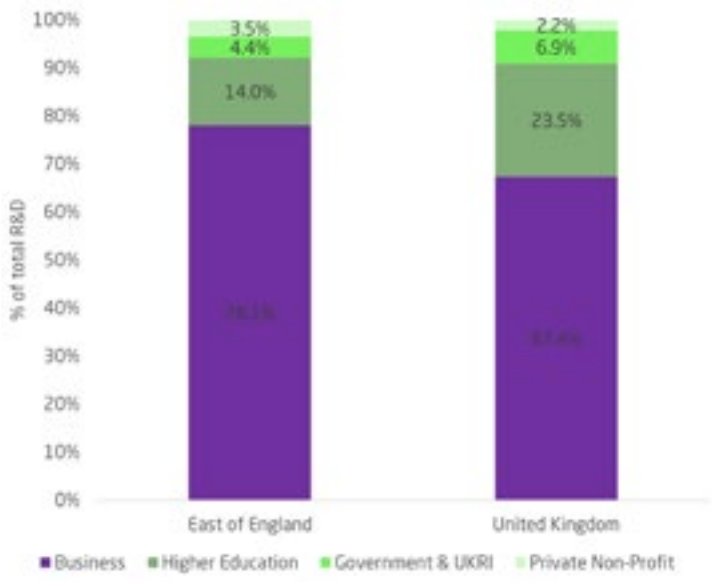
Breaking this down by sector of performance reveals that R&D expenditure was dominated by business investment, accounting for almost 80% of total R&D in the East of England, and significantly higher than the UK average (where the business percentage of overall R&D expenditure was approximately two-thirds)[23]. The East of England had the highest business R&D expenditure of all UK regions, equating to £863 per person, over double the UK average.

[21] Intellectual Property Office, Innovation and Growth Report 2022/23

[22] ONS, Gross domestic expenditure on research and development, by region, UK, released 2021. ONS, Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2019, released 2022

[23] ONS, Gross domestic expenditure on research and development, by region, released 2021

Figure 15: R&D by sector, East of England and UK (2019)[24]

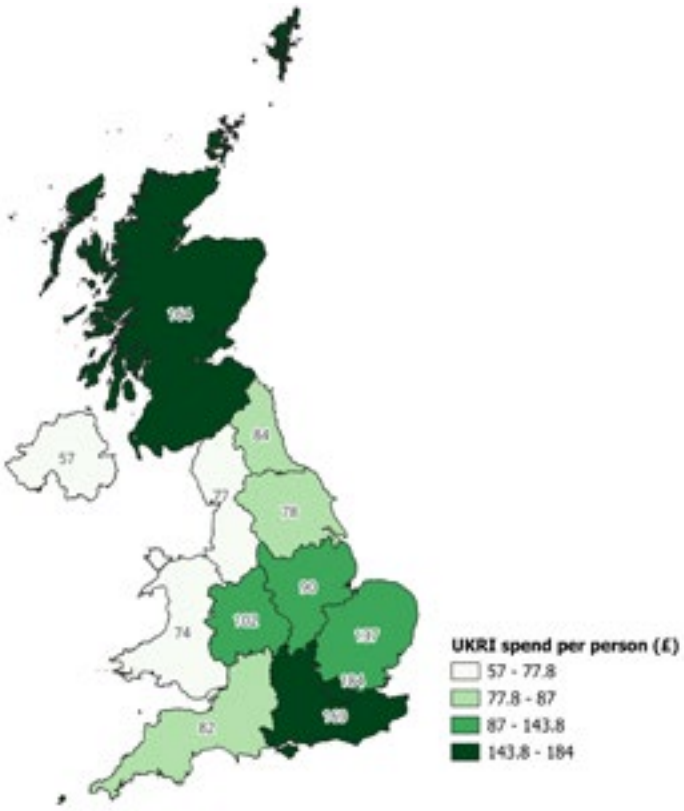


Both higher education, and government and UK Research and Innovation (UKRI) funding made up a smaller proportion of total R&D spend in the East of England, but expenditure per person was higher in the East of England at £155 and £49 respectively - the third highest for both education, and government and UKRI funding across the UK.

UKRI is the UK's largest public funder of research[25], bringing together seven Research Councils, Innovate UK and Research England funds to support research and innovation adoption across the country.

In 2020/21, the East of England received £821m total UKRI funding equating to £137 per person, above the £119 per person average across the UK. This was the fourth highest funding per person behind London, the South East and Scotland as shown in the map below.

Figure 16: Combined UKRI and devolved administrations R&D total by local population, £ (2020/21)[26]



These funds have undoubtedly helped to unlock private sector investment in the region, helping to contribute towards a high performing, productive economy - showing what the region can achieve when it is backed. As we will see in Section 9, this a relatively unusual situation where the East of England has received more funding than the national average. It is instructive to consider how this investment is linked with significantly higher rates of private investment, and suggests that Government investment can be instrumental in unlocking wider investment and success.

Using our strong foundation, the East of England can play a leading role in achieving goals set out in the National Innovation Strategy which will ultimately help to create economic prosperity. Already a leader in life sciences, agri-tech, and clean energy and technology, further advances in the East of England will help the UK become a science superpower by 2030 and achieve leadership in engineering biology, quantum and Artificial Intelligence (AI), which are key national priorities in the Government's Innovation Strategy for our security and prosperity[27]. The next section explores these sectors more closely.

[24] ONS, Gross domestic expenditure on research and development, by region, released 2021

[25] UKRI, Geographical Distribution of UKRI spend FY2019-20 and FY2020-21, released 2021

[26] UKRI, Geographical Distribution of UKRI Spend, FY 2019-2020 and 2020-2021, released 2021

[27] GOV.UK, UK Innovation Strategy: leading the future by creating it, 2023

East of England key sectors

For this analysis we have drawn from two sources:

1. Employment estimates across the region by sector using ONS Standard Industrial Classification (SIC) codes. Headlines are presented here, with greater detail in the appendix.
2. Statistics from Data City, a platform which uses web-scraping to gain more detail about companies based on information on their company website. This provides a more detailed and granular perspective on sectoral strengths.

Broad sectoral trends

Looking first at the ONS data, we can see that wholesale and retail, health and social care, and administrative and support service activities are the largest employing sectors in the East of England, all employing at least 10% of the workforce. Wholesale and retail, and administrative support both have higher proportions of employment compared to the UK average.

Employment is fairly spread among remaining sectors, reflecting the varied nature of our economy and how many sectors combine to make a vital contribution. We have well known strengths in a number of areas including construction, logistics, the visitor economy and agriculture.

Our construction sector is crucial to the national economy, representing 13% of total employment across the UK, employing over 200,000 people in 2022[28]. It is also one of our fastest growing sectors, with employment rising by almost a quarter over the last five years to make up 7% of total employment – above the 5% national share, helping explain why this is one of area of local specialism.

Logistics is another important local employer given our two Freeports and four national airports. Across the wider transport and storage sector, the East of England accounts for over 10% of UK employment. Port related activities are a particular speciality, with the region accounting for almost 20% of cargo handling employment nationally and service activities related to water transport. Employment is fast growing within the overall logistics sector having grown by 15% and is set to grow further with developments around our two Freeports.

Our visitor economy is valued at £10bn a year and is one of the largest employing sectors in the region[29], employing around 220,000 people. Our diversity in place is key to our offer, with our Areas of Outstanding Natural Beauty and the Broads National Park, mixed with our unique towns and cities, attracting more than 160 million day trippers a year and close to 10 million staying visits.

Agriculture is another important sector for the East of England economy. Although the sector only employs 1.7% of the total workforce, we are a major source of food production and the highest contributor to total farming income across England. Employment is particularly concentrated in the Fens, Norfolk and Suffolk.

[28] ONS Annual Business Register and Employment Survey (2022)

[29] Visit East of England, Destination Development Plan for the East of England, 2021

High technology sub-sectors

Using ONS SIC codes does not fully capture our innovation strengths, as these classifications do not provide detailed statistics on many of our key technology sectors such as digital, life sciences and renewable energy, to name but a few.

To get a better sense of our innovation strengths, we have used the Data City platform to gather insights on business activity across the East of England by analysing their SIC code alternatives – 'Real Time Industrial Classifications' (RTICs). These classifications collate and analyse business data focusing on emerging and innovative sectors by using web scraping and machine learning technology to understand the activity and sectors they are involved in based on their own keywords and business demography[30]. This allows us to capture the innovation and high productivity which exists in the region sometimes in sectors, sometimes as pockets of high value activity.

10.2% of all UK companies listed on the Data City are located in the East of England, but many emerging sectors have a significantly higher proportion of businesses in the region[31], including life sciences, agri-tech, digital, clean tech and advanced manufacturing and engineering.

Life sciences is another area of strength, highlighted by a high concentration of businesses within omics [32]. This includes many large companies, with 22 businesses estimated by the Data City to have over 100 employees, notably LGC group, Abcam plc and Genome Research Limited. Engineering biology is an area of strength within life sciences, with major employers including GSK, AstraZeneca and Hewlett Packard each having locations in the East of England[33].

Within **agri-tech**, the region accounts for half of UK businesses in precision farming, underlining the region's capabilities to adopt new technologies within our already established strength in agriculture. We have strong clusters of technology businesses across the region, with a particular strength in central processing units, with over three quarters of UK companies within this sub-sector located in the East of England. Notable companies in this sub-sector include Arm technologies, a global leader in CPU technology and Myrtle AI, both based in Cambridge.

Also linked to our **digital** strength is our developing space cluster in the East of England. Stevenage lies at the centre of the cluster as the base for Airbus. Airbus recently opened a new £35m space and defence headquarters in Stevenage, Orbit House, which will be home to 500 space engineers and experts. Further developments in the East space cluster include a Space Enterprise Lab recently opening at Adastral Park. There is a strong concentration of **clean tech** businesses located in the region, complementing our clean generation assets. **Advanced manufacturing and engineering** is another area where we have a strong business presence in the region, adopting emerging techniques and technology to improve efficiency and production. **Creative industries** are spread through the region with links to our digital strengths.

Drawing this together, along with evidence conducted by regional partners and via stakeholder engagement, life sciences, agri-tech, digital technologies, clean tech and advanced manufacturing have come out as strong emerging areas of speciality in the East of England. This also aligns neatly with national priority sectors, and the creative sector particularly, which is linked to digital services and continues to grow in our region. Using the Data City platform, we have mapped these sectors to show the spatial concentration of businesses in the region to show where there are clusters of activity and to provide additional insights of areas of specialisation within these sectors.

[30] This however only provides a snapshot of businesses, analysing only those which have a website which is approximately 30% of the UK business base, though likely to be higher for high technology firms compared to lower technology businesses. The Data City platform was used to inform the mapping of UK innovation clusters work, produced by the Department for Science, Innovation and Technology (DSIT) that went live in February 2024

[31] For a full list of sub-sectors (sub RTICs) with high business concentration in the region, refer to the appendix

[32] Data City defines the 'Omics' RTIC as 'Companies aiming at the collective characterisation and quantification of biological molecules that translate into the structure, function, and dynamics of an organism'

[33] Company information provided by The Data City, 2023

Life sciences

In total, 3,226 life science businesses are located in the region, making up 15% of all life science companies in the UK[34]. This is higher than our proportion of total UK businesses (10%), demonstrating our relative level of specialisation within life sciences.

Unsurprisingly, Cambridge is an important part of this story as a global 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 Babraham Research Campus, 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 AstraZeneca. Cambridge is also home to operations of Amgen and Oxford Nanopore Technologies, both of which have some of the highest market shares in biotechnology[35].

However, as the map below demonstrates, life sciences companies are spread throughout the region including Stevenage, Norwich and Harlow, as well as clusters along key transport corridors. The map shows all life science businesses located in the region, with larger points representing postcodes which contain more than one life science company, often demonstrating business and research parks including Cambridge Science Park, Granta Park, Stevenage Bioscience Catalyst and Norwich Research Park. Whilst the map shows heavy concentrations of life science companies in key towns and cities, life science activities often follow existing corridors, with many companies located along the A1, A11 and A14, two of which connect Cambridge to Ipswich and Norwich, as well as concentrations in South Essex and South Hertfordshire.

Figure 17: Life science companies in the East of England[36]

Note: The size of bubble represents the number of companies registered on Data City located in the same postcode. The larger the bubble, the higher the number of businesses.

[34] The Data City, 2023

[35] IBIS World, 2024

[36] The size of bubble represents the number of companies registered on Data City located in the same postcode

Stevenage is a key player nationally as the home to the UK's largest Cell and Gene Therapy cluster. The Stevenage Bioscience Catalyst is at the heart of this as the UK's first Open Innovation Bioscience Campus. It is co-located with GlaxoSmithKline's UK R&D facility and home to The Cell and Gene Therapy Catapult which is aimed at bridging the gap between scientific research and full-scale commercialisation within cell and gene therapy. Further cementing Stevenage's position as a leader in advanced therapies, plans have recently been unveiled for a £900m life science campus. Elevate Quarter will create up to 5,000 new jobs, providing 1.6 million sq. ft of lab, office and Good Manufacturing Practices (GMP) facilities, and will be located alongside GSK's existing R&D facility and Stevenage Bioscience Catalyst, and incorporate the Cell and Gene Therapy Catapult. Also located in Hertfordshire, BPL Therapeutics in Elstree houses BPL's group headquarters and its manufacturing, quality, R&D, finance and commercial operations, and Cancer Research laboratories at Clare Hall in South Mimms.

The University of Essex's Knowledge Gateway in Colchester is a key innovation asset with expertise in molecular biology and plant physiology as well as an innovation centre providing grow-on space for knowledge-based science and technology start-ups. Harlow is an established centre for R&D, with Harlow Innovation Park hosting businesses focusing on science and technology including Charles River, Teva Pharmaceutical Industries and Clement Clark. Harlow will host the UK Health Security Agency's £400m national science hub, which is anticipated to generate significant supply chain opportunities. Also in Essex, Braintree is home to a Cell and Gene Therapy Catapult Manufacturing Innovation Centre, which through cutting-edge therapies will increase the UK's ability to respond to diseases and pandemics.

Norwich has a dense concentration of health research, including Norwich Research Park located next to the University of East Anglia. The Park brings together several important health centres. The Norfolk and Norwich University Hospitals NHS Foundation Trust, which hosts the Norfolk Clinical Research Facility, accredited by the National Institute for Health and Care Research, undertakes research to drive forward health innovation through experimental medicine and translational research. This is located alongside four independent world-leading research institutes including the John Innes Centre and The Sainsbury Laboratory, focused on food and plant health, the Quadram Institute an interdisciplinary food, microbiome and health research centre, and the Earlham Institute bringing expertise in genomics, bioinformatics and molecular biology.

The region as a whole is relatively specialised in life sciences, and within the sector, we have a number of areas where we are particularly strong. Firstly, in omics[37], we have a third of total UK businesses. Biotechnology and pharma also are strong, with around a quarter of UK businesses located in the East of England driven largely by the location of major pharmaceuticals such AstraZeneca and GSK, as well as firms like Bupa. Synthetic Biotechnology industries are also estimated to be growing strong. There is a strong crossover between these sub disciplines, with major businesses including Illumina, LGC, Abcam, STEMCELL technologies, SPT Labtech, Novogene, and Rothamsted research.

[37] Data City defines the 'Omics' RTIC as "Companies aiming at the collective characterisation and quantification of biological molecules that translate into the structure, function, and dynamics of an organism"

Agri-tech

The East of England is home to 338 agri-tech related businesses[38], 20% of such businesses in the UK, demonstrating a strong level of specialisation. This aligns with our regional strengths in the wider agriculture sector (see Section 6). It also reflects our strong research institutions, with the region being home to five of the eight national BBSRC research institutions, leading research in food and plant science and microbiology.

The map below demonstrates that whilst there is some clustering of agri-tech businesses in urban areas such as Cambridge, Norwich and Ipswich, agri-tech businesses have a strong presence across all areas in the East of England. Notable agri-tech businesses in the East of England are Frontier Agriculture, Hutchinsons, Rothamsted, British Sugar and Syngenta. Trimble Inc, headquartered in Ipswich, is highlighted as one of the top companies in agri-tech, providing software that supports systems and services relating to land preparation, planting, seeding, nutrient management and fertilising, crop protection and spraying, harvesting and water management[39].

Figure 18: Agri-tech businesses in the East of England[40]

Note: The size of bubble represents the number of companies registered on Data City located in the same postcode. The larger the bubble, the higher the number of businesses.

Precision Farming is a particularly specialised field within agri-tech in the East of England, playing host to half of all businesses in the UK including Hutchinsons, Agri-tech Services, NIAB and Agrii. Agri-tech in the net zero supply chain also has a strong base in the East of England, reflecting the presence of our leading research assets in agri-tech, including those in Norwich Research Park and Rothamsted Research. We are also home to a strong concentration of businesses adopting modern agricultural methods, including remote sensing, drone technology and vertical farming – such as SMARTKAS in Harlow and Fischer Farms in Easton. All of these technologies will be crucial tools in the future of food production.

The Eastern Agri-Food Innovation Launchpad is an example of how we are stimulating new technology and innovation in this sector. A partnership between Cambridgeshire and Peterborough Combined Authority, New Anglia LEP, Greater Lincolnshire LEP and Innovate UK, the £7.5m programme provides grants to entrepreneurs and innovators for innovation projects that focus on driving productivity across agriculture, horticulture and aquaculture, delivering quality food production through food manufacturing and processing, as well as creating novel food production systems.

[38] Note: agri-tech does not encompass the whole of the agricultural sector – although clearly many agricultural businesses in the region are increasing their use of technology. Instead 'agri-tech' refers to firms offering goods and services which apply technology to agricultural sector challenges, as well as food production companies.

[39] IBIS World, 2024

[40] The Data City, 2023. The size of bubble represents the number of companies registered on Data City located in the same postcode

Our research institutions play an important role in this sector. Rothamsted have multiple locations across the East of England in Hertfordshire, Suffolk and Bedfordshire. Their campus in Harpenden in Hertfordshire is one of the oldest agricultural research institutions in the world and is a hub for agricultural research across the Grade 1 listed Russell Building, Lawes Innovation Hub and Daniel Hall Building, offering 22 offices and 9 laboratories across the agri-tech centre.

Cranfield in Bedford is a specialist postgraduate university and is one of the leading UK universities in research impact in agriculture, food and veterinary science. Cranfield Environment Centre provides leading expertise in key fields of data sciences and informatics, and the Centre for Soil, Agrifood and Biosciences has internally recognised expertise across both domestic and international food supply chains, from soil science to postharvest quality. Also located in Bedfordshire, Colworth Park just outside Bedford is at the forefront of food and drink development with global leaders such as Unilever, Firmenich, Symrise and Kerry Ingredients coming together with academia and SMEs to drive R&D and commercialising research into innovative products.

As we have already touched upon, Norwich Research Park draws together many important assets including the John Innes Centre, an independent, international centre of excellence in plant science, genetics and microbiology, working on projects such as Delivering Sustainable Wheat, which aims to enhance wheat production sustainably whilst improving its nutritional benefits.

The Sainsbury Laboratory is at the forefront of food and plant science research, creating solutions to prevent crop losses due to plant diseases. Research topics at the laboratory include plant disease resistance genes, plant and pathogen genomics and biotechnological approaches to crop disease resistance. The Quadram Institute is leading on food research, compiling and publishing data on the nutritional composition of foods eaten in the UK, and along with partners at the John Innes Centre, is exploiting new advances in crop genomics to develop new varieties with enhanced nutritional qualities.

As part of the UKRI Infrastructure Fund in June 2023 it was announced that more than £317m is set to be invested at the Norwich Research Park to fund the development of a plant and microbial science and innovation hub, which also aims to become a net zero carbon laboratory. This will provide new cutting-edge, world-class facilities for the John Innes Centre and The Sainsbury Laboratory. The Essex Plant Innovation Centre at the University of Essex has created a state-of-the-art indoor crop growth facility STEPS (Smart Technology Experimental Plant Suite), which comprises of four unique environmental growth rooms to further research key plant processes.

Another important regional asset is the Broadland Food Innovation Centre; a business hub for new and growing food and drink enterprises, providing 13 food-grade premises including a sensory tasting facility, test kitchens and meeting facilities, allowing a greater number of small businesses to operate without needing their own premises, helping to accelerate their growth plans.

The Agri-EPI Centre in Cranfield in Bedfordshire is another example of an innovation asset, having been established using part of a £17.7m UK Government investment from the UK's Strategy for Agricultural Technologies to help provide engineering and precision agriculture solutions for the agri-food industry. By bringing together leading organisations in all sections of the supply chain, it will become a world-leading centre for excellence in engineering and precision agriculture to benefit the livestock, arable, aquaculture and horticulture sectors. The core partners in the centre are Harper Adams University, Scotland's Rural College (SRUC), Cranfield University, Harbro Ltd, Ag Space Agriculture Ltd and Kingshay Farming.

The new Agri-EPI building at Harper Adams University is designed to accommodate research and development projects for consortia that will, in most cases, include both industry and academic partners. The building has been designed to cope with a range of activities from traditional engineering to robotics, automation, laser technology, sensor development and software development.

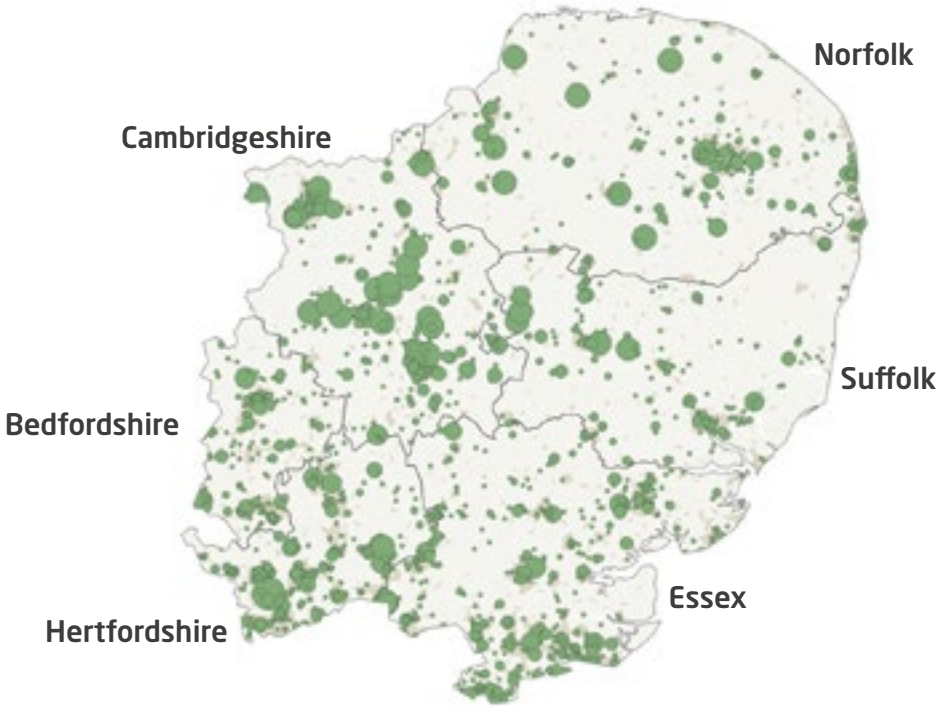
Related to agri-tech is our marine sector, which includes 7% of the UK's aquaculture businesses, but also links to the offshore energy sector and advanced manufacturing. Our marine sector is supported by the presence of the Centre for Environment, Fisheries and Aquaculture Science (Cefas) – the Government agency for marine and freshwater science, which has been located in Lowestoft since 1902, as well as expertise in many of our region's universities. The wider marine sector includes companies such as Fender Care Ltd, Benethnic Solutions, Marine Space and Sealite.

Net zero

In total, 3,103 businesses in the East of England provide services or products which support net zero. There are major clusters along the east coast reflecting strengths in offshore wind and supply chains, but there are activities related to net zero occurring in all parts of the region, including the Tyndall Centre for Climate Change Research at the UEA, which represents a substantial body of the UK's climate change expertise.

The East of England is home to 13% of all businesses within the net zero field, showing our important contribution to the clean energy supply chain as well as our important energy generation assets, which we will explore further in the next section of the report.

Figure 19: Net zero companies in the East of England[41]



Clean energy generation is a particular strength in the East of England, with the 1,078 clean energy businesses across the East of England accounting for 14% of total UK businesses. The East of England's geography makes it a strong location for offshore wind energy generation, with its shallow waters and high wind speeds in the North Sea ideal locations for wind farms.

The region accounts for a quarter of the UK's offshore wind generation, with OEG Global, Venterra Group and Stapem Offshore each having wind farms in the East of England. Orsted Power has invested over £9.5bn in the UK [42] and operates two wind farms off the coasts of Essex and Norfolk. RWE AG has the second highest market share of wind power generation companies in the UK (22.5%), operating over 2.1GWs of renewables[43]. RWE has a strong base in the East of England, where four of the company's 10 wind farms are located, with over 1.5GW of installed capacity, and a further two wind farms are being developed [44]. Our regional strength in offshore wind generation is only expected to increase as Scottish Power aims to transform East Anglia into a world leader, with the development of four offshore wind farms, expected to deliver a combined capacity of more than 3.6GW[45].

[41] The Data City, 2023. The size of bubble represents the number of companies registered on Data City located in the same postcode. Due to the web-scraping methodology used by the Data City, companies within the Net Zero RTIC, may include those who claim to contribute to the Net Zero economy more than in reality. More detail on how the Data City platform works can be found in the annex

[42] IBIS World, 2024

[43] IBIS World, 2024

[44] RWE, 2024

[45] IBIS World, 2024

Figure 20: Clean energy generation companies in the East of England[46]

The related offshore wind supply chain is also strong, with offshore wind businesses in the region accounting for almost a quarter of total offshore wind UK businesses, with notable clusters along our coastline in Lowestoft and Great Yarmouth with businesses such as Eastern Edge, OEG, Cadeler, ODE Asset Management, Marex, Mactech Energy Group and Oceanscan. But as the map above shows there are many additional companies performing clean energy generation activities in our region, notably in areas such as South Essex, Hertfordshire and along the M1 corridor.

Harwich is well-established in offshore wind and has related businesses in maritime, logistics and engineering for clean energy. Further developments as part of Freeport East and the proposed separate Green Energy Hub at Bathside Bay, as well as anticipated growth in clean fuels like green hydrogen create further opportunities for Harwich to establish itself as a clean energy leader. A proposed £10m clean energy innovation hub[47] would further help cement Harwich's clean energy credentials, bringing together start-ups, researchers and industry to collaborate to drive innovation and investment in clean energy solutions, following a similar model to OrbisEnergy in Lowestoft. OrbisEnergy is a clean energy innovation and incubation centre providing office accommodation, meeting rooms and conference facilities, home to over 40 businesses both physically and virtually, providing a centre for potential investors, suppliers and utilities, as well as ambitious clean energy companies.

Renewable thermal energy generation is another highly specialised sub-sector in the East of England, with 17% of UK businesses located in the region such as RSK group and Greenscape Energy Limited, whose headquarters are located in Ipswich.

Nuclear is also highly specialised as compared to nationally, with 14% of total UK businesses based in the East of England. Our regional expertise is set to grow further as developments around Sizewell C proceed and potential proposals for Bradwell progress. Alongside Sizewell, some large companies in the nuclear field such as ATB Group and Fortum have locations in Norwich and Peterborough respectively. Further details on our clean energy generation strengths, including nuclear and its growth opportunities, are highlighted later in this report.

The East of England has specialisms in other aspects of net zero, including where there are synergies with agri-tech as previously mentioned, waste management and clean energy generation. The region's food production strength has helped support waste management activities relating to food waste and agricultural byproducts[48]. The region is home to many large waste management companies such as Biffa, Veolia Water Technologies and Mick George Recycling.

[46] The Data City, 2024. The size of bubble represents the number of companies registered on Data City located in the same postcode
[47] Opergy Group, Stimulating a Clean Energy Innovation Cluster in Harwich, Essex, 2023
[48] IBIS World, 2024

Digital technology

The region hosts 2,650 digital technology businesses, representing 12.5% of all digital-technology businesses in the UK. There is some spatial variation as companies tend to locate nearer urban centres or in business and research parks, but again there is a strong presence of digital businesses located across the East of England.

Figure 21: Digital technology companies in the East of England[49]

Adastral Park, BT's global R&D headquarters located just outside of Ipswich, is at the centre of our digital ecosystem. It is leading in research on quantum computing, cybersecurity, and is the largest patent filer in the UK for AI research[50]. Innovation Martlesham, the park's high tech business cluster, 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 SMEs and start-ups. 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 home to a varied technology sector with expertise in AI, use of drones, data and robotics. The University of Cambridge sits at the centre of this cluster, with the Cambridge cluster home to over 2,900 IT and telecoms companies[51], including home grown companies like Arm and AVEVA, alongside global giants Amazon, Apple, Microsoft and Samsung.

Cranfield University lead on 'AI-as-a-service' in 6G, linking together common needs and uses across networks; 'Green AI', in terms of lowering the carbon footprint of the overall 6G ecosystem; and more generally, leads on transportation and satellite systems.

Hertfordshire is home to a strong technology and telecoms sector, with IT companies particularly strong in computational R&D and digital media, including specialisms in security and cybercrime. Hertfordshire hosts the headquarters of market leaders such as EE, Imagination Technologies and Bank Machines Ltd.

The county also has a thriving creative industry as the home to major TV and film production companies which we will explore in more detail in our creative sector analysis.

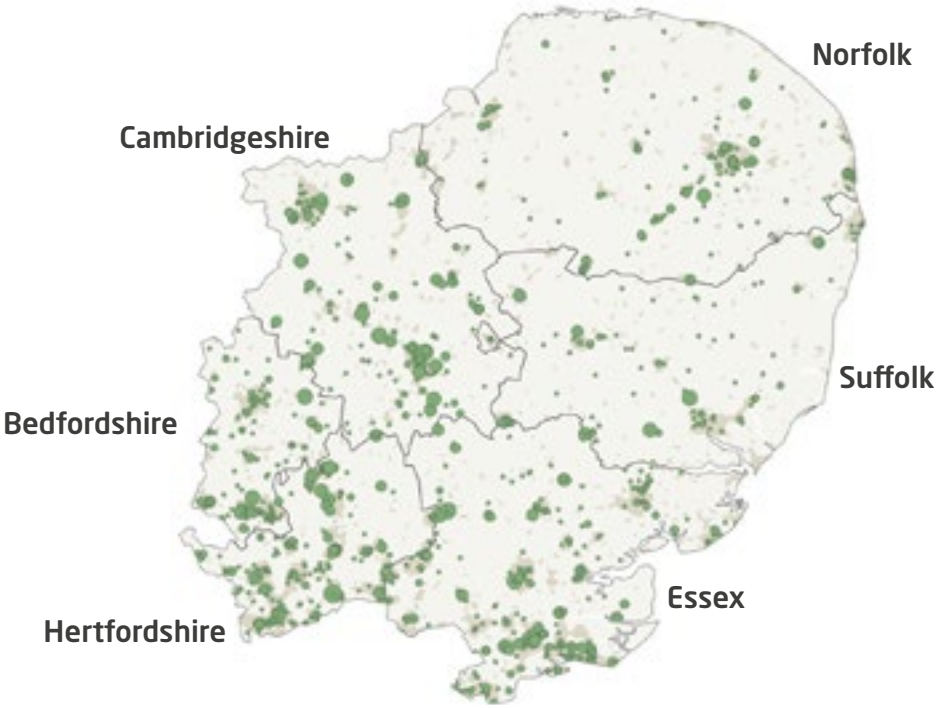
The East of England has particular specialisms in sensors and wearables, both accounting for around 17% of total UK businesses, including ION Science, Cosworth Electronics, Sagentia, Europlaz and TRUMPF. The region also hosts businesses specialising in AI and immersive technologies and software development such as Five AI, Stefanini and Imagination Technologies, while Iris and Baxter Healthcare provide software services.

[49] The Data City, 2023. The size of bubble represents the number of companies registered on Data City located in the same postcode
[50] New Anglia LEP, Local Industrial Strategy, 2020
[51] University of Cambridge, Quantifying the Cambridge Cluster, 2023

Advanced manufacturing

There are 1,510 advanced manufacturing businesses in the East of England, representing 12.5% of all such businesses in the UK. Again, as shown in the map below, there is a spread of advanced manufacturing businesses across the region.

Figure 22: Advanced manufacturing companies in the East of England[52]



Peterborough has one of the densest collections of cutting-edge manufacturers in the UK and is at the forefront of digitalisation, with businesses such as TRB Lightweight and Codem Composites. Caterpillar Perkins are one of the world's leading suppliers of off-highway diesel and gas engines and have been based in the city for more than 90 years. They employ around 4,000 people across their largest European site, which produces the 1200, 904 and 400 Series and is home to their European Research and Development Centre, the base for worldwide research and development of engines up to 7.1 litres. ARU Peterborough is a new university campus, which opened in 2022 with a significant focus on automation, digitisation and AI, and supporting cross-sector innovation. Huntingdonshire is also an important base for advanced manufacturing as the home to ABB, Hotel Chocolat and Bosch Rexroth.

Cranfield University ranks amongst the top UK universities for research impact from engineering, including capabilities focusing on advanced materials, simulation and modelling, and systems for sustainability. They include work in augmented and virtual reality, digital engineering, additive manufacturing, non-destructive testing, composite manufacture, nano-materials (graphene, coatings and sensors), thermal barrier coatings, metallic glasses and low energy casting.

Essex is home to one of the largest advanced manufacturing and engineering clusters in the country, with well-known companies based in the region such as BAE Systems, Ford Motor Company, CNH, Gardner Aerospace, Raytheon and Teledyne. Basildon is central to manufacturing in the county. New Holland tractors have been made in Basildon for over 50 years. Ford Dunton in Basildon is a global centre for the company's engine, transmission and commercial vehicle engineering and development, responsible for developing the latest low-carbon Ford powertrains. Recent expansions of their electric vehicle test laboratories include a new Propulsion Development Laboratory opening in February. Costa have also opened one of Europe's largest coffee roasteries, producing 45,000 tonnes of coffee a year. Nearby Braintree will also host one of the UK's Cell and Gene Therapy Catapult Manufacturing Innovation Centres, providing expertise and resources to accelerate the development of advanced therapy manufacturing processes.

[52] The Data City, 2023. The size of bubble represents the number of companies registered on Data City located in the same postcode

Norfolk has advanced manufacturing and engineering clusters focused on the agri-tech, energy and automotive sectors. Hethel Engineering Centre, Norfolk's advanced manufacturing hub, has provided office, workshop and hot-desking space for over 200 businesses, including supporting over 180 start-ups since opening in 2006. Hingham Enterprise Park is home to 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. Lotus' HQ is located in Hethel and includes vehicle manufacturing and research facilities, design and engineering workshops, and a private test track.

It is important to reflect the importance of the motorsport industry to our region. Silverstone, although not directly located in the East of England, presents major advanced manufacturing and engineering opportunities for businesses in the East of England, including Jaltek, a electronics manufacturer located in Luton, and ARA located in Bedford, specialising in aerodynamic research in aerospace and defence.

Stevenage is home to Airbus, putting the town firmly at the centre of the UK space industry. The Stevenage site is Airbus' HQ for satellite design, development and manufacture, contributing to the building of a quarter of the world's telecommunications satellites[53]. Stevenage is where Airbus built the ExoMars Rover ahead of the first European rover mission to Mars, and has recently opened a new space and defence headquarters which will be home to 500 space engineers and experts. Stevenage is also home to MBDA, a global leader in defence and the manufacture of missiles and missile systems. Other businesses include VIAVI solutions, delivering highly specialised test and measurement equipment and microelectronic solutions to the aerospace and defence industries, and Parker Meggitt with a specialist site for cutting-edge radome development and manufacture.

Precise Component Manufacture Ltd provides precision engineering and subcontract manufacturing services to clients in technology and R&D intensive industries. The company employs more than 100 people in three production facilities located in Cambridgeshire and Bedfordshire. The company has grown in their bio-tech segment recently due to the development of the bio medical manufacturing hub in 2020 and ongoing investment in capacity and capabilities[54].

All types of services within advanced manufacturing exist in the East of England. This covers a range of techniques; there are specialities in the processes of prototyping which has the highest proportion of UK businesses of 16%, along with cutting, machining and forming, with businesses such as Inflite Engineering, PCML Group and WCM. Other specialities linked to digital processes include computer aided manufacturing, robotics and automation and digital twins[55], with businesses including Novanta, PCE Automation and Titan Engineering.

[53] Stevenage Borough Council, 2024
[54] IBIS World, 2024
[55] Definitions for each sub-RTIC process can be found in the annex

Creative industries

Creative industries[56] in the East of England employ just under 100,000 people, and the region has many strengths within the sector. In particular, the region has core strengths in various types of publishing activities from books to software. These sub-sectors range from 37% to 67% more highly concentrated than nationally[57]. The publishing of computer games and other software have seen strong growth, averaging 25% annually between 2017 and 2022.

Cambridgeshire has become a major hub for the games industry with a cluster of organisations located in the county, including Raspberry Pi Foundation, a UK-based charity with the mission to enable young people to realise their full potential through the power of computing and digital technologies. Local business Frontier have developed games for publishers including Microsoft, Sony and SEGA, and now publish their own, while Ninja Theory, a BAFTA award-winning UK developer studio, are based in the county.

Our region has strong assets in film and TV production. Hertfordshire is home to both Warner Bros Studios and Elstree Studios, and across the county employed 17,600 people in 2015 in the creative industries, after seeing strong growth[58]. Sky is looking to expand its Elstree North studios in Borehamwood, Hertsmere – adding 10 more sound stages to attract more productions, which could deliver 2,000 more jobs locally[59]. Sunset Studios in Broxbourne has received planning permission for a film and TV studio, with groundwork across the site nearly complete. The region is also home to leading education facilities linked to the creative industry, including Elstree Screen Arts Academy, a UK centre of screen excellence educating young people in media production, arts and creative related fields. Both Norfolk and Suffolk have dedicated regional services promoting the counties as destinations for filming. Since 2016, Screen Suffolk has helped to boost production in the county, with over 1,000 days of filming and an estimated £14.5m benefit to the economy[60].

Universal Studios have plans for a new UK theme park in Bedford, having confirmed the purchase of 476 acres of land south of Bedford in Stewartby last year, with the goal of exploring a potential new park and resort experience at this site – although the idea remains at a very early stage[61]. This would require significant investment in supporting infrastructure but has the potential to bring considerable economic benefits regionally[62].

Norwich enjoys an international reputation as England's first UNESCO City of Literature and hosts a vibrant cluster of digital creative businesses including Foolproof, EPOS NOW and Further. Norwich University of the Arts with its specialism in arts, design and media is at the cutting edge of design innovation, launching innovative degree programmes such as UX design. Colchester is also home to a thriving and expanding creative, cultural and digital sector, including over 3,500 businesses as well as established leading arts organisations such as the Mercury Theatre, Firstsite, Colchester Arts Centre and Signals Media Arts. The University of Hertfordshire has specialisms in animation, animatronics and digital media. Hertfordshire alumni are often involved in world-leading games and animation companies, working on large blockbuster productions like Harry Potter, Avatar and the GTA series[63].

[56] ONS, Business Register and Employment Survey (BRES), 2024. The creative industries has been defined using the Department for Culture, Media and Sport (DCMS) definitionc

[57] ONS, Business Register and Employment Survey (BRES), 2024. Northern Ireland is excluded in the national comparison

[58] Hertfordshire LEP, Hertfordshire Opportunities Portal: Film, Media and Creative

[59] Sky Studios Elstree North, 2024

[60] West Suffolk Council, Screen Suffolk shines a light on the screen industry in the county, 22 February 2023

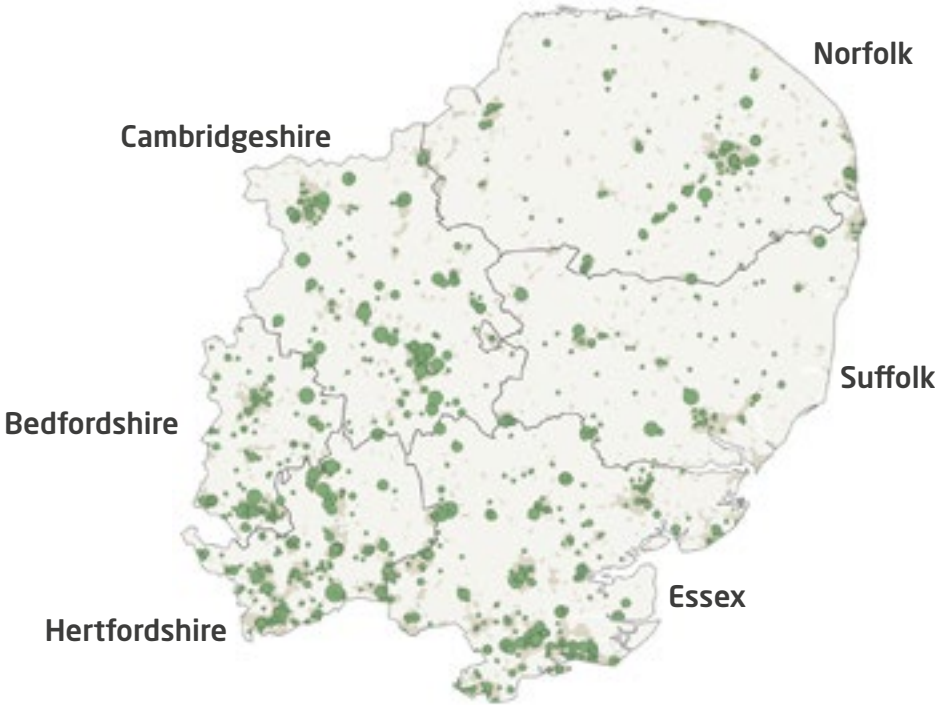
[61] Universal Destinations & Experiences, Exploring a potential theme park and resort project, 2024

[62] BBC News, Universal Studios UK: Is a theme park coming to Stewartby? 5 February 2024

[63] Hertfordshire LEP, Hertfordshire Opportunities Portal: Film, Media and Creative

The map below shows the companies listed on Data City within the digital and creative industry. The region hosts 1,128 digital and creative businesses, representing 10.6% of all digital and creative businesses in the UK. Spatially, digital and creative businesses tend to be located in urban areas. Strong concentrations exist in Hertfordshire, where nearly a third of all such businesses listed are located. Significant companies highlighted by the Data City include, Jagex a large game developer headquartered in Cambridge, Inner Production, based in Tilbury and Wise Music Group in Bury St Edmunds, Suffolk, both of which are large music production companies[64].

Figure 23: Digtial and creative companies in the East of England[65]



The region also has strong support systems in place to support creative businesses, such as Creative East, whose Create Growth Programme has helped improve investment readiness and provided business support for creative industries in Norfolk, Suffolk, Cambridgeshire and Peterborough[66], and Hertfordshire LEP now rolling out the Create Growth Programme for creative industries in Hertfordshire.

[64] The Data City, 2023

[65] The Data City, 2023. The size of bubble represents the number of companies registered on Data City located in the same postcode

[66] Creative East: The Create Growth Programme

6 Nationally important assets

We are a clean energy powerhouse, accounting for a quarter of offshore wind generation nationally, with further renewable projects in the pipeline. We are also a major food producer, with a third of the UK's grade 1 agricultural land, and are a leader in food and plant science.

Our longstanding role as an international gateway for the UK with 13 ports[67] – including two Freeports and four major airports[68] – is crucial for the national economy, supporting the movement of goods and providing international supply chains to thousands of businesses across the UK, particularly in the Midlands and the North.

Nationally, the UK's economic resilience has been tested by recent global events, driving concerns over national energy and food security, given the sharp rises in both the price of oil and food, with price rises only starting to fall over recent months. Given ongoing geopolitical challenges, the East of England has a crucial role to play in securing national energy and food security, with our diverse mix of clean energy assets, as well as our ideal growing conditions, fertile soils and agri-tech expertise. It is also vital that our logistics supply chains remain as robust as possible, to ensure that trade continues to flow to the benefit of consumers and exporters.

Major energy capabilities

National aspirations

The Government has established a range of overlapping ambitions in relation to energy and net zero. These include:

- Committing to reaching net zero emissions by 2050, a legally binding target.
- Aiming to double Britain's electricity generation capacity by the late 2030s[69], including developing up to 50GW of offshore wind and 10GW of hydrogen capacity by 2030, and quintupling solar power by 2035.

Transitioning to renewable energy is crucial in achieving net zero, ensuring we power our homes and businesses and support infrastructure through clean energy sources. This is also key in reducing our energy import demands, particularly at a time where international events have increased pressures on the supply of oil and gas. The East of England will be key in the country moving towards greater energy security.

[67] King's Lynn, Great Yarmouth, Lowestoft, Ipswich, Felixstowe, Harwich, London Gateway, Purfleet, Tilbury, Mistley, Brightlingsea, Baltic Wharf, Port of London wharves

[68] London Stansted, London Luton, Norwich and London Southend

[69] UK Government, Powering Up Britain - Energy Security Plan, 2023

Our contribution to net zero and energy security

The East of England is at the forefront of the UK's clean energy landscape, with a diverse energy mix. We have particular strengths in offshore renewables, but our capabilities stretch across onshore wind, solar, biomass, natural gas, nuclear and hydrogen. **The East of England will be central to the UK achieving its net zero ambitions and strengthening domestic energy security,** which has been brought into even sharper focus since the war in Ukraine.

Energy produced in the East of England currently powers 32% of all UK homes equivalent, and by 2035 could power 90% of homes equivalent[70], with major rises in offshore wind, nuclear and solar capacity underscoring the importance of the East of England in the national journey towards net zero. The density of different energy and generation types and assets makes our region ideal for supporting new innovations in generation, operations, maintenance and delivery of new assets.

The East of England Energy Group (EEEGR) highlights our region's prowess as a leader in energy production and distribution, supporting over 12,000 businesses and generating turnover of some £17bn per year. The sector employs around 85,000 people, growing by 14% since 2016. By 2050, our region will see a further £122bn invested into energy production[71].

Our coastal energy cluster is a major asset, which has seen extraordinary growth over the past 60 years as a pioneering area for sustainable energy and renewables, and it now provides a home to 13 offshore wind farms (circa. 50% of the UK's installed capacity), 139 gas platforms, and 4,500km of offshore pipeline (including two interconnectors to Europe).

Sizewell is at the heart of our region's nuclear expertise and in January 2024, Sizewell B achieved the milestone of generating 250TW of electricity, enough to power all homes in Suffolk for nearly two centuries[72]. The region's nuclear capabilities will grow with the development of Sizewell C. Once fully operational, Sizewell C is expected to generate 3.2 GW of electricity – EDF estimates this will power 7% of the UK's needs, the equivalent of 6 million homes and generate electricity for 60 years, supporting over 2,500 construction jobs in Suffolk, 70,000 jobs nationally and adding £4bn into the regional economy[73]. In January, the UK Government committed an extra £1.3bn to support the construction of Sizewell C[74].
Our clean energy capacity would be further boosted by proposals for Bradwell B, with the proposed twin reactor power station able to generate 2.2GW of low carbon electricity, enough to power around four million homes[75].

The region's pivotal role in energy transition has been exemplified by Bacton Terminal, which in recent years has handled up to 30% of the UK's gas supplies. Bacton Terminal has the potential to become a hub for the production of low-carbon hydrogen as part the plans to convert the gas terminal to focus on both green and blue hydrogen production, enabled by carbon capture and storage. The proposals for Bacton could heat up to 20 million homes and businesses across London and the South East for decades to come and play a significant role in reducing greenhouse gas emissions[76].

Part of plans at Freeport East are to develop a Green Hydrogen hub, harnessing the region's renewable energy generation capacity to produce green hydrogen for future transport uses. This is not just crucial in reducing emissions related to logistics and shipping, but also to decarbonise the surrounding area. Freeport East recently signed an agreement with Australian-based green hydrogen storage firm Rux Energy, underlining their commitment to decarbonise through green hydrogen for future transport uses. There is a clear local opportunity with a potential demand for 1GW of hydrogen by 2030 in the Freeport East area across local industry, transportation and the maritime sector[77.]

[70] Calculations provided by Opergy, based on most recent statistics from BEIS that annual GB average domestic household consumption is 3.509kWh (as of December 2022). Renewable UK calculates hoomes powered as number of megawatts installed multiplied by the appropriate technology load factor expressed as a fraction of 1, multiplied by number of hours in a year, divided by average annual domestic electricity consumption expressed in MWh.

[71] Figures taken from EEEGR website, 2023

[72] EEEGR, 5 core principles for Energy in the East of England, 2024

[73] Sizewell C

[74] Department for Energy Security and Net Zero, Further Steps to prepare Sizewell C for construction, 2024

[75] Bradwell B

[76] North Sea Transition Authority, bacton Energy Hub, 2022

[77] Freeport East

This will complement the momentum building in the East of England with several other projects linked to hydrogen development underway. As well as the previously mentioned plans at Bacton, there are proposals for three hydrogen electrolysers and associated storage at Lowestoft Power Park powered by renewable energy, flexible generation at Stowmarket, conversion of the Bittern and Wherry branch rail lines to hydrogen as proposed by Network Rail, and development of electrolysis capacity in conjunction with nuclear energy and heat to support development at Sizewell C[78].

Freeport East have a number of other clean energy initiatives which will support the UK in its path towards net zero. Major projects include development of a new container terminal at Bathside Bay at Harwich. This will create 120 hectares of further port land and include proposals for a new offshore wind hub which will provide dedicated installation, engineering and manufacturing facilities, as well as supporting office space to attract businesses from across the clean energy supply chain.

Food security

National aspirations

Food prices rose over the last couple of years as global supply chain disruptions and the effects of the war in Ukraine lifted input costs for food producers, compounded further by shortages caused by bad weather in key growing regions such as Spain and Northern Africa. Over the two years from January 2022 to January 2024 food prices increased by 24.8% on average, having previously taken 13 years to rise by the same amount[79]. Despite these pressures easing somewhat over recent months, food price rises are a major factor in the cost-of-living pressures faced by many across the country.

Britain is vulnerable to these trends because we import nearly half our food[80]. Climate change is likely to increase the volatility of global food supply. Whilst full self-sufficiency may not be possible for the UK, increasing the security of our domestic food supply is critical to avoid price shocks and shortages that could be damaging to people and stability. The East of England has a major role to play in delivering a prosperous agri-food sector that ensures a secure food supply, supports healthier and home-grown diets, contributes good quality jobs[81], and helps farmers in the UK adopt new technologies to improve yields.

Our contribution to food security

The region is synonymous with agriculture, particularly in East Anglia and the Fens, playing a crucial role UK food production. The East of England accounts for 1.4m hectares of farmland, or 15% of the England total, the second largest total farmed area behind only the South West. 79% of this is arable which is the highest amount and share of arable land among English regions[82]. Furthermore, we are home to a third of the UK's Grade 1 agricultural area, the highest quality farmland in the country. [83]According to the countryside charity (CPRE), we are also home to 27% of the country's 'Best Most Valuable' (BMV) farmland, more than any other region, which is farmland consisting of Grade 1, Grade 2 and Grade 3a land, equivalent to 619,000ha. [84]This land is a significant resource for the UK's food security, but is threatened by flood risk[85] (see below), and an estimated 3,200ha of BMV land has been lost to housing development in the East of England since 2010[86].

[78] Hydrogen East

[79] Commons Library analysis of ONS, CPI food inflation data, February 2024

[80] Department for Environmental Food & Rural Affairs, United Kingdom Food Security Report 2021: Theme 2: UK Food Supply Sources, 2023

[81] Department for Environmental Food & Rural Affairs, Government food strategy, 2022

[82] Department for Environment Food and Rural Affairs, Agricultural facts: East of England region, 2023

[83] 'Grade 1' land is classified as 'Excellent quality agricultural land – land with no (or very minor) limitations and high and less variable yields. A very wide range of agricultural crops can be grown, such as apples and pears, salad crops, soft fruit, and winter harvested vegetables.

[84] CPRE, Building on our Food Security, 2022

[85] CPRE estimates that 'flooding as a result of climate change poses a further risk, with almost 60% of our most productive Grade 1 land already sitting in the Environment Agency's Flood Zone 3.' Whilst this figure is for England as a whole, it is consistent with the picture for the East of England given the geography of the region's high quality farmland

[86] CPRE, Building on our Food Security, 2022

Thanks to our ideal growing conditions and fertile soils, we account for much of the nation's crops – 62% of sugar beet, over a quarter of wheat, field vegetables and around a quarter of barley and oilseed rape. As well as this, we are an important source of poultry produced in England – almost half of turkeys and a quarter of chickens[87].

Our region employs 38,000 people in agriculture, 13% of the total agricultural labour force in England. In 2022, total gross value added from farming reached £4.5bn across the East of England, with the largest contributions coming from wheat (£1bn) and poultry (£658m). These two commodities alone accounted for 37% of total agricultural output value[88].

Profit from farming, or Total Income From Farming (TIFF) was highest in the East of England at £1.1bn in 2022, an 82% increase since 2018. The region has consistently been amongst the top contributing farming regions nationally; in the last decade, the East of England has had the highest TIFF of the regions in six years and the second highest in four years (2014, 2017, 2018 & 2020). This includes income per hectare, where the East of England had a TIFF of £783 per hectare in 2022, a £56 per hectare increase from the year before.

Figure 24: Total Income From Farming (TIFF) across English regions (2021 and 2022)[90]

Related to this are our strengths in agri-tech, crucial in ensuring our food security nationally. As we outlined in previous sections, we are leading the way in adopting new technology to improve productivity in farming. We are home to around half of businesses in the UK related to Precision Farming, and have strong concentrations of businesses adopting modern agricultural methods including remote sensing, drone technology and vertical farming, all of which will be crucial in the future of food production.

We are also leading in a number of food and plant health research fields. Norwich Research Park draws together many important assets including the John Innes Centre, The Sainsbury Laboratory and the Quadrum Institute, all contributing towards renewed food security through research into plant disease and improving the resilience and nutrition of our food. Rothamsted have multiple locations throughout our region including in Hertfordshire, which is a hub agri-tech start-ups.

Complementing our agricultural strengths with our emerging expertise in agri-tech will be crucial in contributing towards food security nationally, particularly in mitigating against the impacts from climate change.

[87-88] Department for Environment Food and Rural Affairs, Agricultural facts: East of England region, 2023

[89] Department for Environment Food and Rural Affairs define this as the income to those who own businesses within the agricultural industry. It is the total profit from all UK farming businesses on a calendar year basis. It measures the return to all entrepreneurs for their management, inputs, labour and capital invested.

[90] Department for Environmental Food and Rural Affairs, Total Income from Farming in the regions of England in 2022, released 2023

International gateway

National context

The Government has set a target of achieving £1tn in exports annually by 2030. As of 2023, the UK's exports of goods and services totalled £691bn[91]. Global trade volumes declined significantly following the Covid-19 Pandemic, with 2020 marked by some of the largest reductions in trade and output volumes since World War II[92]. However, since then UK trade intensity[93] has not recovered in line with other G7 countries, with UK trade intensity remaining 1.7% below pre-pandemic levels in the third quarter of 2023, whereas it had risen by 1.7% on average across the rest of the G7[94].

The East of England has an important role to play in supporting broader UK trade via our key ports and airports, with high quality logistics infrastructure critical to maximising trade opportunities. There is also potential for the region to further improve its contribution through expansion and maximising the opportunities around our Freeports.

Our major assets

Our ports are critical to the national economy, supply chains and to hundreds of thousands of businesses based across the UK. Half of the UK's containerised goods are moved through the region[95], including Britain's busiest container port Felixstowe, handling over a third of the UK's container traffic[96] and welcoming approximately 2,000 ships each year[97].

Felixstowe's importance stretches across the country, with 70% of containers coming through Felixstowe delivered to the logistics 'golden triangle': an area of the Midlands that is within a four-hour drive of 90% of the British population, renowned for its high density of distribution facilities, and home to the national distribution centres of many of the country's leading high street brands and retailers[98].

Freeport East covers over a thousand square kilometres in total, stretching from Felixstowe and Harwich down through Clacton and Jaywick, out around Colchester and Sudbury, Stowmarket and Woodbridge. The main sites are located at the Port of Felixstowe, the country's biggest and busiest container port, Harwich International Port which is one of the UK's leading multi-purpose freight and passenger and ports, and Gateway 14, the largest business, innovation and logistics park in East Anglia[99]. Clean energy initiatives include a new offshore wind hub as part of plans to expand port facilities at Harwich International, developing a Green Hydrogen Hub and looking for opportunities to deliver green corridor connections that will help support maritime decarbonisation as well as cleaner inland transportation. Freeport East is expected to create 13,500 new jobs, with the potential to create 275 hectares of development land and a GVA of up to £5.5bn over a 10-year period[100].

[91] ONS, UK trade: goods and services publication tables, 2024

[92] OECD

[93] This is defined as exports plus imports as a share of GDP

[94] Office for Budget Responsibility, Economic and Fiscal Outlook, March 2024

[95] East of England All Party Parliamentary Group, International Gateway: the East of England's Key Role in Global Britain, 2022

[96] Department for Transport, Port freight annual statistics 2022: Cargo information, released 2023. Twenty-foot equivalent units (TEU) is a standardised measure to allow for the different sizes of container boxes

[97] Hutchison Ports

[98] ONS, The rise of the UK warehouse and the "golden logistics triangle" 2022

[99] Freeport East

[100] Freeport East, Full Business Case, 2022

Thames Freeport is an economic area connecting Ford's Dagenham engine plant to the global ports at Tilbury and London Gateway in Thurrock. London Gateway is one of the UK's most advanced, connected and integrated logistics hubs. The semi-automated port terminal has three deep water births all capable of handling the world's largest vessels, as well as its own logistics park, supported by one of the longest rail terminals in the UK. Tilbury port is already one of the largest UK ports, a crucial logistics hub for construction, automotive and food & drink sectors, and the home 120 supply chain companies including the UK's largest food and drink logistics provider – Culina[101]. Across the Thames Freeport £4.5bn of new investment and 21,000 skilled jobs are expected to be created[102]. This will be further complemented by investments in the Lower Thames Crossing, expected to provide more than 22,000 jobs including those employed through the supply chain over the six years of its construction, helping to ease congestion on one of the most congested roads in the UK. This will relieve a crucial pinch point in our transport network, allowing trade to flow more easily and creating further business opportunities, potentially adding billions to the national economy[103].

Our other regional ports also fulfil important roles. The ports at Great Yarmouth and Lowestoft are centres for the offshore wind industry with a history of servicing offshore energy projects, offering close proximity to key offshore wind sites for construction, operations and maintenance. The Port of Ipswich is the UK's leading grain exporter, while King's Lynn is a regional centre for forest products, agriculture, manufacturing and recyclables.

Our **airports** are a major asset for the region and the UK. There has been a strong recovery from the pandemic as travel related restrictions have been eased, with total passenger numbers increasing from 12m during 2021 back towards pre-pandemic volumes of 44.9m passengers across our four major airports of Stansted, Luton, Norwich and Southend (16% of total UK airport passengers[104]). Stansted and Luton both feature in the top five UK airports by passenger volumes, and our three 'London' airports alone account for over a quarter of passengers across the capital's airports[105].

The region's airports cater for a large population. For example, Stansted has a population of 25m living within a one-hour drive, and provides extensive international accessibility, flying to over 190 destinations[106]. Therefore, our airports are crucial in supporting our visitor economy, both in terms of tourism and business travel. 20% of Stansted flights are business trips, and there are opportunities to expand this. Stansted Airport estimates that opening long-haul flights to the US, for example, would create £190m in benefits for the region, with particular opportunities around supporting growth in Cambridge and other technology clusters[107].

Our airports also support freight for high value commodities, with Stansted valued for its ability to handle high value goods including racehorses for Newmarket and blood plasma for Cambridge life sciences, amongst other products.

With Heathrow expansion stalled, our airports provide a significant opportunity to expand capacity for London. Stansted has received permission to increase annual passenger numbers from 27m to 43m. Luton Airport is currently seeking a Development Consent Order that would raise passenger limits from 19m to 32m annually. This provides growth capacity above annual passenger numbers recorded in Manchester over 2023[108] and is a huge opportunity to expand much needed airport capacity in the Greater South East without major new airport developments.

[101] Thames Freeport

[102] Thames Freeport

[103] National Highways About the Lower Thames Crossing

[104] Source: UK Civil Aviation Authority (2022). Total passenger numbers from Stansted, Luton and Southend airports

[105] Department for Transport, Air Traffic by operation types and airport, United Kingdom 2012 to 2022

[106] Manchester Airports Group, Connecting Cambridge to the World, 2022

[107] Manchester Airports Group, Connecting Cambridge to the World, 2022

[108] UK Civil Aviation Authority (2023)

7 Our regional infrastructure challenges

Despite the many strengths of our region, and some of the major infrastructure projects that are ongoing, it has long been acknowledged that we face many challenges with regards to inadequate infrastructure. This includes challenges relating to transport, digital, energy and water infrastructure, as well as challenges arising from climate change.

Across the region this is creating pressures on our economic and business investment, and making it harder for people to access jobs and training opportunities. Due to our essential national role as explored in Section 6, this also adds additional costs and risks for the UK economy as a whole.

This section explores each infrastructure area in turn and explores the challenges we are facing.

Transport

We have a number of road and rail constraints limiting connectivity across our region and to other areas of the country, limiting the flow of goods and people, and adding to costs due to delays. Supporting investment across our strategic corridors can boost connectivity and lay the foundations for increased economic growth across our region.

In addition to connectivity issues, there is a huge decarbonisation challenge facing our region's transport network. As one of the largest contributors to carbon emissions, we must move towards a more sustainable approach. Both Transport East and England's Economic Heartland's transport strategies set out pathways to achieving this.

Poor connectivity also leads to inadequate access to services, education, training and employment, particularly for those living in more rural communities. We must do more to reduce inequalities and support our residents to achieve the best possible outcomes. Transport is a significant driver and enabler in this regard. Please see information regarding Rural Transport Deserts in the Transport East Transport Strategy.

Our road network

The East of England covers a large geography, but unlike other regions, does not have one central hub. Many journeys are difficult to take other than by car, which then has a knock-on effect on congestion on our major roads. In 2019, there was an average delay of 11.3 seconds per vehicle mile recorded on the Strategic Road Network in the East of England, nearly 20% slower than the national average of 9.5 seconds[109].

Figure 25: Major transport infrastructure in the East of England[110]

[109] Transport East, Transport Strategy 2023-2050, 2023

[110] Ordinance Survey, 2023. UK Ports, 2024

The table below demonstrates our relatively poor road connectivity compared to other regions in England. The baseline connectivity score is based on the current road network, with a score of less than one indicating that travel speed is below 50 kilometres per hour to all other places, so is therefore considered to be poorly connected[111]. The table also shows the potential increase in connectivity score if the National Infrastructure Commission's portfolio of road investment is followed. It is notable, that the anticipated improvement in connectivity is one of the lowest of any region in the country. Given the report's focus was on boosting economic growth in metropolitan urban areas and of decarbonising urban centres, there is a lack of recognition of our dispersed network, were half of the region's transport emissions come from rural areas[112]. It is especially concerning in light of the decision to delay many of our region's projects included in the Third Road Investment Strategy (RIS3), which outlines investment priorities in the strategic road network from 2025 to 2030 to RIS4 and beyond 2030[113].

Figure 26: Baseline connectivity and potential increase across regional road networks[114]

Region	Baseline connectivity score	Potential increase in connectivity score
London	0.52	9.0%
South East	0.85	8.3%
South West	1.18	12.1%
East of England	**0.72**	**5.2%**
East Midlands	0.99	6.2%
West Midlands	1.13	6.3%
Yorkshire and The Humber	1.11	6.9%
North West	1.04	4.0%
North East	1.17	9.9%

Our region suffers from poor east-west connectivity. Journeys are reliant on a mix of single and dual carriageway A-roads that interconnect with the motorway network, serving London, accommodating both local traffic movements and high volumes of strategic freight traffic. In the east of the region the network is sparse with few alternatives, creating challenges in resilience and journey time reliability.

The region has a large gap in motorway infrastructure relative to other regions. Whilst there are three motorways connecting the North to South such as the M1, A1(M), M11 and the M25, these are concentrated to the west of the region, only servicing parts of Hertfordshire, Bedfordshire and Cambridgeshire and southern Essex, leaving much of our region disconnected. Many of our larger urban areas to the east do not have motorway links such as Norwich, Ipswich and Colchester.

[111] National Infrastructure Commission, The Second National Infrastructure Assessment, 2023

[112] Transport East reaction to the National Infrastructure Commission's second national infrastructure assessment

[113] National Highways Road Investment Strategy 3 (RIS3) sets out the investment in the strategic road network (SRN) during the third road period (2025 to 2030). Road Investment Strategy 4 (RIS4) covers the period 2030 to 2035. Therefore, this delay in investment programming, which has affected many of our transport projects, has delayed said projects by up to ten years

[114] National Infrastructure Commission (2023) The Second National Infrastructure Assessment

Rail

The rail network in the East of England covers some of the busiest lines in the country, connecting millions of commuters, leisure travellers and freight. Demand is largely concentrated in the south of the region on the West Anglian Main Line between Liverpool Street to Cambridge and Ely; Great Eastern Main Line (GEML) between Liverpool Street to Norwich and branches; Essex Thameside Line between Fenchurch Street to Shoeburyness via Upminster and Tilbury; East Coast Main line between London's King Cross via Stevenage and Peterborough; Midland Main Line between London St Pancras and Bedford through to Corby; and West Coast Main Line covers routes through Watford Junction and Bletchley. There are also constraints on the North London line impacting freight capacity from Thameside.

Rail connections into London are generally good, particularly on our main line corridors heavily used for commuting. But passenger services into London before the pandemic were heavily crowded, and at peak times our lines were at capacity, including the GEML which operated at maximum capacity without the ability to run any additional trains into London Liverpool Street. C2C trains on the Essex Thameside Line were similarly busy and there are significant signalling constraints on the line between Upminster and London Fenchurch Street, severely restricting the opportunity to increase capacity.

Travel on other lines tends to be poor with far less frequent services, with infrastructure focused on travel to and from London. This is particularly apparent in travel across Essex, and between Norwich and Kings Lynn. Some of our region's towns, such as Haverhill and Wisbech, are not connected to the rail network at all[115].

Travel to places outside the region apart from London is also often poor. Often journeys to the North and Midlands require interchanges and take the same or even longer travelling by road. Even when there are direct services, such as from Norwich to Sheffield, Manchester and Liverpool, they are infrequent services.

Case study: East-West Rail

Delivery of East West Rail between Oxford and Cambridge should be the catalyst for an 'East West Main Line' which extends all the way to Ipswich and Norwich, improving rail connections between Cambridge, Norwich and Ipswich, supporting the growth potential of these cities and development along key corridors such as the Norwich-Cambridge Tech Corridor, and connections with wider UK economic centres.

The EWR eastern section would significantly reduce rail journey times between key urban areas, and relieve crowding on rail services via London and congestion on the strategic road network. It would increase capacity for rail freight, facilitating growth at several ports, including Freeport East, while decarbonising the movement of goods. It would also unlock major development sites with sustainable transport connections to help the Government fulfil its ambition to deliver more homes across the UK.

The eastern section could also open-up opportunities for direct connections to Stansted and Colchester, along with onward improvements for coastal locations in Norfolk and Suffolk.

East-west connectivity is particularly limited by rail, consisting of two branch lines. The Ipswich-Cambridge line via Newmarket is hourly and runs on a single track from Newmarket to Cambridge with constrained line speeds, and the Norwich-Cambridge route via Thetford is hourly. Further west, there are currently no rail connections between Bedford or Luton to Cambridge or Peterborough without travelling via London, despite being geographically close. The bottleneck in the form of the Trowse swing bridge also limits the number of trains per hour that can use the Norwich-London line.

Better connectivity between our core urban areas would support the growth potential of these towns and cities and development along key corridors such as the Norwich-Cambridge Tech Corridor. It would also improve the connectivity with wider UK economic centres, particularly in combination with the delivery of the East-West Rail Mainline.

[115] Transport East, Transport East State of Rail Report, 2023

Rail freight services travelling to and from major ports such as Felixstowe, Harwich, Tilbury and London Gateway also suffer from constrained capacity. While there have been some capacity improvements on the Felixstowe Branch Line, there remain significant constraints on the Felixstowe to the Midlands and North route particularly around Ely, which forces trains to travel to and from the Midlands via north London, adding freight services onto the North London Line.

Case study: Ely Junction upgrade

Ely sits on the cross-country route of the 'Felixstowe to the Midlands and the North' (F2MN) freight corridor, which is the most intensively used and nationally important intermodal rail freight corridor on the network, connecting Felixstowe – the UK's busiest container port – and key destinations across the Midlands and the North.

However, a mixture of single track sections, restricted speeds, signalling limitations and level crossings in the Ely area act as a barrier to meeting increased demand for freight path with goods transported long distances to the Midlands and the North by road.

Not only do proposals reduce emissions by 1.7m tonnes over 60 years, they also reduce congestion by 5.6 million hours per year, in part by taking 98,000 lorry journeys off the road every year. Given rises in demand, without intervention at Ely, volumes of freight to and from Felixstowe will be increasingly transported by road, further congesting critical routes like the A14 and the motorway network across the Midlands and the North. The proposals would also see the doubling of passenger services on the Ely-King's Lynn and Ipswich-Peterborough routes.

Economic analysis shows that the upgrade scheme will deliver a nearly fivefold economic return, with £4.89 in benefits generated for every £1 of investment.

London Gateway and Tilbury have rail freight terminals, but these link into the Essex Thameside Line which is at capacity and heavily used by passenger trains, limiting the potential to move freight by rail. Investment is needed to electrify the spur to London Gateway and at Ripple Lane Yard to manage train paths through north London. Finally, current plans for the Lower Thames Crossing do not include the Tilbury Link Road, hindering connectivity to the Freeport and constraining the economic growth potential for the region.

Priority corridors

Our STBs have identified nine critical economic corridors for this East of England study area. These corridors encompass both road and rail infrastructure, and link up important destinations within and outside of the region where further investment is needed. These corridors are shown below[116].

Figure 27: Strategic corridors in the East of England region[117]

Key:

Midlands – Peterborough – King's Lynn – Norwich – Great Yarmouth

London – Chelmsford – Colchester – Ipswich – Norwich & Suffolk Coast

Norfolk & Suffolk to Cambridge – Bedford – Midlands – South West

London – Thurrock – Basildon – Southend

Watford – St Albans – Stansted – Braintree – Colchester – Harwich & Clacton

Felixstowe – Ipswich – Bury St Edmunds – Ely – Peterborough – Midlands

London – Stansted – Cambridge – Ely – King's Lynn

A1/East Coast Main Line corridor: London – Stevenage – Peterborough – Midlands

A6 corridor/Midland Main Line corridor: London – St Albans – Luton – Bedford – Midlands

[116] Alongside contributing to this report, in summer 2024 England's Economic Heartland will be publishing a number of 'Connecting Economies' brochures which provide further details on the transport infrastructure priorities in Cambridgeshire and Peterborough, Hertfordshire and Bedfordshire.

[117] Transport East, Transport Strategy 2023-2050, 2023

Midlands – Peterborough – King's Lynn – Norwich – Great Yarmouth

This corridor covers the east-west arc across the north of the region, connecting the Midlands to our internationally significant clean energy clusters at Great Yarmouth and Lowestoft, as well as connecting Norwich and King's Lynn, and several rural and coastal communities. This corridor is focused on the A47. Currently, the sections of single carriageway on the A47 are frequently blocked by congestion, slowing journey times. There are also several pinch points that cause delays and require upgrading. Further west, the investment of £100m to transform a 1.6-mile single section of the A47 near Peterborough between Wansford and Sutton into a dual carriageway is a welcome step towards improving this vital corridor. Furthermore, safety is an issue along this corridor with a number of fatal accidents recorded between 2018 and 2022. There are also specific issues related to seasonal demand.

Delivering investment to upgrade junctions and dual the A47 will provide more reliable journeys which can support growth in areas across the corridor including Norwich, King's Lynn and the port, and coastal communities and visitor attractions including Cromer, Sheringham and the Norfolk Broads.

London – Chelmsford – Colchester – Ipswich – Norwich & Suffolk Coast

Running north-south through the heart of East Anglia and covering the Great Eastern Mainline (GEML), this corridor focuses on connectivity between Norwich, Ipswich, Colchester and Chelmsford. It includes onward connections by rail and road, specifically the A12 and A140, to the energy coast along East Essex, Suffolk and Norfolk. This provides important north-south connectivity.

For rail, unlocking constraints on the Great Eastern Main Line remains the priority. Haughley Junction is a major pinch-point. Adding an additional line would allow for greater flexibility and higher frequency of freight and Ipswich to Cambridge services. Trowse Bridge also acts as a bottle neck on the railway lines into Norwich. It is also a priority for East-West Rail to provide connectivity from Cambridge to Ipswich.

On the roads, the A12 carries over 100,000 vehicles per day through Essex and suffers congestion at key points around its intersection with the M25 and between the M25, Colchester and Ipswich, including junctions with the A120 and A14 at Copdock.

Inter-region travel across towns in Essex, Suffolk and Norfolk could also be improved. Enhancements along the corridor can improve connections to the Suffolk and Essex coast, supporting the recovery of the visitor economies, local growth and delivery of nationally significant energy projects such as Sizewell C.

Norfolk and Suffolk to Cambridge – Bedford – Midlands – South-West

This corridor covers the international gateways at Felixstowe and Ipswich ports, Norwich Airport, and connections between Norwich, Thetford, Bury St Edmunds and Ipswich. East-West Rail will form a new connection from Bedford to Cambridge, cutting journey times drastically from two hours to 35 minutes by rail, and create new stations at Tempsford and Cambourne. Improvements to East-West Rail are crucial for this corridor to improve journey times and connectivity to the Cambridge-Norwich and Cambridge-Ipswich routes. The Ely area and Haughley railway junctions also impede service provision and require investment to improve capacity.

For road, improvements to the A11 were completed in 2014 when the last single carriageway stretch between Thetford and Barton Mills was dualled by National Highways. However, Mildenhall Fiveways Junction remains a crucial pinch point, as well as in and around the A11 near Thetford, the A428 during rush hour as the only connection from Cambridge to Bedford, and the M1 at Milton Keynes. Current work is proposed to improve the roads between the A1 Black Cat junction and Caxton Gibbet junction, a section of the A428 projecting to see traffic increase by 30% to 2040.

London – Thurrock – Basildon – Southend

This corridor covers the largely urban area between London, Thurrock and Southend-on-Sea. Rail services in this corridor are largely provided by the Essex Thameside network which has high commuter demand into London Fenchurch Street.

This corridor experiences severe traffic congestion with a significant proportion of residents driving to work, with poor north/south connectivity between major residential and employment centres a particular challenge. Whilst the A13 plays a significant role in enabling traffic movement through the South Essex corridor, it experiences some of the worst delays in the region of 40 seconds per vehicle mile. Investment is needed across road, passenger rail and the bus network.

Proposals for the Lower Thames Crossing will connect Thurrock directly to Kent, connecting the M2/A2, A13 and M25.

Watford – St. Albans – Stansted – Braintree – Colchester – Harwich & Clacton

This corridor covers the east-west arc between Watford in the west, running through Stansted Airport to Harwich/Clacton in the east. East-west connectivity is generally very limited, with no direct rail services between Braintree/Colchester and Stansted.

The A120 suffers with congestion issues largely owing to a single carriageway section, limiting connections between Braintree to the A12 and links to the M11. Tackling this can further open up connections between Braintree and the A12, linking the M11 UK Innovation Corridor with gateways at London Stansted Airport, Freeport East and the Port of Ipswich, whilst supporting the development of garden communities to the west of Colchester and around Harlow, This would also improve accessibility to and from Harwich and Clacton-on-Sea, currently a major blocker in promoting levelling up.

The A414 is an important link between Essex and Hertfordshire, connecting the towns of Maldon to Hemel Hempstead – but there is congestion along sections of the A414 and at key junctions between and within towns. With lots of new homes planned along the A414 route, improvements such as the £15m investment in Harlow to create a dual carriageway along Edinburgh Way between Cambridge Road and River Way Roundabouts are welcome. But major schemes such as the Hertfordshire Essex Rapid Transit (HERT) propose a new sustainable passenger transport network from Hemel Hempstead and Watford in the west, to Broxbourne and Harlow in the east. Likely to be delivered in phases, HERT is proposed to split into three sections: Hemel Hempstead to the new Gilston Garden village which will also improve connections to Luton Airport via St Albans; St Albans to Watford; and Gilston to Harlow providing onward links to Stansted Airport.

London – Stansted – Cambridge – Ely – King's Lynn

This corridor running North to South between King's Lynn and London covers the West Anglia Main Line serving Ely, Cambridge, Stansted Airport and Harlow. The corridor would benefit from Network Rail's proposals to boost capacity on the West Anglia Main Line and from capacity improvements and Ely junction. Stansted is already well connected to London by rail, but the frequency of services has declined from four to three per hour since the Covid-19 pandemic. Re-instating four trains an hour can help boost rail mode share to Stansted.

But there are significant constraints on the road network, including the M11 junctions – particularly junction 8 for Stansted Airport – and the A10 limiting proposed homes and jobs growth at West Winch.

Felixstowe – Ipswich – Bury St Edmunds – Ely – Peterborough – Midlands

The Felixstowe to Midlands corridor is approximately 221 miles in length within our region, and contains the A14, A421, A428 and A45. The route also includes the A141 and the A1307 short stretches of road to the west of Huntingdon.

Along the Felixstowe to Midlands route, the A14 is the main artery and forms a component of the UK's premier freight network, whilst passing thorough the urban centres of Bury St Edmunds and Ipswich. Improvements have been made between Cambridge and Huntingdon as part of a £1.5bn scheme including a major new bypass to the south of Huntingdon and upgrades to 21 miles of the A14 to help ease congestion and reduce journey times. But there remains crucial pinch points. The most notable at Bury St Edmunds and Ipswich, the A14/A12 Copdock interchange and poor resilience at Orwell Bridge, impacting on freight travelling to and from Felixstowe.

A1/East Coast Main Line corridor: London – Stevenage – Peterborough – Midlands

This corridor running from north to south between Peterborough and London covers the East Coast Main Line, the A1(M) and the M25. London attracts significant commuter flows within this corridor, with notable commuter flows between Stevenage, Welwyn Garden City and Hatfield. Connectivity between towns within this corridor is a priority, including cycling links and interurban bus connectivity.

Recent improvements to Stevenage Station will also solidify its role as a passenger transport hub, with improved rail capacity and service levels for commuters into London. There is a need for long-term investment in the A1 to reduce frequent congestion and delays.

A6 corridor/Midland Main Line corridor: London – St Albans – Luton – Bedford – Midlands

This corridor running from London through to Northamptonshire passes key towns in Bedfordshire and Hertfordshire such as St Albans, Luton and Bedford, and is serviced by the Midland Main Line, the A6 and M1. London attracts significant commuter flows through the Midland Main Line and the A6 leading into the M1. This corridor also has an important role in connecting Luton Airport to London and elsewhere in the country, regularly generating high traffic volumes. Significant rail improvements to both passenger and freight trains are important to improve the efficiency of this heavy traffic corridor.

Future plans aim to improve regional connectivity to Bedford as a major interchange hub between the Midland Main Line and the East West Main Line, connecting the town to London, the East Midlands and East Anglia. Optimising rail freight between Watford and St Albans will reduce heavy and light goods road traffic through a highly congested, urban area.

Bus service in our region

While much of our region is growing, the size and density of our towns and cities make it more of a challenge to create strong walking, cycling and public transport networks compared to larger metropolitan areas. As well as this, infrequent service provision and long journey times impact people's decision to choose to travel by car rather than bus.

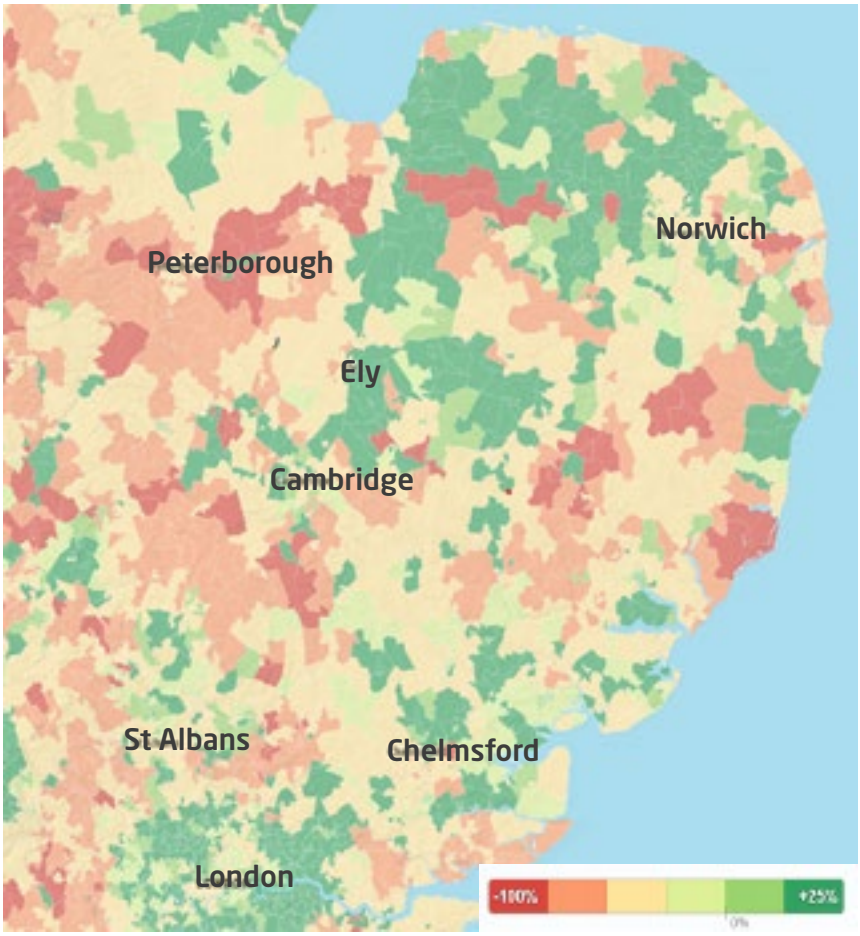
This can be seen in the below map which shows changes in frequency of services between 2010 and 2023. Whilst some areas have seen increases in frequency of up to 25%, the majority of our region has seen declining frequency, including in some areas complete cancellation of some services.

Areas highlighted as experiencing significant declines in bus services include Peterborough, South Cambridgeshire, and parts of Bedfordshire, Hertfordshire and Suffolk. Neighbourhoods highlighted in red saw a reduction of bus services between 75% and 100%. The only local authorities that saw an increase in bus services were North Norfolk, Maldon and Colchester, with increases of 6.3%, 1.9% and 0.3% respectively. East Cambridgeshire felt the largest decline in bus services at 60%. This is a stark difference to London, where many of the outer boroughs saw bus services increase by more than 25% since 2010.

Estimated net support paid by central and local government for local bus services[118] has declined by 22% since 2010 across the East of England to £41.2m in 2023. This makes it even more challenging to provide a consistent service across our region, particularly in some of our more rural areas where services are unlikely to be operational without some form of support.

Infrastructure challenges are already impacting on housing developments in the region including Dunton Hills Garden Village. Please see case study overleaf.

Figure 28: Changes to bus service frequencies across the region (2010-2023)[119]



[118] Department for Transport, Annual bus statistics: year ending March 2023

[119] University of Leeds and Friends of the Earth, 2023

Case study: Dunton Hills Garden Village

Dunton Hills Garden Village is a residential-led mixed use development in Brentwood which will deliver up to 3,700 homes, community and sport facilities, four schools and 55,000 sq m of land for business use. Dunton Hills forms the strategic development allocation in Brentwood delivering most of the long-term housing need, with its substantial scale meaning it can plan to deliver the necessary supporting infrastructure, such as schools, shops and other community facilities, and co-locate a wide range of jobs, helping internalise movement and supporting wider net zero ambitions.

Due to the site's location, important improvements need to be made to deliver safe and sustainable transport links through to West Horndon railway station. A sustainable transport corridor connection to the east, is important for Dunton Hills and will help deliver on the modal shift required to achieve garden village principles for transport. But unlike other garden communities it has not benefitted from any Government Housing Infrastructure Fund (HIF) intervention.

Without additional investment in transport, the site's sustainability and garden village credentials will potentially be undermined, preventing modal shift from taking place and missing out on an opportunity to support sustainable growth in South Essex.

Poor connections are a particular challenge in many rural and coastal areas – especially in Suffolk and Norfolk – making it difficult to access jobs, education and essential services. Over half-a-dozen coastal towns in Essex are among the 10% worst connected urban areas in the UK by road[120]. While some coastal areas in the region are relatively affluent, poor connectivity is a significant contributor resulting in poorer health and difficulty accessing high-quality, affordable housing, contributing to higher levels of embedded deprivation in coastal places. Urgent action is needed to level up these areas through better connections, enabling deprived areas to prosper.

Case study: Transport challenges on the coast

Jaywick, a coastal town in Essex, has been identified as England's most deprived neighbourhood [121] ranks poorly in terms of health deprivation.

Poor transport is a factor driving these outcomes. The town does not have the economic strength to support local jobs, so residents must travel outside for work and services. The nearest rail station is in Clacton-on-Sea, accessible only by road. 33% of households have no access to a car and only two bus services operate in the town. Journey time to the nearest hospital is over an hour. So poor transport limits residents' opportunities to access education, training, employment and essential services.

[120] Transport East, Transport Strategy 2023-2050, 2023.

[121] Luton Rising, Future Luton – our proposed development and the DCO, 2022

In order to unblock our road and rail connectivity challenges we ask government to invest in our key economic corridors:

Corridor	Priority projects (not exhaustive)
Midlands / Oxford / Northampton – Peterborough – King's Lynn – Norwich – Great Yarmouth	A47 Acle Straight (RIS4 pipeline), A10 West Winch (MRN), Norwich Western Link (MRN), A17 Pullover MRN
London – Chelmsford – Colchester – Ipswich – Norwich & Suffolk Coast	Great Eastern Main Line, Haughley Junction, Trowse Bridge, A12/A14 Copdock Interchange, A12 North, A140, interface with M25
Norfolk and Suffolk to Cambridge – Luton / Stevenage – Midlands	East West Rail Eastern Section, Ely Junction, key pinch points at Freeport East, A11 Fiveways junctions, Thetford junctions, A14/A12 Copdock interchange, A14 Bury St Edmunds junctions
London – Thurrock – Basildon – Southend	A13, interface with M25, M25 junction 30, A127 corridor
Stansted – Braintree – Colchester – Harwich	A120, A12
King's Lynn – Cambridge – Harlow – London	West Anglia Main Line, Key M11 Junctions, A10
London – Stevenage – Peterborough	Midland Main Line, A1
Chelmsford – Harlow – Watford – Buckinghamshire	A414, HERT Rapid Transit
Watford – Luton – Beford – Northamptonshire	M1, A6

For more information on the schemes in the table above, please refer to Transport East and England's Economic Heartland Sub-national Transport Strategies.

We also need investment to improve wider transport accessibility:

- Confirm commitment to major transport schemes such as East-West Rail and Ely and Haughley rail junction improvements.
- Extension of Bus Service Improvement Plan / new funding to support bus networks, particularly in rural areas.
- Simpler, longer-term funding mechanisms to facilitate stable regional transport investment pipelines supporting priorities set out in the strategies of the region's two Sub-national Transport Bodies (STBs).
- Increase maintenance budgets to support necessary repairs to our road and rail networks.
- Commitment to work in partnership with local councils to facilitate an acceleration in the roll out of the infrastructure needed for electric vehicles.
- Enhance the role and powers of the STB partnerships of local authorities and other partners, to better join-up strategic transport planning across the East with government and national delivery bodies, to improve outcomes and achieve cost efficiencies.

Airports

Despite playing host to four major airports, including two of the five largest in the UK, our airports face challenges to maximise their potential. This is critical given the role that they play in facilitating business travel, inward investment and air freight. There is a specific challenge in terms of long-haul routes that would support connectivity between North America and our key innovative locations. Most obviously, there is a clear need for the expansion of flights to be supported by investments in the supporting transport infrastructure.

But more can be done to improve journey times. Journeys are also longer at 48 minutes between Stansted and London Liverpool Street compared to 32 minutes between London Victoria to Gatwick despite covering a similar distance. Proposals to address this through expanding the line to four tracks, or through providing places on the line where airport trains can overtake other passenger trains, are not part of current long-term planning. Clearly, this needs to be addressed to maximise the benefits of future passenger growth. More also needs to be done to provide earlier and later connections that link with flight times.

There is scope for expansion at other airports. Last year approval was granted for London Luton Airport to expand from 18m to 19m passengers per year, with future plans to expand capacity to 32m passengers annually by the mid-2040s. The proposals include additional capacity at the existing terminal and to build a second terminal, additional taxiways and surface access and road changes, with estimates that expansion can provides an additional £1.5bn to the economy each year[122]. There is opposition to the proposals however from Dacorum, Hertfordshire and North Hertfordshire councils.

London Southend Airport has capacity to serve 3m passengers a year, which it did in 2019, and it aspires to expand to 10m passengers a year in the future. The Airport Business Park has recently expanded, with Ipeco, one of the world's leading aircraft crew seating manufacturers, set to move into their second site at the park in April.

Plans to continue growth at Norwich Airport have been endorsed by both Norwich City Council and Broadland District Council, with a clear vision to be the passenger airport of choice for Norfolk, Suffolk and adjoining counties[123]. Passenger numbers could potentially rise to 1.4m and its economic contribution to £170m by 2045, with further investment in Norwich Airport Industrial Estate and planning permission granted at nearby Imperial Park for the development of 1.25m sq ft of development land aimed towards aviation, industrial and logistics companies.

In order to ensure that the region's airports maximise their contribution to regional and national growth, we ask Government to:

- Support the investment in major transport links to ensure that these keep pace with expansion in passenger numbers.
- Support our airports to offer more long-haul routes that can help our knowledge intensive industries.

[122] Luton Rising, Future Luton – our proposed development and the DCO, 2022

[123] Norwich Airport Masterplan, 2019

Digital connectivity

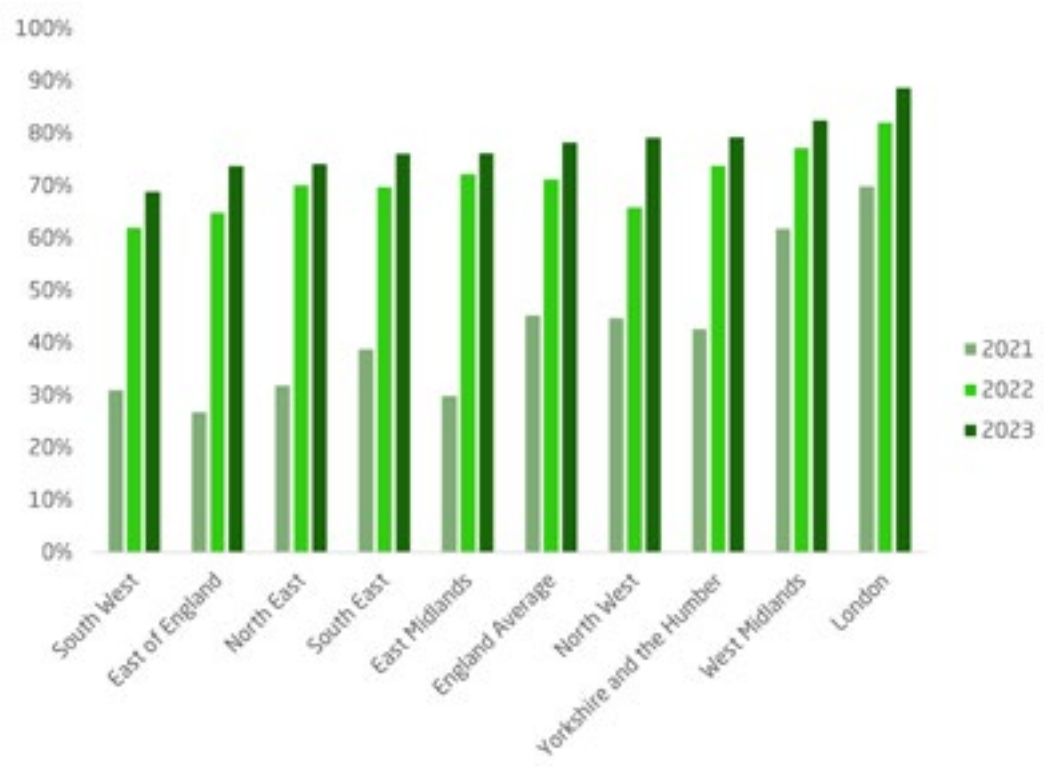
Digital infrastructure is vital to support economic growth, accommodate our shifting working patterns, and the delivery of public services. Progress is being made, with 74% of premises in the East of England having access to gigabit capable connections and 77.2% of premises to 5G mobile broadband from at least one provider. However, these figures are below the national averages.

To gauge performance the report uses data from Ofcom's Connected Nations report. But concerns have been raised about the accuracy of connectivity reporting being used by providers and subsequently Ofcom. Local authorities have raised that the definition of certain kinds of connectivity are far too lax, and that in many places they are misleading. Government has recognised that there is an issue around digital connectivity reporting in the National Wireless Strategy, and we await further detail as to how this will be improved[124].

Fixed broadband coverage

In the East of England, 74% of premises have access to gigabit-capable connections (offering download speeds of up to 1,000Mbps). This is a significant increase from the year before where coverage was 65%. However, across England over 78% of premises have access to gigabit-capable connections, with the East of England having the second lowest gigabit coverage of any region.

Figure 29: Percentage of premises with access to gigabit-capable connections[125]

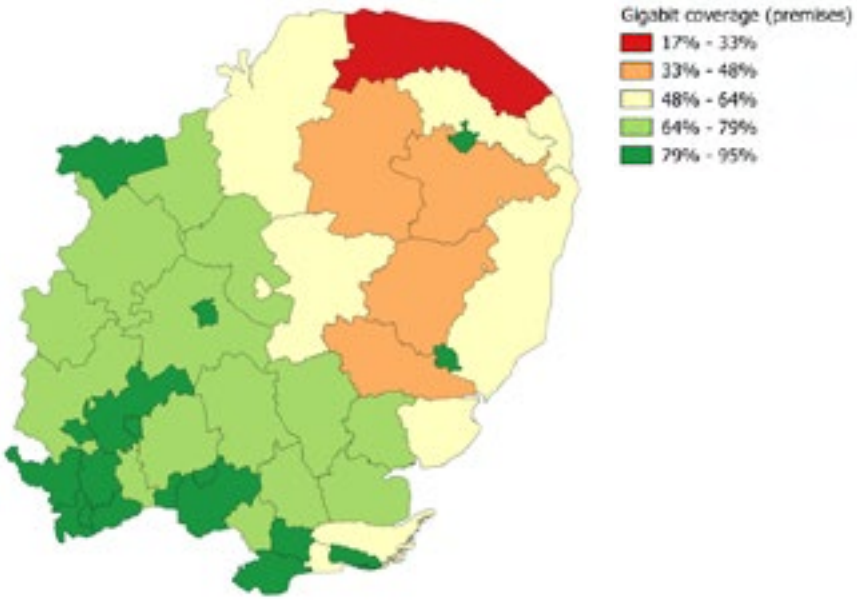


To the west of the region, gigabit coverage is fairly high in areas of Bedfordshire, Cambridgeshire, Hertfordshire and Essex. Some of these areas include Southend-on-Sea, Luton, Ipswich, Cambridge, Watford, Stevenage, Harlow and Peterborough – all of which have 90% or above gigabit coverage. However, there is a clear divide in coverage to the east of the region as demonstrated by the areas in yellow, orange and red, in areas of Essex, Norfolk and Suffolk where coverage is below the national average. North Norfolk has the lowest gigabit coverage in the East of England at 17.4%.

[124] EELGA Infrastructure and Growth Panel, East of England Digital Infrastructure Update, 23 November 2023

[125] East of England Local Government Association, Digital Infrastructure Update, 2023. which uses data from ThinkBroadband for August 2023

Figure 30: Gigabit coverage by local authority in the East of England (2023)[126]



The East of England also has the second lowest levels of full fibre availability, only ahead of the North East region. [127]As of February 2024, 59.3% of premises had access to full fibre connections in the East of England, below the England average of 63.1%.

Case study: North Norfolk broadband challenges

North Norfolk has one of the worst levels of full fibre connectivity of any district in the country, ranking 341st out of 374 local authority areas across the country, with just 15% of households being able to use the technology. In comparison, accessibility nationally stands at over 50%. Mobile phone and mobile internet connectivity rates are also poor.

Lack of connectivity creates a range of challenges for businesses. Monica Vinader, the innovative jewellery designers, have an office in Holkham Hall. They have had to make significant investments to ensure fibre connectivity to their premises – investments that might be unviable for smaller local businesses. Poor connectivity creates challenges for remote working patterns and results in more cars on the road and greater congestion locally. For visitors to the area, the lack of phone and internet connectivity can make it challenging to get around – causing problems for the visitor economy. Whilst North Norfolk has a particularly challenging accessibility problem, these same issues play out across many rural and coastal parts of the East of England region.

Progress has been made in terms of ensuring people can access superfast broadband (24Mbps and higher). Only 1.8% of properties in the region don't have access to superfast broadband, slightly ahead of the 2% of properties nationally. However, this means that a fairly large number of people still don't have access to decent broadband in the region, working out at around 52,000 homes across the East of England.

It is important that we do not lag behind the rest of the country – but simply reaching the national average should not and cannot be the target for the East of England. Universal high quality broadband must be an aspiration for a high value economy with strengths in innovation, and to help accommodate our changing working patterns.

[126] Ofcom, Fixed coverage local and unitary authority data, 2023

[127] East of England Local Government Association, Digital Infrastructure Update, 2023. which uses data from ThinkBroadband for August 2023

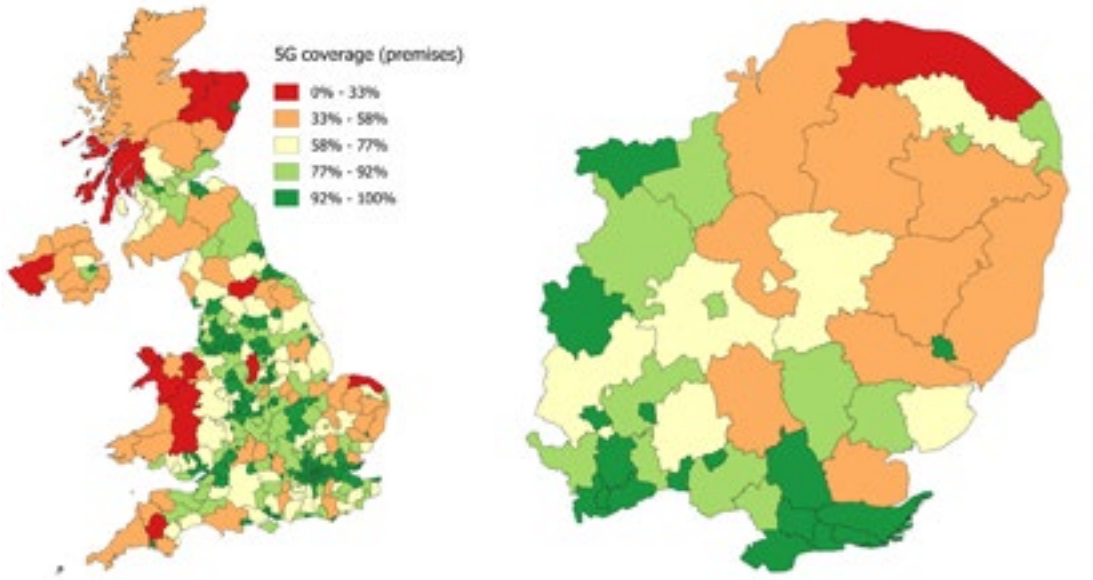
Mobile coverage

The Government's current target is to ensure 5G connectivity for 'all populated areas' and nationwide 4G coverage by 2030[128]. Whilst 5G is still being rolled out, there is a wide divergence between local authorities, as demonstrated by the maps below. In total, 77.2% of premises in the East of England have high confidence of 5G access outside from at least one provider, lower than the 85% coverage for the rest of the country.

5G coverage in urban areas and peripheral districts to London in Bedfordshire, Hertfordshire and Essex is strong, emphasised by the areas in darker green which have higher 5G coverage than the 85% across the UK, this includes 100% of premises in Watford, Harlow and Hertsmere covered by at least one provider. However, large rural and coastal parts of the region have relatively low 5G coverage, as shown by those in orange and red, particularly covering Norfolk, Suffolk and areas of Cambridgeshire. Coverage is particularly patchy in North Norfolk, which just 17% coverage, the second lowest in the UK ahead of only West Devon.

The importance of 5G cannot be overstated in helping to boost the economy and provide faster and more reliable connections, ultimately helping to drive productivity gains. It has been estimated that 5G can boost the UK economy by £43bn by 2030, with most of the benefits accruing in the latter half of the decade[129].

Figure 31: 5G coverage by region and local authority in the East of England (2023)[130]



The England average for premises with outdoor 4G coverage was close to 100%, and the East of England was in line with this average. However, this connection will not necessarily be of high quality or available to all customers. For example, just over 600,000 premises in the East of England do not have access to 4G from every provider that is strong enough to be used inside, while 25,000 homes don't have access to any 4G that's strong enough to be used indoors.

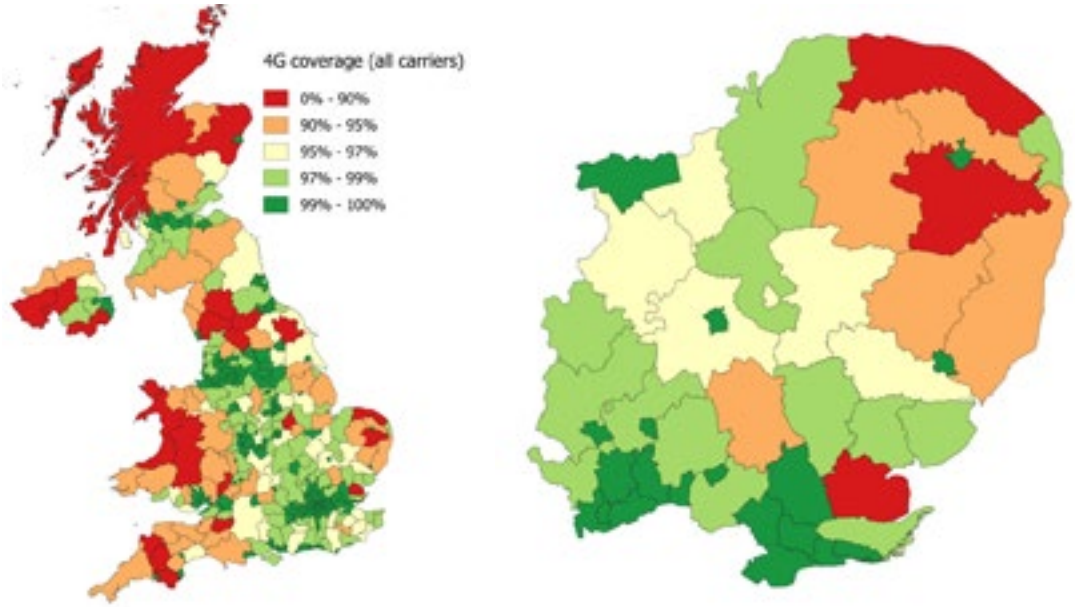
Coverage to the west of our region is stronger on average than coverage in the east. Three districts have 10% or more of premises without 4G coverage from all four operators including Maldon, North Norfolk and South Norfolk. Meanwhile, a significant number of districts also have worse 4G coverage than the UK average of 98.1% which receive 4G signal from all four operators. Given mobile network operators have already begun with the big switch off of 3G networks and powered copper networks, plans are needed to minimise any adverse impacts and to ensure that residents and businesses have access to the connections they require.

[128] Department for Science, Innovation and Technology, UK Wireless Infrastructure Strategy, 2023

[129] UKRI, 5G is boosting digital communications, 2022. PwC (2021)

[130] Ofcom, Mobile coverage, local and unitary authority data (with 5G), 2023

Figure 32: 4G coverage by region and local authority in the East of England (2023)[131]



In order to ensure that the residents and businesses have the digital connections they need, we ask Government to:

- Follow through with the national Wireless Strategy to boost the reliability of mobile and internet connectivity reporting measures.
- Look to hold both providers and the regulator to account, in part by ensuring that measurements of connectivity reporting are accurate.
- Provide more funding for the Gigabit voucher for rural communities.
- Increase maintenance budgets to support necessary repairs to our road and rail networks.
- Undertake a Risk Assessment of the 'Big Switch Off' of copper lines and 3G to ensure businesses and residents are protected from any adverse effects.
- Provide an up-to-date roadmap for the Shared Rural Network for the East of England.

[131] Ofcom, Mobile coverage, local and unitary authority data (with 5G), 2023

Energy

As noted above, the East of England Energy Group (EEEGR) has highlighted our region's prowess as a leader in energy production and distribution, supporting over 12,000 businesses and generating turnover of some £17bn per year. The sector employs around 85,000 people, growing by 14% since 2016. By 2050, our region will see a further £122bn invested into energy production[132].

Our region's strengths in energy production means that the East of England is a provider for energy across the country and requires adequate infrastructure to transfer energy from production sites to homes and businesses. This includes the infrastructure needed to provide sufficient and affordable energy to homes and businesses within our region itself.

Currently, businesses in the East of England spend on average £4,738 annually on energy bills, which is the third highest of any region in the UK. [133]Only two regions have higher business energy bills (Yorkshire and the Humber (£5,040). The South West and South East regions (often similar performing in other metrics to our region) have the lowest annual business energy bills of £2,592 and £2,367 respectively. These high energy bills in our region suggest our strengths in energy production are not felt by our communities and businesses, and that better infrastructure is needed to provide affordable energy.

It has been well voiced that the East of England is unique in terms of the multiple forms of energy generation we provide oil & gas, offshore wind, solar, nuclear and hydrogen for example, and there is no doubt that we can't be reliant on just one form of energy production. However, offshore wind is the most cost-effective form of generation[134] and, if the Government want to hit net zero targets, it's vital that pipeline projects go ahead without long consenting delays.

Offshore wind

Offshore wind plays a critical role in supporting net zero targets and boosting economic growth. The Government has ambitious targets to generate enough energy from offshore wind to power every home by 2030, but existing infrastructure simply does not have the capacity to transport the volume of energy that will be generated offshore. [135]The Offshore Wind Industry Council (OWIC) expects that the national offshore wind supply chain could deliver over £90bn of value to the UK economy by 2040. [136]Our location on the North Sea means that the East of England is vital in delivering the offshore energy generation and infrastructure needed to reach these ambitious targets. Currently, around 60% of the current offshore wind projects are looking to connect their energy onshore along the east coast, meaning that our coastal communities have a key part to play in this transition.

Hydrogen

Alongside the offshore wind and nuclear strengths, our region has the potential to expand our net zero contributions in the production of hydrogen. Hydrogen East is dedicated to stimulating and accelerating the hydrogen economy, bringing together parties and stakeholders. They identify options to deliver a viable route map that sees East Anglia (particularly Norfolk and Suffolk) as a leading 'hydrogen region' [137].

There is regional demand and vision for a hydrogen cluster (especially in transport), as well as universities conducting research into hydrogen applications. Coastal space gives good access to North Sea resources and integration of various existing energy infrastructure and resources, including Bacton and the gas network.

Ongoing work in Norfolk and Suffolk and support under the Net Zero Hydrogen Fund and other innovation support streams are helping to build a hydrogen cluster in our region. Assessment of local hydrogen use cases indicate that there is regional demand, which could grow notably by 2030. The map below outlines the possible hydrogen projects in our region.

[132] Figures taken from EEEGR website, 2023

[133] NatWest, No time to waste: How small businesses are getting savvy on energy savings, 2024

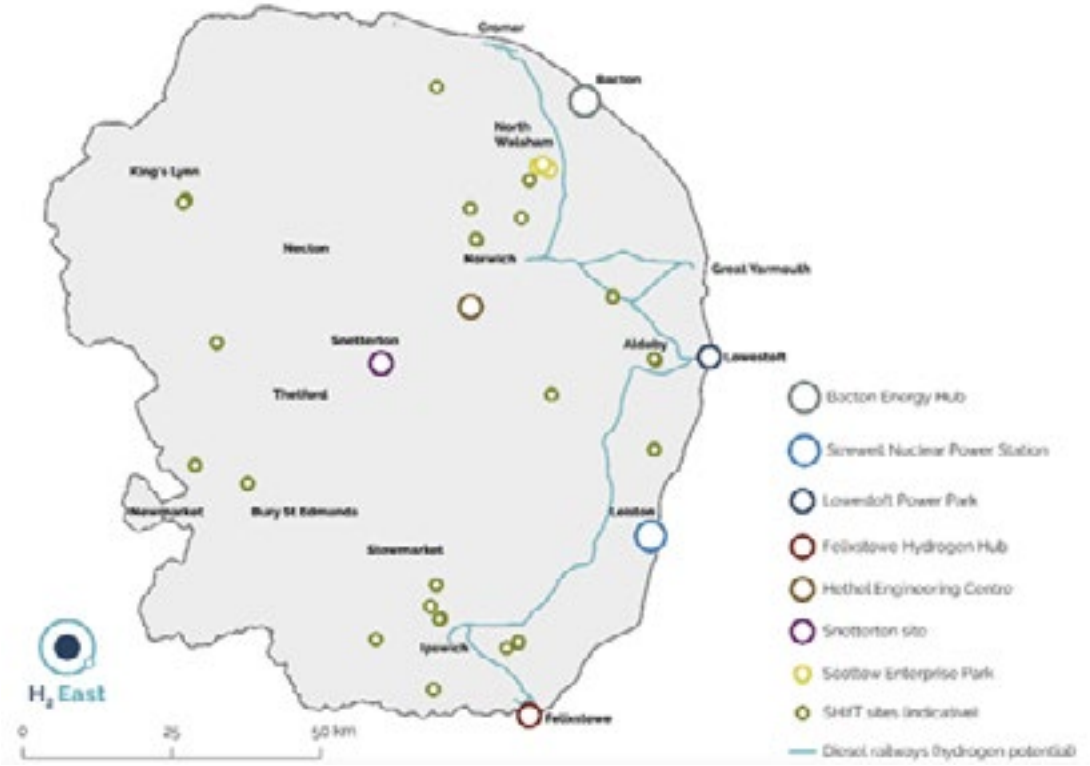
[134] Offshore Wind Industry Council, The UK Offshore Wind Industry: Supply Chain Review, 2019

[135] National Grid UK, 2024

[136] OWIC, UK Supply Chain Capability Analysis: Summary Report, 2023

[137] Hydrogen East, 2023

Figure 33: Hydrogen East and possible hydrogen projects[138]



The Freeport East Green Hydrogen Hub provides the potential for maritime decarbonisation on the use of hydrogen and its derivatives as a viable alternative fuel for shipping. This includes a 100MW Green Electrolyser at Felixstowe port and potential hydrogen refuelling infrastructure for HGVs and port operations. There is additional potential to develop up to 450MW of electrolyser capacity by 2035. [139]There are also hydrogen opportunities associated with the Lower Thames Crossing that could be beneficial for the Thames Freeport.

The Bacton Energy Hub is the conversion of Bacton gas terminal to focus on both green and blue hydrogen production, as well as carbon capture use and storage. It aims to become a focal point for hydrogen production and supply, due to existing gas infrastructure and geographic advantages. The project aims to increase growth, jobs and environmental benefits and is a key component to the regions transition to a low-carbon economy.

[138] Hydrogen East, The UK Hydrogen Strategy, the New Anglia "Hydrogen Hub" and a Different Type of Cluster, 2021

[139] FreeportsHub, Freeport East Green Hydrogen Hub, 2023

Ensuring a robust grid network

With the growth in new energy generation from offshore wind, nuclear power and interconnection with other countries, there will be more electricity connected than the network can currently accommodate. In East Anglia alone, the existing network carries around 3.2GW of electricity generation. Over the next decade, 15GW of new generation and 4.5GW of new interconnection is expected to be connected in the region[140]. This includes agreements in place with two offshore wind farm projects on the basis of their connection into the new East Anglia Connection substation (EAC).

Anecdotally we have heard from businesses who are looking to expand but are struggling to get the electricity they need due to grid connection bottlenecks for new developments, and in some cases National Grid have been unable to get them power for years.

Case study: Snetterton Commercial Hub

Snetterton Commercial Hub represents a key growth area in Breckland and is a key part of the Council's strategy to grow the local economy and capitalise on the opportunity presented by the Cambridge-Norwich Tech Corridor.

Comprised of a cooperative of landowners, each offering facilities targeted at a different business demographic, the site contains 50 hectares of developed land consisting of professional services, manufacturing, light industrial use, food processing, clean energy generation, warehousing and logistics – with further opportunities for motorsport, engineering, office, retail and leisure. It is already the biggest employment site in Breckland, and its growth plans go hand-in-hand with 9,000 new homes coming forward at Attleborough and Thetford.

However, growth at this site has been challenging because Snetterton, despite its comparatively good connectivity via the A11, is a location which has historically lacked sufficient infrastructure provision including the availability of accessible electrical capacity. The costs of the upgrades necessary became a barrier to any landowner or developer individually, meaning some form of public sector intervention was needed.

The council accessed capital funding through New Anglia Local Enterprise Partnership (LEP) and Norfolk Business Rates Pool to deliver a new primary substation last year, providing an initial capacity of 6 megavolt-amperes (MVA) but can accommodate up to two further transformers, thereby theoretically delivering an output of up to 36 MVA. The new primary substation has already leveraged between £2m and £3.5m of private sector investment, which will enable growth and further investment in the future.

Snetterton can therefore potentially serve as an example of effective public-private sector collaboration to deliver growth at scale, particularly in rural locations where infrastructure has not evolved organically in the same way as in other parts of the country.

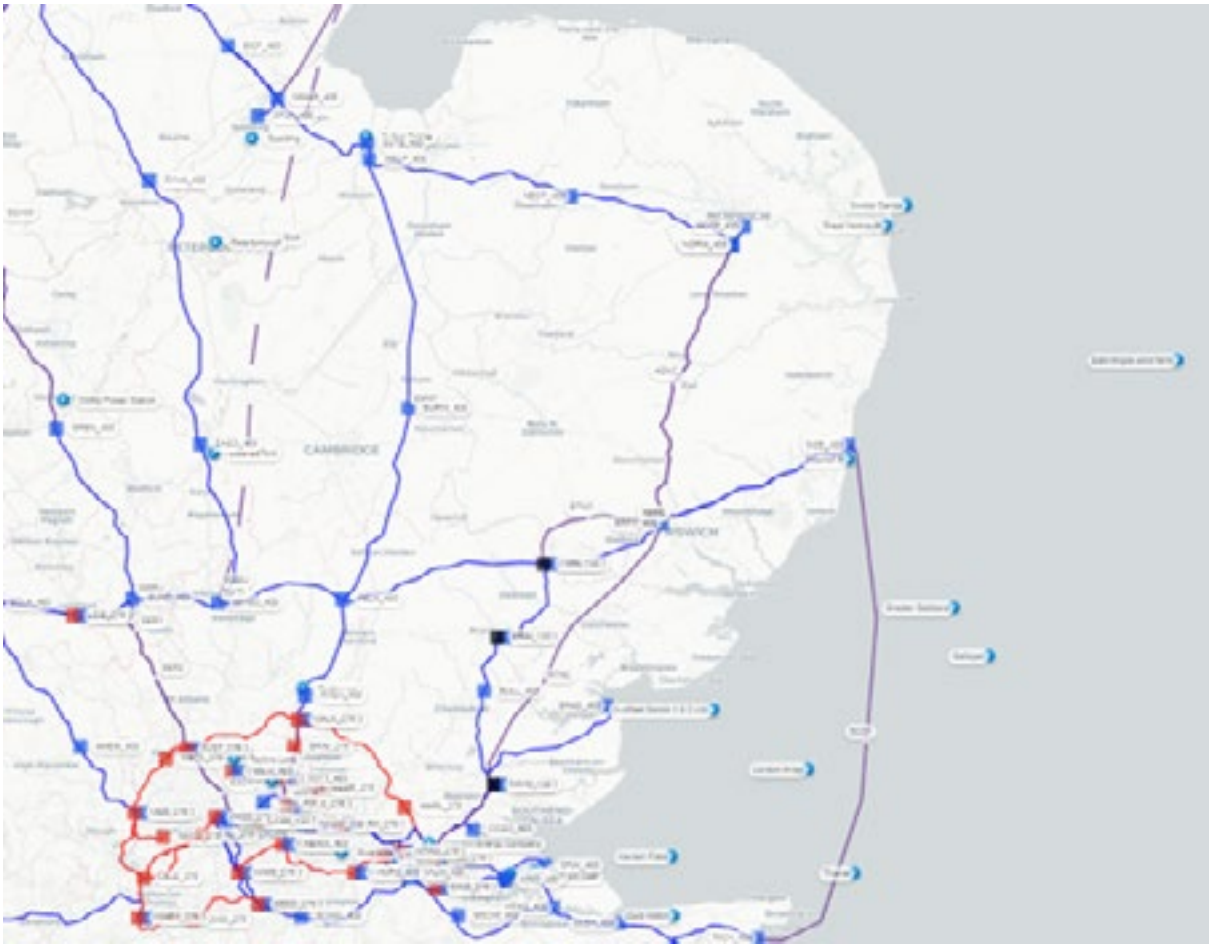
140 National Grid

There are also electricity grid challenges in the Greater Cambridge area driven by the high demand for new homes, businesses and electrification of transport and homes, as part of plans for growth across the city area. This raises the importance of support for local area energy planning, allowing local authorities to take a place specific approach to energy planning and to take local action in a way which maximises benefits to local residents and delivers cost savings. But major region wide improvements are crucial in ensuring the grid is fit for purpose and is able to accommodate sustainable growth across the East of England.

To address this and meet its statutory duties, National Grid needs to reinforce the electricity network. The reinforcement is needed to allow power to be imported to, and exported from the East of England, and to provide additional capability to allow power flows into and out of the south-east area to connect with areas of demand and interconnectors to Europe. Also, some of this power generated should benefit our residents and businesses, as we have frequently heard that residents and businesses don't necessarily feel the benefits of our energy generation capabilities.

The map below demonstrates the existing National Grid network in our region, including existing core circuit lines, existing power stations where electricity is generated and relevant substations.[141] The map also demonstrates new network infrastructure that is planned to be built by 2030. These are part of the Holistic Network Design (HND), which aims to provide a National Electricity Transmission System (NETS) including the onshore and offshore transmission network required to connect offshore wind and transfer power to where it is needed. These lines represent new circuits considered essential to withstand the additional power generated and transferred from new offshore wind farms.

Figure 34: Map of the National Grid Network in the East of England[142]



[141] Existing circuits are represented by blue lines, purple lines represent new or upgraded network infrastructure, power stations are represented by electricity icons, while substations are represented by blue squares

[142] The National Grid ESO, Pathway 2030 HND Interactive Map

Planned National Grid reinforcements as part of the Great Grid Upgrade in the East of England include:

Norwich to Tilbury: Approximately 183km of new electricity transmission reinforcement between Norwich and Tilbury. This will be made up mostly of overhead lines and pylons, along with some underground cables and a new 400 kV substation. Councillors in the East of England joined a roundtable discussion in April 2024 to bring together a regional, political position on these proposals. Views were shared that the project should be delayed at least until further evidence can be discussed and other proposals considered for viability due to the potentially highly detrimental impacts to communities.

Sea Link: Proposals to reinforce the electricity network between Suffolk and Kent via a new, primarily offshore, 2-gigawatt high voltage direct current link. It is split into three schemes including the offshore scheme approximately 130km of subsea HVDC cable, running between the Suffolk landfall location (between Aldeburgh and Thorpeness), and the Kent landfall location at Pegwell Bay. The proposal also includes onshore underground cabling, a converter station at Saxmundham and a substation at Friston.

Grain to Tilbury: A proposed electricity infrastructure upgrade, involving the replacement of the existing 1960s Thames Cable Tunnel beneath the Thames between Tilbury and Gravesend. Proposals include the construction of a new tunnel, the installation of new cabling and the construction of two headhouses at either end of the tunnel.

Bramford to Twinstead: Network reinforcement between Bramford Substation in Suffolk and Twinstead Tee in Essex. Proposals include constructing up to 18km of overhead line and around 11km of underground cable (through the Dedham Vale AONB and in the Stour Valley).

Norwich Main substation extension: Extension of the existing Norwich Main substation will be needed over the next few years to enable new sources of electricity generation to connect into the grid, including the Hornsea Project Three offshore wind farm, the Equinor Sheringham Shoal and Dudgeon wind farm extensions.

However, it is important that these investments, which are vital from a national perspective, are delivered in a way which supports the natural landscape and our countryside, towns and cities. It is important that communities do not feel as though they are bearing the costs of this vital infrastructure without receiving the benefits. In some cases, this will mean additional investment to tunnel key connections, as well as exploring the possibility of offshore connections instead of using overhead lines and pylons. It will also mean ensuring that proposed grid upgrades also support local growth plans, and that local people are supported to get jobs in the industry. Resolving these challenges will help deliver necessary improvements in a timelier way that is beneficial to the region as well as the rest of the country.

In order to ensure minimal delays to renewable energy projects and a transition towards a national clean energy mix, we ask Government to:

- Ensure sufficient grid reinforcements take place to allow for clean energy developments.
- Consideration for alternatives to current National Grid overhead lines and pylon proposals such as offshore solutions.
- Collaborate with National Grid and distribution network operators to explore innovative power solutions for constrained areas.
- Ensure that our communities benefit from energy infrastructure investments
- Investment in hydrogen network opportunities to maximise the potential of green hydrogen.

Water

The East of England faces a number of challenges relating to water supply. The recent Anglian Water report 'Thriving East' [143], highlights some of these key challenges. Already one of the hottest and driest areas across the country, with the East Anglia region in 'drought status' for over a year until late 2023, the Met Office predicts that by 2040 rainfall in the region will average 2.14mm per day, significantly below the national average of 2.85mm – and that the East of England will be hotter at 11.4 degrees compared to 11 degrees for the national average[144]. Accordingly, Anglian Water estimates there will be 38% less water to supply to customers in their service area by 2050. Whilst the Anglian Water service area does not directly cover the whole of the East of England, it is likely that the East of England region is amongst the parts of the Anglian Water service area that are worst affected by these issues, being drier and experiencing less rainfall. Therefore, the findings of this report are highly relevant to our region.

A parallel piece of work by Water Resources East[145] estimate that unless action is taken, there will be water shortages of 800 million litres per day by 2050 across Bedfordshire, Cambridgeshire, Essex, Norfolk and Suffolk – the equivalent of a third of current water use in the region[146]. The Water Resources South East area, which covers Hertfordshire, is also facing shortfalls of up to 2.8 billion litres by 2050 due to climate change, population growth and increased protection for the environment[147].

Our region has high water needs due to the high concentration of agriculture and relevant advanced manufacturing sectors. Non-domestic water usage, heavily linked to agriculture, is the highest nationally, risking future growth if resources are insufficient. There are already examples being reported of businesses being unable to expand due to lack of water availability, with some businesses reporting that they are considering relocating from the area as a result.

Water scarcity is also creating challenges around the major West Cambridge development led by the University of Cambridge (including surrounding housing development), with further development currently halted due to the need to address water availability. Water supply issues are particularly acute in Cambridgeshire and will remain so with projected rainfall of just 1.9mm in 2040. Plans to build housing on Bourn Airfield and Darwin Green have also received objections, among the first times that the Environment Agency have raised such objections to new housing over water supply concerns[148].

This creates a damaging barrier to economic growth, as well as creating a strategic UK risk for food production. These pressures are expected to be further exacerbated by increasing population and housing, with a further 470,000 residents expected across the region by 2043[149].

Recently the Government have addressed the issue of water scarcity in the Greater Cambridge area, a critical factor holding back sustainable expansion of Cambridge, hampering a significant national growth opportunity. Defra released[150] a plan to tackle water scarcity in the long-term by assuring the delivery of long-term major water supply infrastructure including the proposed Grafham transfer and Fens Reservoir, supporting the development of a plan for strategic water resources over the long-term and using Cambridge as an area for innovation in water management in agriculture and through nature-based solutions.

143 Anglian Water, Thriving East, 2023. Note: the Anglian Water analysis covers Bedfordshire, Cambridgeshire, Essex, Norfolk, Suffolk, but not Hertfordshire. It also includes Buckinghamshire, Lincolnshire, Northamptonshire and Rutland, which are not part of the East of England. Nonetheless, as a recent summary of key issues this is highly relevant for our region

144 Anglian Water, Thriving East, 2023. Temperature corresponds to projections at 1.5 metres

145 Analysis again covers Bedfordshire, Cambridgeshire, Essex, Norfolk, Suffolk, but not Hertfordshire. It also includes Lincolnshire

146 Water Resources East, Regional Water Resources Plan, 2023

147 Water Resources South East, Revised Draft Regional Plan, 2023

148 BBC News, Water Supply fears prompt first housing objections, 26 June 2023

149 ONS, Subnational population projections for England: 2018-based, released 2020

150 Department for Environment, Food & Rural Affairs, Addressing water scarcity in Greater Cambridge: update on Government measures, 6 March 2024

Case Study: Future growth in Cambridge

The Secretary of State for Levelling Up, Housing and Communities unveiled updated plans in the 'Case for Cambridge', setting out the Government's vision for Growth in Cambridge up to 2050, with up to 150,000 new homes built in and around the city.

In a joint statement, the leaders of Cambridge City Council, Cambridgeshire District Council, Cambridgeshire County Council and the Combined Authority Mayor raised concerns over the housing target, given the 50,000 homes identified in the emerging Greater Cambridge Local Plan is already challenging to bring forward, and that Government need to support on tackling some of the blockers to high quality sustainable growth.

This includes the extreme water shortages in the region, although Defra has recently announced plans on how to tackle this including the proposed Grafham transfer and Fens Reservoir. But other key challenges remain in supporting sustainable growth in Cambridgeshire.

Local leaders and business representatives have asked Government for further support at a city level around resolving the areas water supply challenges and funding to support a Transport & Works Act application for a scheme that would link the city centre to the Cambridge Biomedical Campus and the southern cluster including Babraham. Further calls include support for a scalable solution to facilitate expanded growth ambitions with future public transport solutions, matching population growth with health and social care investment, and support for specific sites – notably the relocation of the Anglian Water sewage treatment works in North East Cambridge and the relocation of Marshalls to Cranfield to unlock development at Cambridge East.

There are also proposals for a new waterway, linking the Grand Union Canal at Milton Keynes with the River Great Ouse in Bedford, with potential benefits including improved connectivity between existing rivers, canals, waterbodies and wildlife corridors, improved water resilience and flood risk management, and providing opportunities for nature-based water transfer between regions[151].

Short-term constraints are planned to be tackled by supporting increased water efficiency, reuse and offsetting, which will prime a 'water credits system'. This approach is welcome, and potentially offers a template for addressing similar challenges across the region. But we must also consider the link between water supply and the need to protect and enhance the water environment. A review of building regulations to support the sustainable use of water in new developments should be considered, and other regulation changes to support innovation in water efficiency.

This raises the need for urgent national action to accelerate work to substantially and speedily reduce water pollution emissions, which are having such profound negative impacts on the natural environment, and which are causing increasing levels of public concern. This needs to include action from Government both directly with the providers but also in ensuring sufficient resourcing for regulators.

The water industry in our region is also facing uncertainty as Thames Water, one of the six water companies serving part of the East of England, face mounting debts[152]. We call on the Government to stabilise the sector in light of the challenges faced by Thames Water and potential impact this could have on customers in our region.

[151] Water Resources East, Regional Water Resources Plan for Eastern England, 2023

[152] BBC News, Thames Water troubles swell as parent firm defaults on debt, 5 April 2024

In order to address current concerns about the water industry we call on Government:

- To provide stability in light of troubles faced by Thames Water.
- To take urgent action at a national level to reduce water pollution, both directly with providers and ensuring sufficient resourcing for regulators.

In order to avoid water supply continuing to be a barrier to our economy, we call on Government to support long-term major projects:

- Assure the delivery of a major new reservoir in Fenland expected to supply 250,000 households a year. New Lincolnshire reservoir also relevant for our region.
- An interim solution to transfer water from Grafham Water to Cambridge to help alleviate pressures on sensitive chalk rivers before the Fens reservoir comes into supply.
- A smaller winter storage reservoir in North Suffolk by 2040 along with water reuse schemes at Colchester and Lowestoft.
- Greater investment in network leakage identification and mitigation.
- More national support for business and domestic water efficiency – including smart metering.
- Investing ahead of need to support growth – including desalination.

Climate change mitigation

Total greenhouse gas emissions produced within the East of England have fallen by 34% since 2005, despite a slight increase between 2020 and 2021. Although there has been obvious progress, the East of England lags slightly behind the 39% reduction in greenhouse gas emissions across the UK, but greenhouse gas emissions per capita are in line with national emissions per capita at 6.0 tonnes per person.

Figure 35: Territorial greenhouse gas emissions (ktCO2) within the East of England (2005-21)[153]

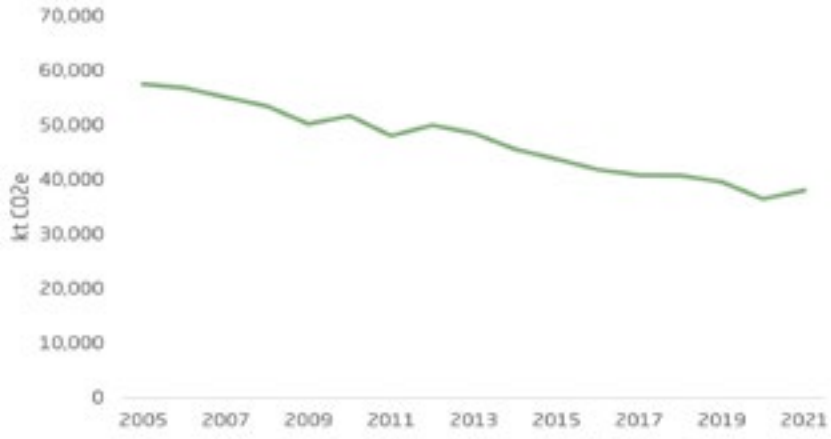
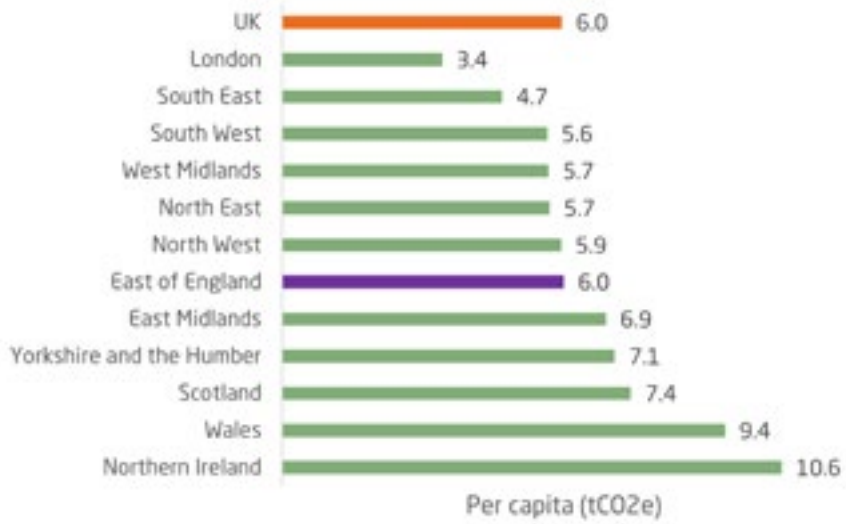


Figure 36: Greenhouse gas emissions per capita (tCO2e)[154]



Industry and agriculture make smaller contributions to total greenhouse gas emissions in the East of England as compared to nationally. This shows the progress our agricultural industry has made in adopting more advanced methods and how agri-tech research may be contributing to reducing emissions. However, the largest emitting sectors in the East of England are transport and domestic, emphasising the need for energy and grid infrastructure investments to drive transition in these areas.

[153] Department for Energy Security and Net Zero and Department for Business, Energy & Industrial Strategy, UK local authority and regional greenhouse gas emissions national statistics: 2005-2021, released 2022

[154] Department for Energy Security and Net Zero and Department for Business, Energy & Industrial Strategy, UK local authority and regional greenhouse gas emissions national statistics: 2005-2021, released 2022

There has been significant progress made in terms of domestic greenhouse gas emission reductions, but emissions have fallen by a smaller extent for transport, which contributes a third of greenhouse gas emissions in the East of England. The rurality of parts of the region means there is a higher reliance on private forms of transport, reflected by road transport contributing a higher proportion of emissions in the region compared to nationally. As well as this, congestion problems on our strategic road network, plus the movement of goods given our position as an international gateway, contributes towards higher transport emissions.

Greenhouse gas emissions have fallen across the industry, commercial, domestic, public sector, transport and agriculture sectors in the East of England to varying levels. Commercial emissions saw the greatest fall between 2005-21 whereas emissions fell least for transport and agriculture. This broadly follows the sectoral trends across the UK – where emissions have fallen by similar levels, although to a slightly lower degree across industry and transport.

Figure 37: Contribution to total greenhouse gas emissions by sector (2021)[155]

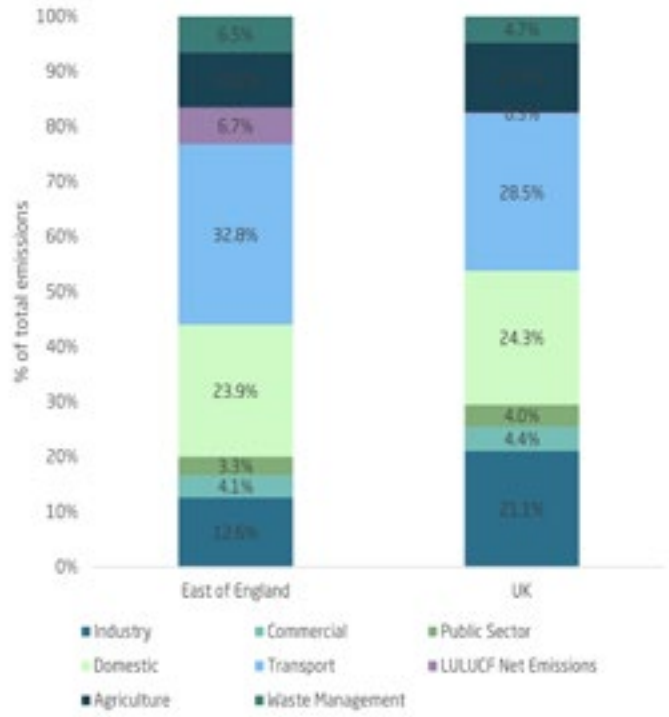
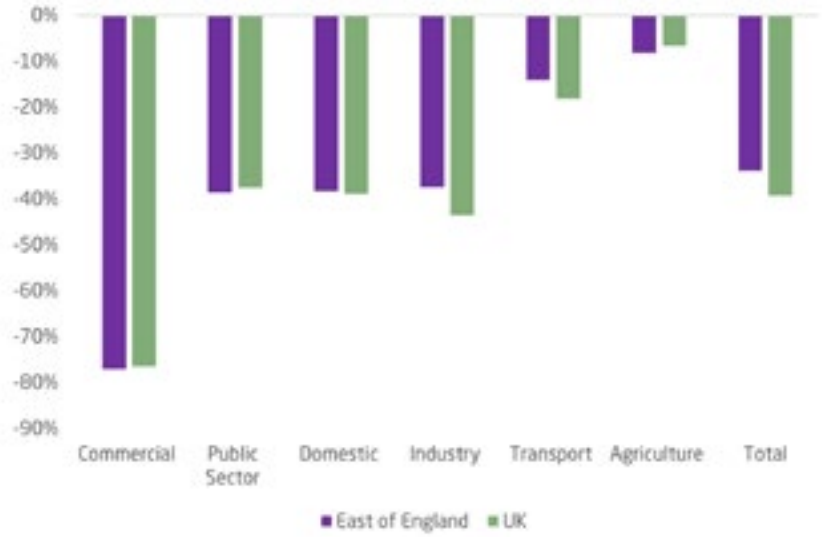


Figure 38: Change in greenhouse gas emissions by sector (2005-21)[156]



[155] Department for Energy Security and Net Zero and Department for Business, Energy & Industrial Strategy, UK local authority and regional greenhouse gas emissions national statistics: 2005-2021, released 2022

[156] Department for Energy Security and Net Zero and Department for Business, Energy & Industrial Strategy, UK local authority and regional greenhouse gas emissions national statistics: 2005-2021, released 2022

Flooding

At the same time as the region faces drought, flooding is also an issue. One fifth of the East of England lies below sea level[157] and 1.2% of properties are at high risk from flooding, well above the national average – making the region highly vulnerable[158]. Damage to our region's chalk aquifers and waterways will only increase the likelihood of flooding.

Currently, the flood management landscape is complex, involving water companies, the Environment Agency and local authorities. Plan cycles don't always align – for example, Anglian Water has a five-year plan whilst Environment Agency has a seven-year plan. Whilst there are some good examples of local partnership, there is a need for a regional strategic response.

The map below shows that large areas of our region sit within flood zone 3, which has the highest risk of flooding. These areas have a 1 in 100 or greater chance of flooding from rivers; or a 1 in 200 (0.5%) or greater chance of flooding from the sea each year. Large areas of land in the northwest of our region and coastal communities in Norfolk, Suffolk and Essex are within flood zone 3 and therefore at higher risk of flooding. Our areas within zone 3 cover a lot of our region's natural agricultural assets. Nationally, 60% of grade 1 farmland is within flood zone 3, which is likely similar in our region.

Figure 39: Flood risk from rivers and the sea (2024)[159]

A high risk of flooding has a negative impact on developing housing and commercial sites where there is already a lot of demand in our region. There is a clear need to invest in flood defences in order to safeguard our natural assets and ensure there is the right balance of land usage between our homes, commercial space, farming and nature.

[157] ClimateUK, A Summary of Climate Change Risks for the East of England, 2012. To coincide with the publication of the UK Climate Change Risk Assessment (CCRA) 2012

[158] Anglian Water, Thriving East, 2023

[159] Environment Agency, Flood Map for Planning (Rivers and Sea) - Flood Zone 3, 2024

Case study: Lowestoft Tidal Barrier

Multiple regeneration schemes have been proposed in Lowestoft to help regenerate the town. The Kirkley Waterfront site is dominated by former industrial/commercial sites which have been semi or fully derelict for many years.

New regeneration plans include improvements to Station Square and town centre, and development at the Kirkley Waterfront bordering the south side of Lake Lothing, a deprived area in Lowestoft. These plans anticipate developing 1,380 homes, 7.5 hectares of employment land and providing potential grow-on space for the clean energy sector, marine facilities and a local retail centre. This would be transformational for Lowestoft

However, flood risk is a major barrier to regeneration in the town. Parts of the town centre and most of the area on the banks of Lake Lothing are in tidal flood zone 2 or 3. A devasting flood in December 2013 caused tens of millions of pounds of damage to homes, businesses and infrastructure. With sea levels rising and no significant flood defences in place, this has a major negative effect on land and property values, which are already low in much of Lowestoft. A flood of the same magnitude in 2024 would cause an estimated £168m of damage.

The Council has been working on a proposal to develop a tidal barrier but due to design changes, major cost increases and no funding guaranteed to bridge a £124m budget gap, work on the project was stopped in January 2024. Without additional support, tidal flood risk remains high, stalling much needed regeneration and failing to join up previous Government investment via Towns Fund and on the Third Crossing 'Gull Wing' bridge over Lake Lothing.

Further support would allow us to protect our communities as we mitigate against the impacts from climate change, while opening up further investment opportunities as a centre for clean energy and helping to provide more opportunities for those in some of our more disadvantaged communities.

Coastal erosion

While climate change is increasing the risk of flooding in our coastal communities, it also exacerbates the risk of coastal erosion, particularly in some of our communities in Norfolk and Suffolk through rising sea levels. The Environment Agency report that Norfolk and Suffolk have some of the fastest eroding coasts in Europe, with over 2,500 homes at direct coastal risk. Businesses are also at risk of having to relocate due to loss of property, infrastructure and utilities[160]. This creates not only physical risk and loss but places a mental health toll on our residents in affected communities[161].

Hemsby is a drastic example of the impacts coastal erosion are already having on some of our rural communities. It has been estimated that Hemsby has lost 300m of its coastline since the 1970s, and in December last year a further five properties had to be demolished due to the risk of them collapsing into the sea[162]. More than 90 homes were at risk of being lost to the sea over the next 25 years.

Happisburgh is another community which is already feeling the impacts of increased coastal erosion. Coastal defences built at Happisburgh have slowed down the rate of retreat, but large sections are now in disrepair[163] and 34 homes have been lost over the last 20 years, with other infrastructure including Beach Road car park also at high risk of being lost[164].

160 Environment Agency, Resilient Coasts – Great Yarmouth and East Suffolk

161 BBC News: Coastal erosion in Norfolk and Suffolk 'affecting mental health', 31 January 2023

162 BBC News: Plans to use land to rebuild Hemsby homes lost to erosion, 5 March 2024

163 British Geological Survey, Coastal erosion at Happisburgh, Norfolk

164 BBC News, Erosion leaves car park just metres from cliff edge, 3 December 2023

Hemsby and Happisburgh are just two examples where coastal erosion threatens to destroy communities, but other communities including Great Yarmouth, Ostend, Overstrand, Pakefield and Lowestoft are facing similar threats. Coastal erosion also threatens some of our strategic infrastructure including Sizewell and Bacton. To help mitigate against this, North Norfolk Council have led a multi partner sandscaping scheme to protect residents at Walcott and Bacton, and the Gas Terminal, providing natural protection by improving beach levels that absorb the sea forces before they reach the cliff and further defences[165].

More needs to be done at a regional level, including an independent climate change risk assessment so we can plan effectively for the impacts of climate change. Whilst this is currently undertaken nationally, the unique circumstances of the East of England and our high exposure to these risks means that we require a region-specific assessment so that we can plan accordingly.

We also require additional resources and collaboration to form place-based action networks to invest where action is needed most to protect our communities at highest risk from the impacts of climate change – including those greatest at risk from flooding and coastal erosion. Regional partners have already established a Regional Climate Change Forum to explore opportunities for greater collaboration and consistency across the region's local authorities and climate change partnerships, and advocate jointly for greater central Government support.

In order to support this, we call on Government to ensure our communities are fully protected against the impacts from climate change:

- Independent climate change risk assessment for the East of England.
- Resources to facilitate place-based climate action networks.
- Investment needed in strategic flood defences to protect our communities and key economic assets and to enable growth in currently at-risk areas.
- Investment needed in waste facilities, wastewater and minerals provision to support the continued growth of our communities.
- Greater, simplified, less competitive funding for councils to deliver against net zero ambitions.

165 North Norfolk District Council, Bacton to Walcott Coastal Management

Improving regional co-ordination

The above sections clearly set out a range of systemic challenges which cannot be solved purely within local areas, but instead need a region-wide approach. Partly, this reflects local capacity challenges that are not unique to the East of England. Between 2013 and 2020 a quarter of local authority planners left the profession[166]. 82% of local authority planning departments report difficulties hiring planners[167]. This has created significant capacity challenges in the sector which are reflected across the East of England too, with many authorities in the region also exposed to competition from London local authorities as well.

Capacity challenges are also evident across utility companies and national agencies such as the Environment Agency, which means that these organisations struggle to engage with district councils. There are a number of planning efforts in the region – such as the two Sub-national Transport Bodies (STBs), as well as Joint Planning Committees and Climate Change Partnerships – which reflect the significant effort which local authorities are undertaking to work in partnership to address these pressing challenges.

Nonetheless, these efforts are limited in their geographic and sectoral scope, creating a complex patchwork of planning efforts across public and private organisations that do not provide the supporting framework for growth which our region needs. Our utility firms are similarly hampered by national regulatory frameworks which do not allow them to plan effectively ahead of need, whilst major national assets like Stansted Airport and our Freeports do not have the supporting infrastructure they need to grow.

Therefore we need an improved approach to regional co-ordination. This must be owned and delivered by local government in the region. But it must also be a forum for bringing together a range of partners with responsibility for delivering the range of infrastructure we need, including: our STBs, business representative groups, universities, the Regional Climate Change Forum, utilities, infrastructure companies and Freeports.

This improved co-ordination also requires active participation and support from the Government. We believe that jointly we can identify and address key issues in our economy and infrastructure that will be beneficial to our region and the whole of the UK.

A key enabler will be to bring regional partners together to co-ordinate a stronger regional approach to infrastructure. This co-ordination should include representation from: local government, STBs, business representative groups, universities, the Regional Climate Change Forum, utilities, infrastructure companies and Freeports. We ask for support and engagement from Government to ensure that our regional work informs and drives stronger public investment.

We envisage regional co-ordination covering the following:

- Drawing together and evidencing our regional transport priorities
- Investments in digital connectivity infrastructure to ensure all our residents and businesses can benefit from this.
- Investments needed in water and energy infrastructure to support the development of major sites as recognised in our Local Plans.
- Investments needed in strategic flood defences to protect our communities and key economic assets, and to enable growth in currently at-risk areas.
- Investments needed in waste facilities, wastewater and minerals provision to support the continued growth of our communities.
- Ensuring that national approvals do not become a significant delaying factor on development.

As part of developing stronger regional co-ordination, we ask for support and to work in partnership with Government and alongside regional partners to develop a full economic analysis of the impact of required infrastructure to make a more quantified case for long-term funding.

166 RTPI, Interim State of the Profession, 2023

167 RTPI, Interim State of the Profession, 2023

8 Levelling Up

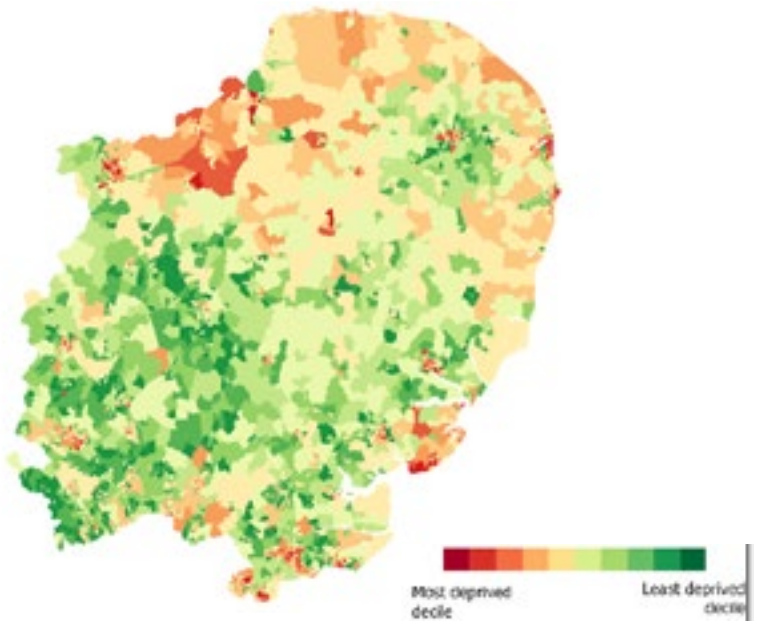
Despite being a major economic contributor, we have challenges around levelling up our communities. There are pockets of entrenched deprivation in some of our urban centres – but particularly in some of our rural and coastal communities, skills participation is amongst the lowest in the country, creating inequality and challenges around accessing health services.

Deprivation[168]

As a whole, the East of England is less deprived than the England average, with a larger proportion of LSOAs in the least deprived half of neighbourhoods nationally than the most deprived half. Notably, western parts of the region are amongst the least deprived in England. These are often in areas that are of a commutable distance from the economic hotspots of London and Cambridge. Large parts of Hertfordshire, Bedfordshire, Southern Cambridgeshire and certain commuter towns in Essex often have neighbourhoods amongst the top 30% least deprived nationally. Some surrounding areas of Norwich also see relatively low levels of deprivation.

However, there are clear geographic disparities in deprivation, in particular coastal neighbourhoods and rural areas of Tendring, Fenland, Southend-on-Sea, Great Yarmouth, Breckland, King's Lynn and West Norfolk, and Lowestoft fall among the top 20% most deprived neighbourhoods nationally. Some of our neighbourhoods sit right at the extreme end of this including an area to the east of Jaywick which was the most deprived nationally in the 2019 IMD, the Waveney Horn Hill area in Lowestoft and Middlegate in Great Yarmouth. Some of our larger inland urban areas also have neighbourhoods among the top 20% most deprived neighbourhoods nationally, including Norwich, Basildon, Peterborough, Luton, Bedford, Ipswich, Colchester and Thurrock.

Figure 40: Index of Multiple Deprivation map for the East of England (2019)[169]

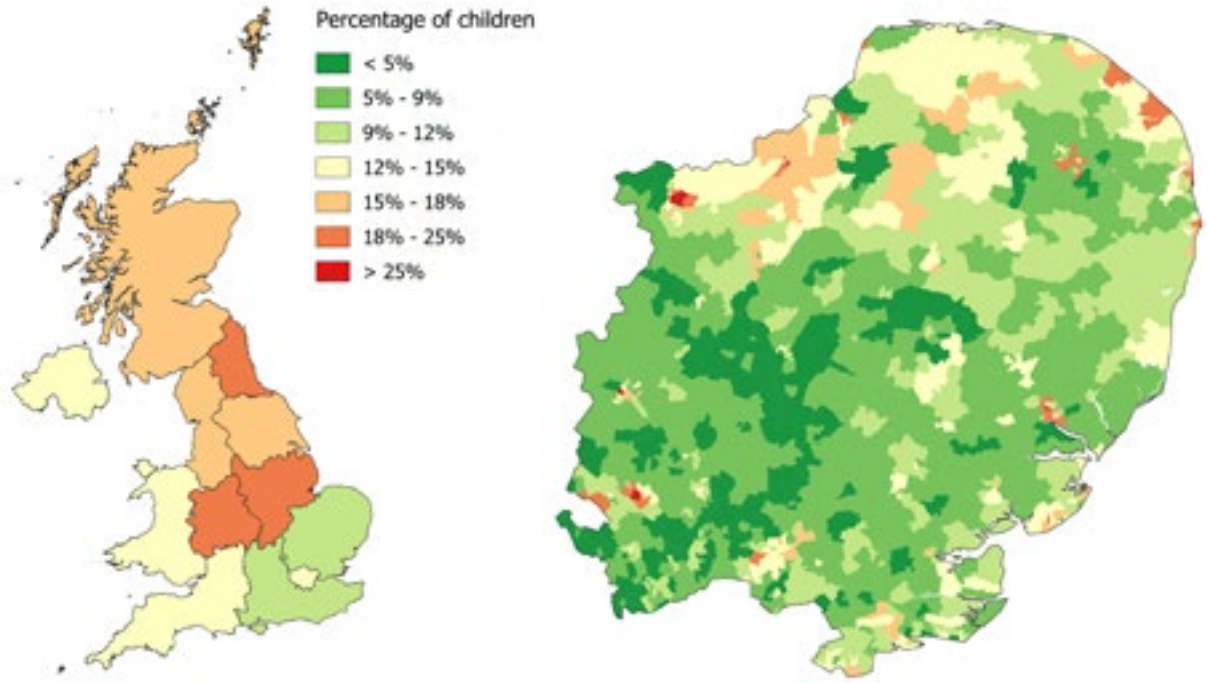


In 2022, there were 170,000 children living in relative low income families in the East of England. At 14.3% of children, this is well below the 20% average across the UK, and the lowest across all regions. However, the map below shows that while large parts of our region do have low levels of child poverty, some disparities remain. In particular, Peterborough and Luton have five and three wards respectively with over 25% of children living in poverty. Bedford, Ipswich and Wisbech each also have one neighbourhood with over a quarter of children living in poverty.

[168] Note: this section, and subsequent sections, draw on the Index of Multiple Deprivation (IMD). The indices of deprivation (IoD) measure relative levels of deprivation in 32,844 Lower-layer Super Output Areas (LSOAs) – approximately equivalent to neighbourhood level. These indices are used to create the Index of Multiple Deprivation (IMD) which provides an overall measure of deprivation for an area in relation to the rest of England. The IMD measure is comprised of seven different domains with different weightings, which combine to create the overall measure. The IMD is currently being revised. The version referred to here is from 2019, but we suggest that this still has validity, given that many of the issues identified in the IMD are entrenched and unlikely to have changed significantly since 2019.

[169] Ministry of Housing, Communities & Local Government, English indices of deprivation, September 2019

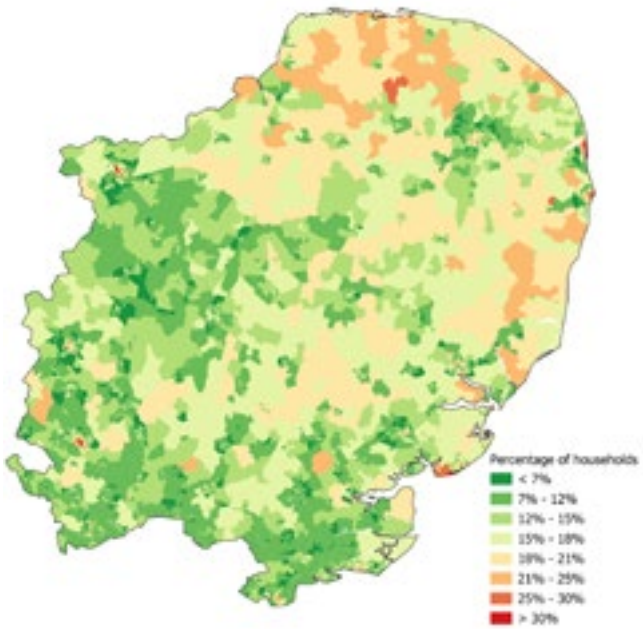
Figure 41: Percentage of children (aged under 16 living in absolute low income families by region and ward (2022)[170]



In 2023, 10.3% of households in the East of England were in fuel poverty. Again, this points to a relatively low aggregate level of poverty in the region, with the region third lowest of all English regions and below the English average of 13% of households.

However, this aggregate level conceals some important differences across the region, illustrated in the map below. The share of households which are fuel poor is not consistent throughout the region, with fuel poverty more prevalent in urban and coastal communities. Coastal towns such as Great Yarmouth, Lowestoft and Clacton-on-Sea have neighbourhoods where fuel poverty exceeds 30% of households which can also be seen in some of our larger urban centres such as Luton and Peterborough.

Figure 42: Proportion of households that are fuel poor, by LSOA (2021)[171]



Recent targeted capital funding as allocated through the Levelling Up Fund is welcome in areas such as Tendring. But given the challenges identified, particularly across many of our rural and coastal areas, it is important that future policy has a focus on rural and coastal areas when designing interventions or considering funding allocation, and not just urban centres.

[170] Department for Work and Pensions, Children in low income families: local area statistics, 2023

[171] Department for Energy Security and Net Zero, Sub-regional fuel poverty data, 2023

Skills

Residents face challenges accessing skills, with further education participation rates amongst the lowest in the country. We also struggle to attract and retain high skilled workers, with a lower proportion of our residents qualified to degree level or above.

Further education

In further education, skills participation and achievements have been declining significantly across England, including the East of England. Participation in further education and skills has fallen from 175,000 in 2018/19 to 161,000 in the latest full academic year in 2022/23. Using indicative participation rates per 100,000 population to compare across regions shows that the East of England had the lowest participation rate of all English regions at 4,337 per 100,000 population, 19% below the national average.

Figure 43: Further education and skills participation rate by region[172]

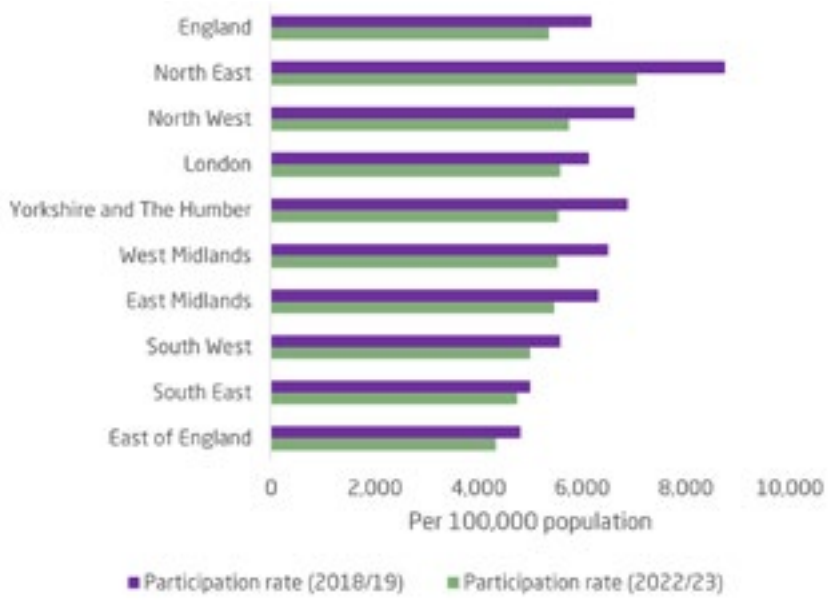
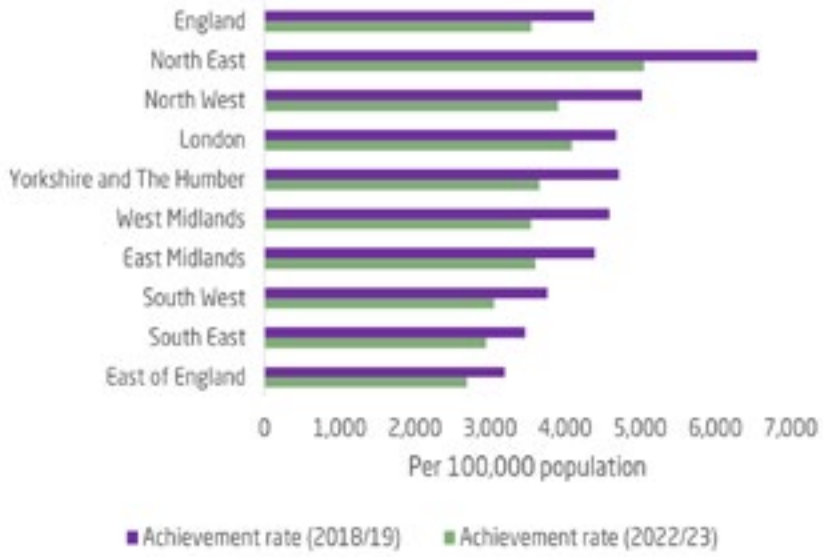


Figure 44: Further education and skills achievement rates by region[173]



Achievements in further education have also fallen from 116,500 to 100,000 over the same period, and similarly achievement rates are the lowest in the East of England across England at 2,695 per 100,000 population – almost 1,000 achievements per 100,000 population below (24%) the national average.

[172] Department for Education, Further Education and Skills (2022/23), 2023

[173] Department for Education, Further Education and Skills (2022/23), 2023

Apprenticeships

In further education, skills participation and achievements have been declining significantly across England, including the East of England. Participation in further education and skills has fallen from 175,000 in 2018/19 to 161,000 in the latest full academic year in 2022/23. Using indicative participation rates per 100,000 population to compare across regions shows that the East of England had the lowest participation rate of all English region at 4,337 per 100,000 population, 19% below the national average.

Figure 45: Apprenticeship participation and achievement rates by region (2022/23)

Qualifications

We can explore skills levels across our working age population by using estimates for those who have achieved different levels of qualifications using the Registered Qualifications Framework (RQF). The RQF framework has nine levels from Entry Level through to Level 8 with the level of a qualification ascending with its level of difficulty[174].

As a whole, the region has a relatively low proportion of the population with no qualifications at 5.7% compared to 7% across the UK, and the region has the third lowest proportion of residents with no qualifications. However, the East of England has a higher proportion qualified to RQF2 only, equivalent to five GCSEs at grades A-C than compared to the UK average, and a slightly lower proportion qualified to RQF4+ (equivalent to degree level and above), at 42% of the population compared to 46% nationally.

This is noteworthy given the relatively high level of high productivity and technology businesses in the region. It may suggest that fewer residents in the region are gaining these skills, or that the region is weaker in attracting / retaining workers that have completed education to a degree level.

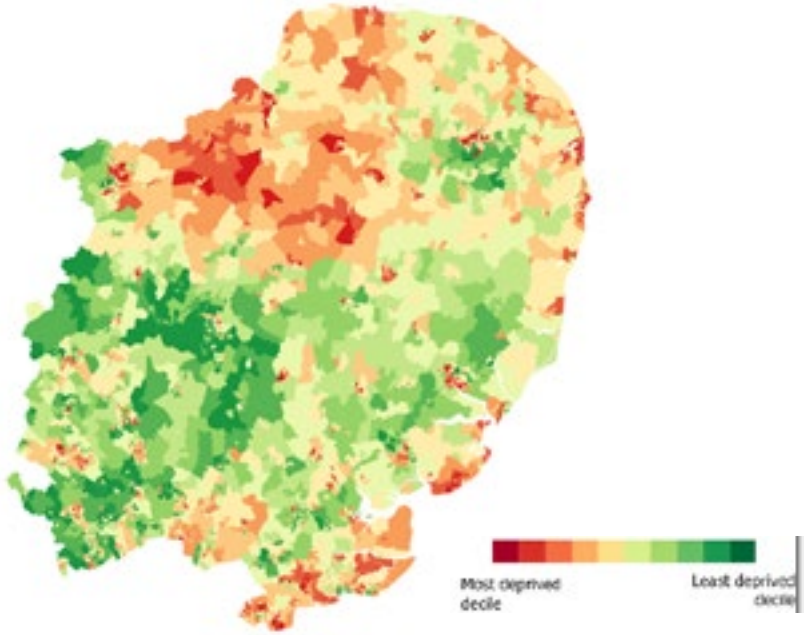
[174] RQF1: fewer than 5 GCSEs at grades A-C, foundation GNVQ, NVQ 1, intermediate 1 national qualification (Scotland) or equivalent
RQF2: 5 or more GCSEs at grades A-C, intermediate GNVQ, NVQ 2, intermediate 2 national qualification (Scotland) or equivalent
RQF3: 2 or more A levels, advanced GNVQ, NVQ 3, 2 or more higher or advanced higher national qualifications (Scotland) or equivalent
RQF4+: HND, Degree and Higher Degree level qualifications or equivalent

Figure 46: Regulated Qualifications Framework (RQF) attainment by level (2022)[175]

The geographic implications of these trends are shown in the map below which shows relative skills deprivation as per the Education, Skills and Training Deprivation Domain of the Index of Multiple Deprivation. This measures the lack of attainment and skills in the local population. The indicators fall into two sub-domains: one relating to children and young people and one relating to adult skills[176].

Skills deprivation in the East of England follows a similar trend to the overall deprivation which we presented previously, but is even more exaggerated, with higher levels of relative deprivation seen within skills across some of our communities. This is particularly true for some of our rural and coastal communities to the west, including King's Lynn, West Norfolk, Great Yarmouth, Lowestoft and Clacton-on-Sea, which have neighbourhoods amongst the top 20% deprived in relation to skills in the country. Similar to other parts of the country, some larger urban centres have neighbourhoods with high skills deprivation such as Peterborough, Luton, Basildon and Norwich, however areas in and around Norwich also see positive skills outcomes as shown in the map in green. Other areas with positive skills related outcomes tend to be to the west of the region, within commutable distance from the economic hotspots of London and Cambridge.

Figure 47: Education, Skills and Training Deprivation Domain of the Index of Multiple Deprivation (2019)[177]



[175] ONS, Annual Population Survey, 2022

[176] Ministry of Housing, Communities & Local Government, English indices of deprivation, 2019

[177] Ministry of Housing, Communities & Local Government, English indices of deprivation, September 2019

Training and alignment to employer needs

Relative to other English regions, the East of England performs slightly better on indicators in the Employer Skills Survey compared to other parts of the country, although the differences are small. Businesses in the region perform slightly better than average in providing training for workers, only lagging London and the North West for some indicators. The East of England also has a slightly smaller share of any region outside of London with companies experiencing at least one skills gap at just 15%.

Figure 48: Share of businesses offering training and facing skills gap by region (2022)[178]

Region	Job specific training (%)	Management training (%)	At least one skills gap (%)	At least one vacancy (%)
East of England	86	32	15	22
East Midlands	82	30	16	22
London	84	36	12	24
North East	80	32	16	21
North West	87	35	16	23
South East	83	29	16	25
South West	86	31	16	24
West Midlands	86	31	16	22
Yorkshire and The Humber	81	31	17	22

However, from the Local Skills Improvement Plans (LSIPs) produced across the East of England, we know there is a way to go to neatly align the needs of our employers with education and training provision. A common trend across our region's LSIPs highlighted that businesses face significant skills shortages and there is a need for a workforce equipped with a blend of soft and technical skills.

This is particularly the case for employers in innovative and emerging growth sectors such as life sciences, advanced manufacturing, agri-tech and digital, emphasising the requirement of digital and green skills needing more targeted training programmes. This includes further developing knowledge through education provision in specific areas such as genomics in life sciences, software development in IT and innovative farming techniques in agri-tech. Moreover, our region needs to develop the ability to adapt to rapid technological changes and a growing emphasis on sustainability in order to future-proof our workforce.

Workers in our region face challenges in accessing some training opportunities due to high costs and time needed, as well as less awareness, which limits upskilling efforts. [179]Challenges also exist in engaging underrepresented groups. The Bedfordshire LSIP[180] highlights that few businesses are engaging with the post-16 workforce, limiting opportunities for practical skills development and apprenticeships. Meanwhile the Hertfordshire LSIP explains that there may be underutilisation of the skills and experience of over-50 professionals, alongside insufficient emphasis on retraining and lifelong learning.

These challenges create issues for our employers with recruiting and retaining staff, exacerbated by accessibility issues and housing affordability particularly for younger people looking to move into the region.

Regional strengths in key growth and innovative sectors provide the opportunity to transform training provision to be more innovative and improve accessibility to skills development that aligns with future market needs. Focus on digital transformation and green technologies offer the chance to position our region as a leader in these critical future-oriented sectors.

178 GOV.UK, Employer Skills Survey, 2022

179 This was particularly highlighted in the Hertfordshire LSIP: Hertfordshire Chamber of Commerce, Hertfordshire Local Skills Improvement Plan (LSIP), 2024

180 Bedfordshire Chamber of Commerce, Local Skills Improvement Plan Report, 2023

The LSIP process has encouraged positive relations between our education providers and employers. A leading employer in the Norfolk & Suffolk area has cocreated a soft skills framework to be used by both its workforce and young people in a local college[181], showing an example of an employer becoming more actively involved in the skills system following the LSIP process. But further work is needed to align the needs of our local employers to skills and training provision.

Work experience and industry placements are vital ways to expose students to the workplace early, allowing them to be in a workplace environment and get a sense of what is expected from them, including the behaviours employers are looking for. We must ensure that employers are fully engaged in this process and can see the benefits of providing placement opportunities to themselves, but also for the future workforce. This also applies to attracting people to deliver high quality education and training provision, ensuring they are able to gain experience via teacher industry placements. This is particularly pressing given the challenges attracting those with the right skills and with retaining staff due to potential earnings outside of the education sector.

In order to maximise the skills base in our labour force and attract young talent we ask Government to:

- Further devolve skills funding, to single devolved funding, for all post-16 skills, including apprenticeship funding and the Apprenticeship Levy Transfer (which should be made more flexible).
- Increase the adult education budget in the East of England to support infrastructure projects including the delivery of at least one more Institute of Technology in the region.
- Conduct a region-wide plan to meet the need of Health and Social Care skills across the East of England.
- Address the lack of funding for transport to industry placements (for T levels; 45 days+ and work experience) and training. Also provide funding to meet the costs of travel to first jobs.
- Continue with Local Skills Improvement Plans beyond March 2025 to ensure employers remain at the heart of skills planning.

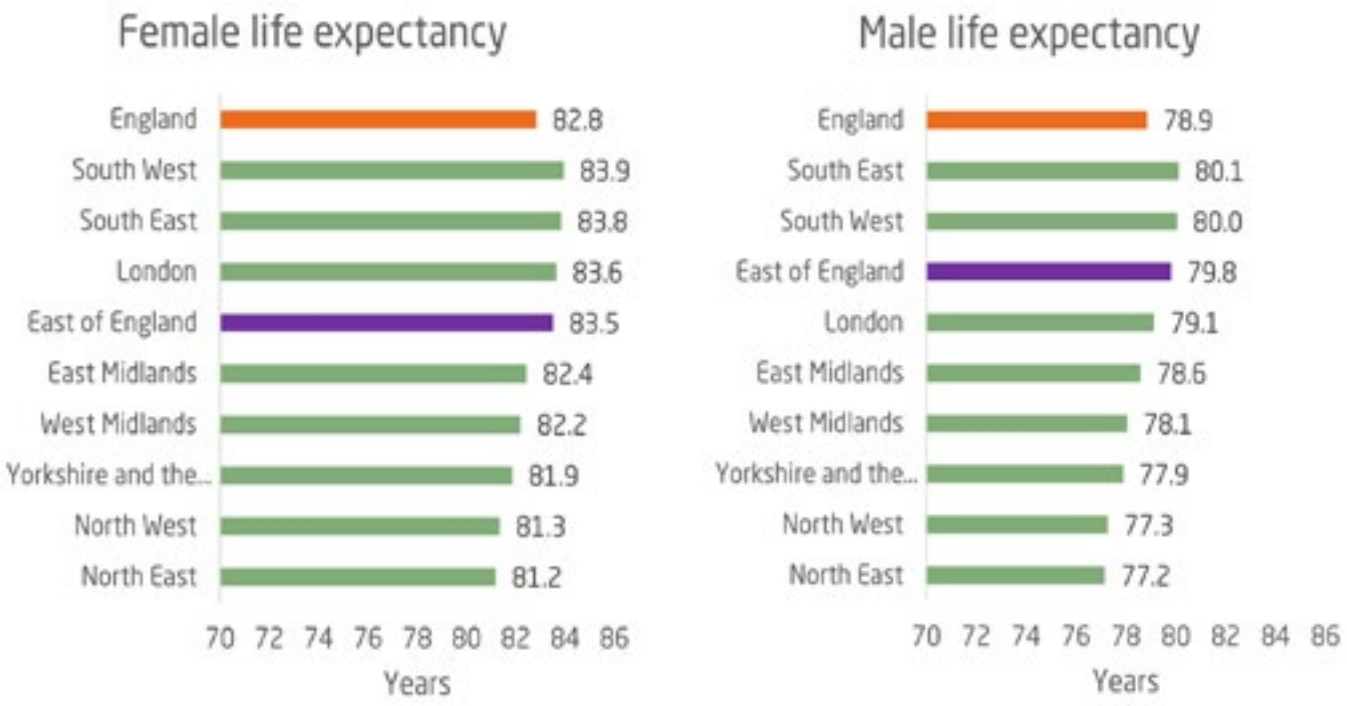
[181] British Chamber of Commerce, Chambers of Commerce Local Skills Improvement Plans, 2024

Health

The East of England has relatively strong health and life expectancy measures at a regional level. For men, the East of England has the third highest life expectancy at birth across English regions of 79.8 years, and for women the fourth highest of 83.5 years, both of which are above their respective national averages.

Additionally, the gap between healthy life expectancy for men and women is the least pronounced in the East of England along with the South East. On average, 79% of life for residents in the East of England was spent in good health, 1 percentage point above the UK average.

Figure 49: Life expectancy by region (2020-22)[182]



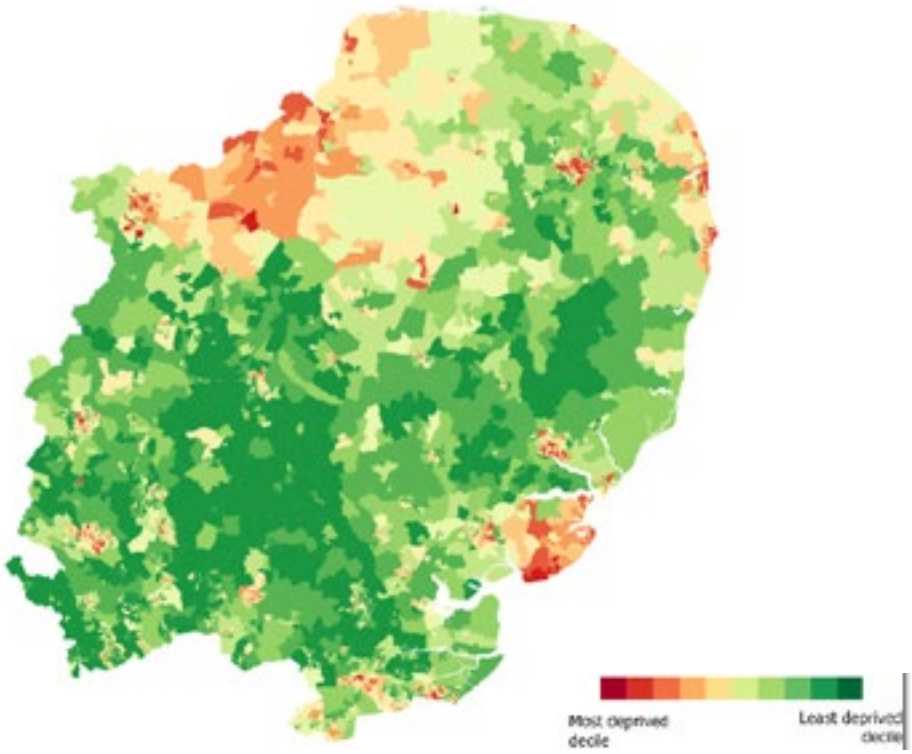
Nonetheless, there is inequality in the region, pointing towards differing experiences faced by some in our region. Inequality in life expectancy at birth, representing the range in life expectancy between the most and least deprived populations, stands at 6.2 years for women and 7.9 years for men, though this is lower than the English average of 7.9 years and 9.7 years between 2018-20[183].

The map below demonstrates that many neighbourhoods in the East of England have good health outcomes as shown by the large swathes of green. Most counties have a high number of neighbourhoods within the top 20% least deprived neighbourhoods in England for health indicators. Many LSOAs in the East of England rank amongst the top 10% in the country, as shown by the darker green shades. However, similar to other overall and skills deprivation, there are disparities across the region. Some communities, particularly within coastal and rural areas in Great Yarmouth, King's Lynn, Clacton, Lowestoft and Southend-on-Sea, as well as inner urban areas in Norwich, Ipswich, Luton and Peterborough rank poorly in terms of health deprivation.

182 ONS, Health state life expectancy, all ages, UK, 2018-2020

183 Figures calculated by Office for Health Improvements and Disparities using mortality data and mid year population estimates from the Office for National Statistics and Index of Multiple Deprivation 2010, 2015 and 2019 (IMD 2010, IMD 2015 and IMD 2019) scores from the Ministry of Housing, Communities and Local Government

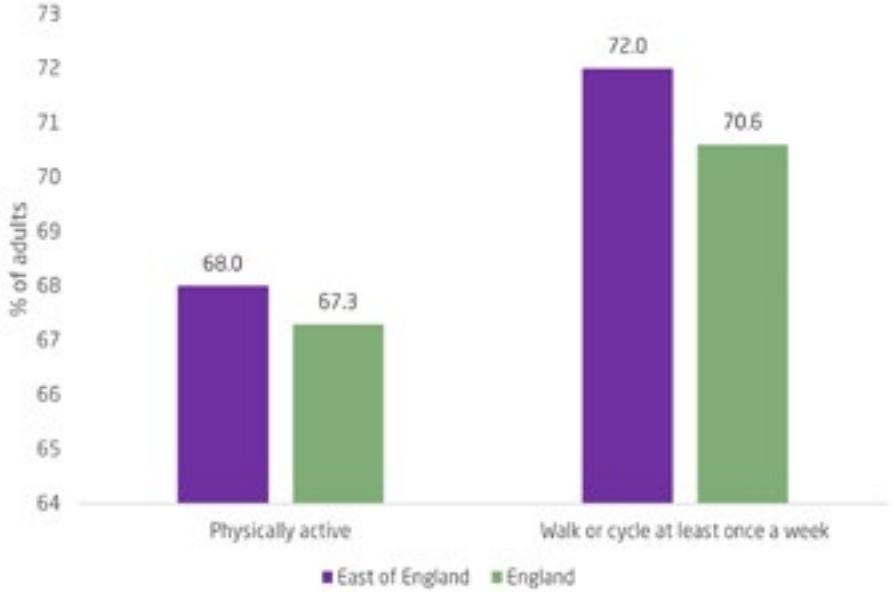
Figure 50: Health deprivation and disability domain of the Index of Multiple Deprivation (2019)[184]



The region does perform worse for smoking prevalence which is 4% more than the national average at 13.2%.

However, the region also performs well in a number of other health related indicators including a higher percentage of adults who are physically active and those who walk or cycle at least once a week.

Figure 51: Percentage of adults who are physically active and walk or cycle one a week[185]



[184] Ministry of Housing, Communities & Local Government, English indices of deprivation, September 2019

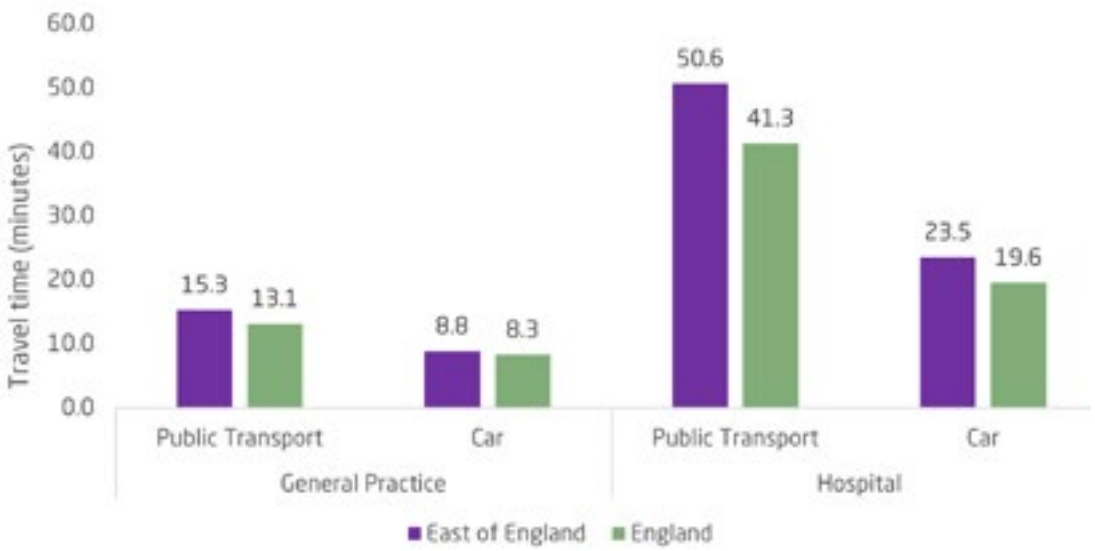
[185] Office for Health Improvement and Disparities (based on the Active Lived Adult Survey, Sport England), 2021/22 and Department for Transport, Participation in walking and cycling, 2022

Accessing health services in our region can be challenging, reflecting the nature of our geography and also the transport challenges highlighted earlier in this report. The average travel time to a GP is 17% higher in the East of England than nationally via public transport and 6% higher via car[186]. The average travel time to a hospital is 23% higher than nationally via public transport and 20% higher via car[187]. Access to health services in the East of England through either form of transport is also slower than all English regions except for the South West. This is linked to constraints with our transport infrastructure and must be addressed so residents can get the treatment they need via multiple forms of transport.

The Chief Medical Officer's annual report highlights the health implications of ageing populations living in disconnected rural communities, a particular challenge in some of our communities. Many of our rural communities tend to be underserved in healthcare provision, and as we have seen constraints in our transport infrastructure then impact our ability to access key services. Therefore, the report highlights the need for more resources to be directed towards areas of greatest need, where a higher proportion of the older population concentrate in rural and coastal regions[188].

Our strengths in life sciences including med-tech will be crucial in helping to tackle the health challenges we face, particularly for those in our rural and coastal communities where inequalities are more prevalent. The University of Essex's Centre for Coastal Communities, part of the Institute of Public Health and Wellbeing, is an important research asset looking into how to address the challenges coastal communities face and take advantage of the opportunities they offer. The centre will have a base in Clacton, not only acting as a crucial source of learning but also playing a key role in extending the educational opportunities on offer in Clacton and the wider Tendring area.

Figure 52: Average minimum travel time to health services (2019)[189]



Access to NHS dentist services is also becoming a major problem within the region. Drawing from BBC analysis into NHS dentistry practice accessibility across the country, the map below shows that residents from across our region faced challenges accessing services, as shown by those areas in the darkest shades of blue. Accessibility challenges are particularly acute in Norfolk, Suffolk and Cambridgeshire, where 100% of NHS dental practices were not accepting new NHS dental patients. On top of this, Norfolk & Waveney, West Essex and Cambridgeshire and Peterborough Clinical Commissiong Groups (CCGs) feature in the CCGs with the lowest number of dentists per 100,000 population, further limiting the ability of some of our residents to access services.

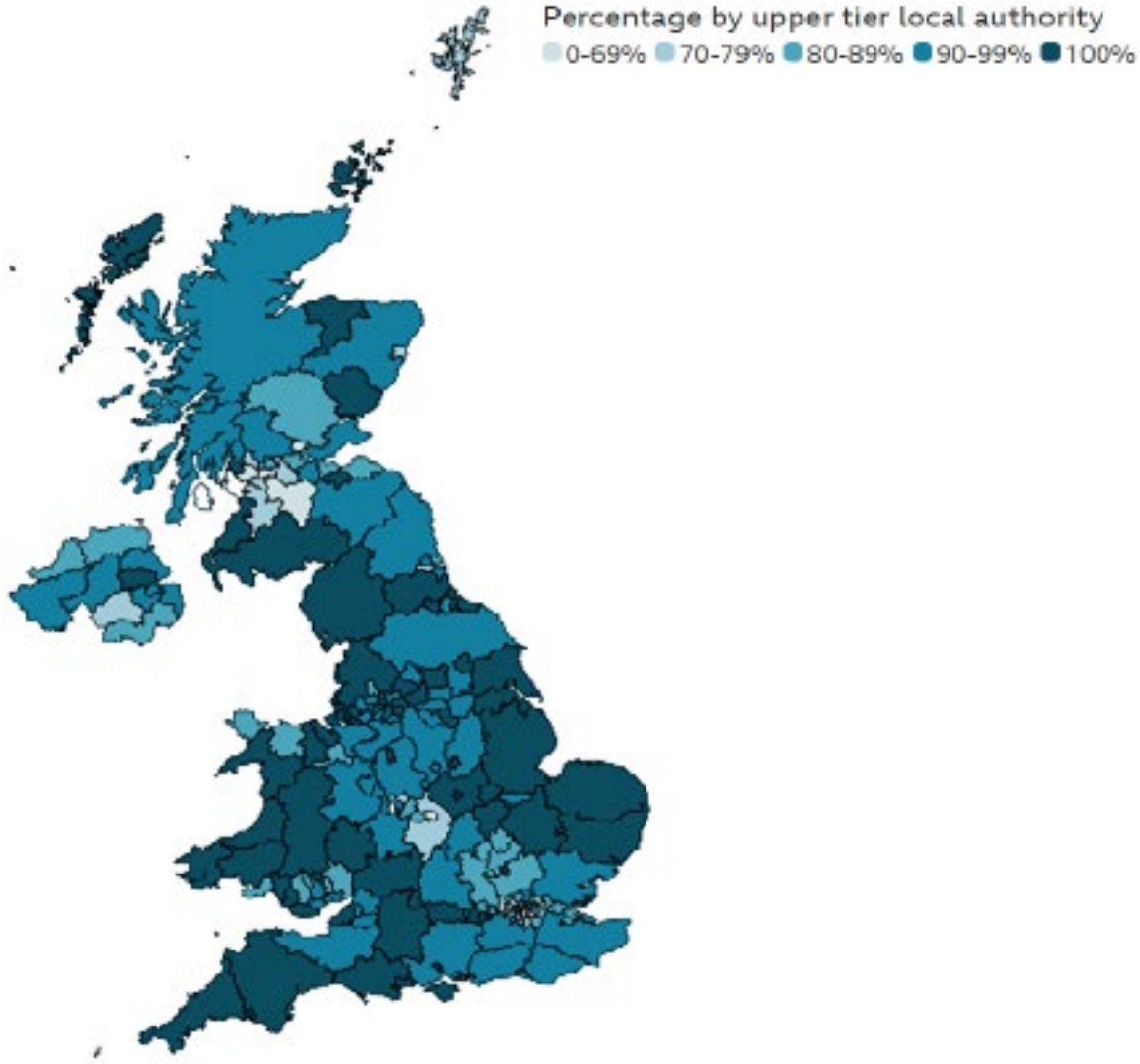
[186] Department for Transport, Participation in walking and cycling, 2022

[187] Department for Transport, Participation in walking and cycling, 2022

[188] Department for Health and Social Care, Chief Medical Officer's annual report 2023: health in an ageing society, 2023

[189] Department for Transport, Journey time statistics: data tables (JTS), 2019

Figure 53: Proportion of dental practices contacted not taking new adult NHS patients[190]



In order to ensure the health and wellbeing of our residents and inequality is narrowed, we ask Government to:

- Recognise the significant population growth in the East of England and ensure the region receives a fair share of funding overall for its demography, and that its most deprived areas are recognised within this.
- Establish an integrated workforce in the health and care sectors to ensure quality and safety of care, reduce vacancies and prevent avoidable cost pressures

And recommend the following to the six Integrated Care Systems in the East of England:

- Join up working across our Integrated Care Systems to ensure all agencies work together on a collaborative, evidence-driven approach towards early intervention and prevention service design and delivery.
- Build on the lessons learned from the multiagency responses during Covid-19. These could provide models for designing and delivering more impactful multiagency interventions in the medium term.

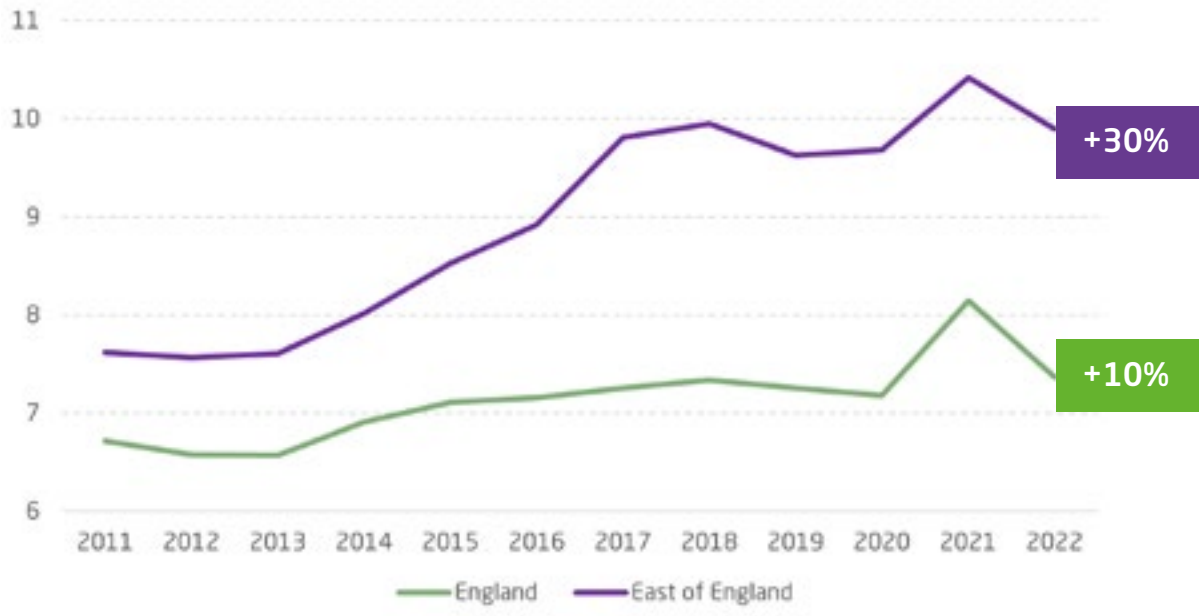
[190] BBC (2023). The BBC contacted nearly 7,000 NHS dental practices between May-July 2022

Housing

Housing presents a major obstacle for many, with recent estimates by the National Housing Federation showing that one in five households in England will be forced to spend over one third of their income on housing by 2030, including 2.2m people in unaffordable private rented homes. Despite recent falls in house prices, affordability remains stretched for many, compounded by rising mortgage costs. The private rental market continues to soar, with rental prices increasing by over 6% in the year up to January 2024 with the Royal Institution of Chartered Surveyors reporting an increase in tenant demand.

The East of England has been facing a housing crisis where the supply of homes, particularly affordable ones, have not met demand. Housing has seen significant price rises from £104,203 in 1997 to £363,779 in 2022[191]. The ratio of lower-quartile house prices to lower-quartile earnings – a measure of entry-level house-market affordability – for the East of England is currently 9.9, and 14 times as high in some areas, compared to 7.4 for England as a whole.

Figure 54: Lower quartile house affordability ratio (2011 to 2022)[192]



Housing affordability is as an issue throughout the East of England. Every county has a higher ratio than the England average, with affordability even more acute in our commuter belt area using the housing affordability ratio. The gap to the England average in housing affordability has also widened in every county. The increase in the ratio across 10 years for England was just 10%, whilst each county in the East of England had an increase of at least double that.

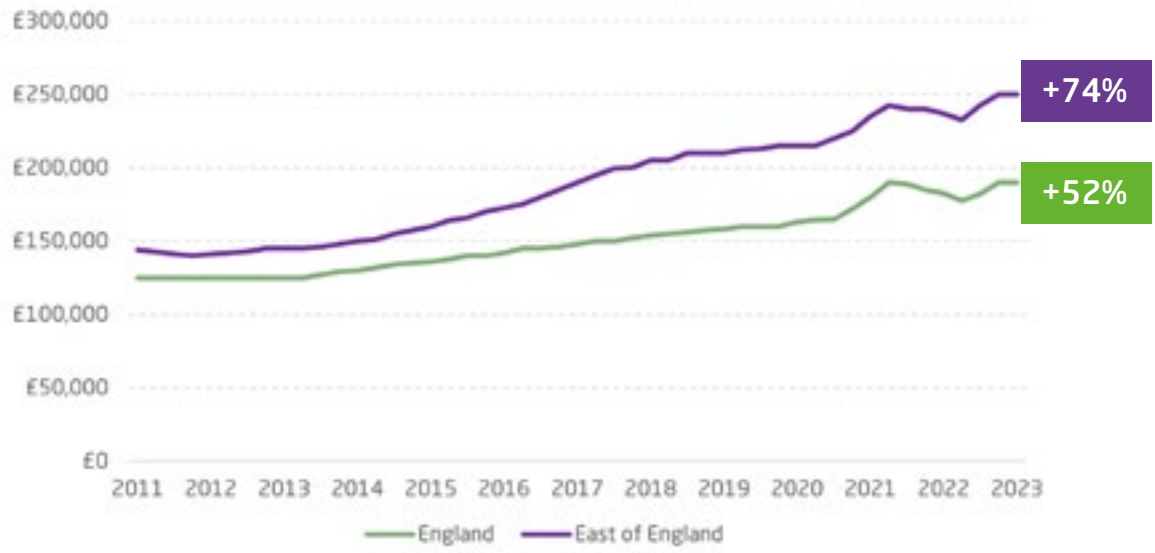
Significant rises in house prices over the last decade or so explain why the housing affordability ratio has been worsening in the region more rapidly than nationally. Lower quartile house prices in the East of England grew by 74% between March 2011 and March 2023, compared with 52% nationally. In March 2023, the lower quartile house price in the East of England was £250,000, which is £60,000 more than the national average, compared with a gap of just £19,000 in the first quarter of 2011. Each county has seen house prices rise at a faster rate than the national average. Similarly, average monthly rents have increased at a faster rate regionally than they have nationally[193].

[191] Adjusted for inflation

[192] ONS, House price to workplace-based earnings ratio, 2023

[193] BuildEast, BuildEast Housing Market Research, 2022

Figure 55: Quarterly lower quartile house prices (2011 to 2022)[194]



Poor housing affordability has resulted in the increase of temporary accommodation in the East of England which is costly for local councils. In the 10 years to 2021/22, local authority spending on temporary accommodation quadrupled, and as of September 2023, 6,720 households in our region lived in temporary accommodation[195]. The condition of housing in the region is another concern. There has been a fall in the proportion of occupied homes which are classed as non-decent[196] in the East of England since 2010 by around half. Across the East of England, 11.3% of occupied dwellings were considered to be non-decent in 2021, below 14.3% across England[197] – but this still equates to around 300,000 homes across the region.

The supply of affordable housing has declined significantly across the last decade with the number of social homes built since 2010/11 declining by 85% from 4,652 to 661 in 2021/22. [198] Recent work by BuildEast – using the Government's standard method for assessing housing need[199], coupled with local authorities' own assessments of affordable housing requirements, suggests that over 35,000 homes are needed in the East of England per year[200]. BuildEast also note that the latest evidence prepared by authorities estimates that 13,000 affordable homes are needed per year in the region, or 37% of overall need[201].

However, since 2011 the East of England has seen average delivery of 23,000 homes per year (227,000 homes in total over the last decade). While delivery increased in recent years, with around 28,000 homes per year built between 2019 and 2021, this is still 7,000 homes short of meeting the minimum standard method figure of approximately 35,000.

The delivery of affordable housing has similarly been less than targeted. In the last 10 years, an average of 5,000 affordable homes per year have been delivered in the region, increasing to 6,000 more recently[202]. Whilst heading in the right direction, there is still a shortfall of between 7,000 to 8,000 affordable homes being delivered across the East of England each year, meaning that less than half of the target is being achieved[203]. In total, around 50,000 affordable homes have been delivered in the last 10 years – comprising just 22% of all homes, in comparison to the 37% that is estimated to be needed[204].

[194] ONS, Lower quartile house prices for administrative geographies: HSPSSA dataset 15, 2023

[195] East of England Local Government Association, Opening the Door, 2023

[196] These are homes which do not meet the Decent Homes Standard as set in 2006 and also sets minimum standards for social housing. See here for more information

[197] Department for Levelling Up, Housing and Communities, English Housing Survey data on dwelling condition and safety, 2021

[198] East of England Local Government Association, Opening the Door, 2023

[199] The 'standard method' assesses need based on projected household growth, combined with an uplift for affordability

[200-204] BuildEast, BuildEast Housing Market Research, 2022

This pattern is not unique to the East of England – and the region's average overall housing growth of around 1% per year is broadly in line with the national average[205]. Nutrient neutrality requires that new housing developments in certain areas should not add more 'nutrient pollution' to the water catchment[206], and this is holding up development in some areas, particularly across Norfolk. Nonetheless, under-delivery of new homes plays a major role in the worsening situation of housing affordability in the region.

Garden towns and villages in Harlow & Gilston, Dunton Hills, and Tendring Colchester Borders present major opportunities to address issues around housing supply and present a good opportunity to build sustainable communities over the long term, contributing to economic growth, great places and improved infrastructure. For example, the Tendring Colchester Borders Garden Community involves the provision of between 7,500 and 9,000 homes and is part of a joint long-term vision of Colchester and Tendring councils, in partnership with Essex County Council, to help meet the projected need for housing in a more strategic way which is infrastructure led – meaning schools, health services, roads and transport systems, and jobs – would all be available as the new community grows.

In order to ensure there is sufficient housing for our growing population which is of good quality we ask Government to:

- Provide greater long-term funding for local authorities to engage in housebuilding, particularly focused on diverse tenures catering to those who need genuinely affordable and social housing.
- Change regulations to enable greater involvement of local authorities in housebuilding projects, such as allowing local authorities to keep more of their Right to Buy receipts.
- Increase flexibility on setting planning fees and reduce regulation limiting how the proceeds of housing related funding can be spent.

[205] BuildEast, BuildEast Housing Market Research, 2022

[206] House of Commons, Nutrient neutrality and housing development, 2023

9 Investment into the East of England

The challenges highlighted in the previous sections need to be considered in light of the fact that the East of England receives some of the lowest allocations of public funding of any part of the UK, and significantly below our contribution to the UK exchequer. Correcting the balance of this, and investing additional funding in infrastructure, will be essential to drive long-term growth, which will ultimately be beneficial for the whole of the UK.

Public expenditure in the East of England

Public sector expenditure in the East of England continues to be amongst the lowest per capita across the UK. Latest Treasury figures for 2022/23 present estimates for the allocation of identified expenditure[207] on services between the regions of the UK. Identified expenditure makes up the majority of public sector expenditure, and is defined as expenditure, which benefits individuals, enterprises or communities within particular regions.

Identified expenditure on services increased from £794.9bn to £848.2bn across the UK between 2021/22 and 2022/23, an increase of 6.7%. Across the East of England, expenditure on services increased from £67.7bn to £72.4bn, an increase of 6.9%. However, accounting for population size shows that the East of England receives some of the lowest amounts of public funding across the UK. In 2022/23, public sector expenditure in the East of England was £11,309 per capita, well below the £12,549 UK average. This is around 10% below UK average per capita levels, which have remained fairly consistent since 2018/19.

Figure 56: Identified expenditure per capita (2022/23)[208]

We can also assess differences by function. The table below outlines expenditure per capita across the highest spending functions, as per the UK average. Public sector expenditure in the East of England is at least 5% below the UK average across all functions, apart from education (which is also lower than the UK average). This includes health, where expenditure is the lowest across all regions, and social protection where expenditure is second lowest.

Focusing on infrastructure elements, transport expenditure is over 18% below the UK average. Housing and community amenities expenditure is third lowest in the East of England at almost half the UK average expenditure per capita levels. Within social protection, the East of England is also amongst the regions with the lowest public sector expenditure on housing support, including benefits in kind to help households meet the cost of housing.

[207] Identified expenditure defined as "spending that can be identified as having been for the benefit of a particular area of the UK". Around 81% of public sector expenditure on services is identifiable expenditure, which has been incurred for the benefit of individuals, enterprises or communities within particular regions. Examples are health, education, and social protection spending. The remaining public sector expenditure is deemed to be incurred on behalf of the UK as a whole such as defence.

[208] HM Treasury, Country and regional analysis: December 2023

Figure 57: Public sector expenditure per capita by function (2022/23), (£ per capita)[209]

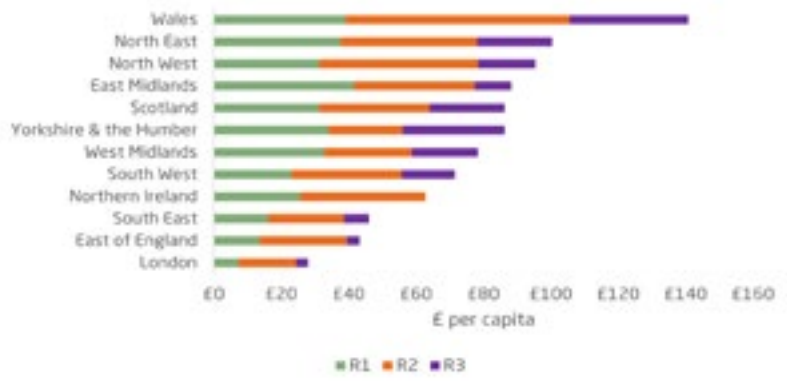
Area	Social protection	Health	Education	Transport	Housing and community amenities	Environment protection
UK	**£4,721**	**£3,085**	**£1,581**	**£648**	**£258**	**£199**
London	£4,480	£3,727	£1,732	£1,272	£529	£179
Scotland	£5,258	£3,106	£1,848	£876	£510	£276
Northern Ireland	£5,579	£3,236	£1,794	£421	£619	£166
Wales	£5,620	£3,337	£1,672	£502	£383	£241
North East	£5,250	£3,263	£1,584	£502	£232	£144
North West	£4,925	£3,295	£1,504	£637	£170	£412
West Midlands	£4,720	£3,038	£1,580	£694	£144	£144
Yorkshire and The Humber	£4,708	£2,977	£1,546	£418	£179	£142
South West	£4,711	£2,892	£1,418	£388	£138	£182
East of England	**£4,317**	**£2,736**	**£1,508**	**£529**	**£175**	**£174**
South East	£4,151	£2,740	£1,482	£571	£140	£160
East Midlands	£4,500	£2,787	£1,501	£361	£128	£135

Levelling up funding in the East of England

Levelling up has become a prominent policy priority over the course of the previous Parliament and to support these objectives the Government launched four investment programmes[210] - the £4.8bn Levelling Up Fund (LUF) being the largest of these pots. The LUF is designed to be used to invest in infrastructure, supporting town centre and high street regeneration, local transport projects and cultural and heritage assets.

The Department for Levelling Up, Housing and Communities (DLUHC) categorised all local authorities into priority 1, 2, and 3 for levelling up funding, using a methodology that aligns with the indices of multiple deprivation. Despite DLUHC assessing that nine areas in the East of England are among those most in need of levelling up funding[211], the East of England received the second lowest amount of funding per person, behind only London across the three rounds of the LUF, equating to £43.15 per person. Across the three rounds between 2021 and 2023, the East of England was awarded funding for 14 different projects, the joint least alongside the North East, including funding for only two projects in latest round of the LUF.

Figure 58: Levelling Up Funding allocations by region per capita[212]



Despite being a major contributor towards the overall UK economy and being one of the most productive regions in the UK, our region faces entrenched deprivation, particularly in our rural and coastal areas, as well as some of our urban centres, and the relative lack of funding limits our ability to tackle this effectively to level up opportunities for all those in the East of England.

[209] HM Treasury Country and regional analysis: December 2023. Expenditure is highlighted in yellow if it is below 95% of the UK average per capita

[210] Levelling Up Fund, UK Shared Prosperity Fund, Community Ownership Fund and Community Renewal Fund

[211] East of England Local Government Association, Levelling Up The East of England 2023-2030, released 2022. These areas are Great Yarmouth, Harlow, King's Lynn and West Norfolk, Luton, Maldon, North Norfolk, Peterborough, Southend-on-Sea and Tendring

[212] Department for Levelling Up, Housing and Communities, Levelling Up Fund successful bidders, 2023; ONS, Population Estimates, 2022

10 Fulfilling our potential

The East of England has a strong economic track record of high economic growth, relatively high productivity and growth in key technology sectors. This has happened despite public funding in the region being significantly lower than the rest of the country: over £1,000 per capita less than UK average annually, which equates to an £8bn gap. This relative lack of public funding has occurred despite the region being a net contributor to the Exchequer.

The risk: lack of investment results in slow growth

This report has set out how, despite this high performance – and despite the significance and the presence of nationally important assets in our region that are crucial to the future of the UK economy – that we are experiencing worsening challenges relating to all of our major infrastructure. These challenges threaten the future of our economy in many ways:

- We are seeing slower development, with major sites – both housing and commercial – stalled due to lack of grid or water infrastructure.
- Businesses are reconsidering or pulling major investments as they cannot guarantee corresponding infrastructure investment, or because they cannot get access to the water or power we need.
- Major housing sites put on pause due to lack of supporting infrastructure.
    - This includes sites in Cambridgeshire due to concerns over water supply and concerns over key supporting infrastructure for Dunton Garden Village in Brentwood, including delivering sustainable transport.
- Our high value technology firms cannot get the digital connectivity they need, creating a drag on productivity and investment in technologies that require 5G etc.
- Our logistics sector is threatened by excess costs associated with delays and congestion, with these costs passing through to businesses across the UK.
- Our communities and businesses are at risk of flooding.
- Our agriculture and natural environment are at risk of damage through drought and the effects of climate change.
- Our residents lack the opportunity to gain durable skills connected with our key sectors, which also slows the growth of businesses in our strategic clusters.

Given these points, it is entirely reasonable to suggest that the East of England could experience a pronounced slowdown in economic performance, as has been the case across large parts of the rest of the country. This would be devastating to the UK's economic potential and would undermine the progress we have made in our region.

The opportunity: investment in infrastructure creates prosperity which benefits the region and the country

There is another way forward. On current growth trends, the East of England will be a £220bn per year economy by 2035[213]. This would make a significant contribution to national growth aspirations. It is also very possible to envisage that with strengthened infrastructure, the region could deliver significantly higher growth than even these projections by creating confidence in the private sector, and removing barriers and impediments to investment.

This would not just help address the UK's current growth challenge, it would also:

- Help deliver national objectives around key sectors and clusters, including: life sciences, quantum computing, advanced manufacturing, agri-tech and bioscience, and energy innovation.
- Support delivery of the UK's energy security and net zero goals, by unlocking improved baseload capacity, renewables, new nuclear and hydrogen.
- Drive innovation in food technology and help secure national food security.
- Protect our communities from the impacts of climate change.
- Ensure our residents are supported to benefit from the many projects needed in the region, including through employment opportunities and developing new skills.

Devolution also presents us with future opportunities to drive decision making regionally, and there is broad consensus that there is a need for more deals in the East of England.
As part of developing stronger regional co-ordination, we ask for support and to work in Partnership with Government and alongside regional partners to develop a full economic analysis of the impact of required infrastructure to make a more quantified case for long-term funding.

We call on Government to work with us, and with local partners, to ensure that the East of England can fulfil its promise and continue to deliver for our residents, our businesses, our region and the whole of the UK.

[213] Assumes trend rate of growth for the region 2010 to 2019

11 Appendix: Sub-sector definitions and specialisms

This appendix provides further information on our key sectors as highlighted in Section 5.

The Data City

This report uses the Data City platform to analyse businesses and specialisms in the East of England's new and emerging sectors that are not well reflected by traditional SIC codes used in national statistics. The platform has been used to collect business information and distribution for life sciences, agri-tech, net zero, clean energy generation, advanced manufacturing, digital technology and creative and digital industries.

The Data City is an online platform which is used to gather wider insights on business activity, focusing on emerging and innovative sectors. The platform uses an alternative to SIC-codes called 'Real Time Industrial Classifications' (or RTICs). These new-tech sector groupings are identified via web scraping and machine learning technology, through analysing text on businesses' websites to understand the activity and sectors they are involved in based upon keywords and business demography. The platform only analyses companies listed on Companies House which also have a website, making up of around 30% of the total business base, meaning that sole proprietors or micro companies with no website are often not reflected. In total, over 5 million companies and 350 sectors (RTICs) and sub-sectors (sub-RTICs) are analysed in the UK.

However, insights deriving from the Data City do come with some caveats. As the platform uses machine learning technology, some additional businesses may be picked up while others may be left out, this is particularly the case when analysing some businesses in the 'net zero' RTIC as some businesses may claim to use sustainable practices, but not necessarily in the net zero sector. This means that the Data City is best used for relative figures such as shares or specialisms. The Data City is also best used to analyse business counts as employee and turnover figures are estimated based upon a sample of businesses.

Table one: Sub sectors specialism in the East of England[214]

RTIC	Sub-RTIC	Business Count	% of UK companies
Computer Hardware	Central Processing Units	30	78.9
Omics	Lipidomics	13	52.0
AgriTech	Precision Farming	41	49.4
Omics	Epigenomics	27	47.4
Omics	Genomics	111	36.9
Net Zero	AgriTech	109	34.3
Engineering Biology	Biological Materials and Reagents - Nucleotide synthesis and sequencing	18	34.0
Omics	Proteomics	33	33.0
Space Economy	Ground Segment	20	32.8
Engineering Biology Supply Chain	Computational - Supercomputing	24	32.4
CleanTech	Agriculture, Forestry and Biodiversity	122	32.3
Engineering Biology Application	Agriculture and Food - Agriculture / Eco-Friendly Agrochemicals	9	32.1
Marine and Maritime	Ports Ecosystem	280	32.0

[214] The Data City, 2023. Data City defines the 'Omics' RTIC as "Companies aiming at the collective characterisation and quantification of biological molecules that translate into the structure, function, and dynamics of an organism"

Table two: Most specialised sub sectors definitions

RTIC	Sub-RTIC	Definition
Computer Hardware	Central Processing Units	Companies providing central processing units.
Omics	Lipidomics	Companies focusing on the study of cellular lipids and associated products and/or services.
AgriTech	Precision Farming	Companies involved in observing, measuring and responding to temporal and spatial variability to improve agricultural production sustainability.
Omics	Epigenomics	Companies providing services and/or products to study chemical tags in the genome.
Omics	Genomics	Companies providing services and/or products to investigate the genome.
Net Zero	AgriTech	Companies involved in the use of advanced technology in agriculture.
Engineering Biology	Biological Materials and Reagents - Nucleotide synthesis and sequencing	Companies engaged in the manufacturing of equipment and serving as suppliers for DNA sequencing, synthesis and various nucleotide-related products.
Omics	Proteomics	Companies focusing on researching the proteome (set of proteins produced by an organism or cell).
Space Economy	Ground Segment	Organisations providing the technologies and infrastructure involved in the ground segment of data downlink including ground stations, services and terminals.
Engineering Biology Supply Chain	Computational - Supercomputing	Companies providing computational-related services and products to engineering biology firms.
CleanTech	Agriculture, Forestry and Biodiversity	Companies providing technologies that allow the environmental monitoring of agricultural processes, forests and wildlife.
Engineering Biology	Agriculture and Food - Agriculture / Eco-Friendly Agrochemicals	Companies using engineering biology to create products for the agricultural sector.
Marine and Maritime	Ports Ecosystem	Companies involved in port operation and a range of organisations within ports ecosystem such as energy infrastructure and logistics.

Table three: Life Sciences definitions

RTIC	Sub-RTIC	Definition
Life Sciences	Biology and Biotech	Companies working in the field of biology and biotechnology, that may be developing products or providing services.
Life Sciences	Chemical Products and Services	Companies working in the field of chemistry, developing products or providing services.
Life Sciences	Environmental Sciences Products and Services	Companies that work in the field of environmental monitoring, ecology, geography and/or any sector that directly investigates the state of inhabited territories.
Life Sciences	Human Health Services	Companies providing health services.
Life Sciences	Life Sciences Manufacturing	Companies that provide the technologies, products and services that enable manufacturing specialised life sciences materials.
Life Sciences	Research	Companies that base their economic activity in life sciences research.
Life Sciences	Synthetic Biotechnology	Companies involved in the use and development of synthetic biotechnology products in areas such as agriculture, healthcare and environmental sustainability.
Biopharmaceutical		Companies involved in the development and production of innovative medical solutions, including antibodies, vaccines, advanced therapy medicinal products (ATMPs), small molecule therapeutics and blood and cell products.
Omics		Companies aiming at the collective characterisation and quantification of biological molecules that translate into the structure, function, and dynamics of an organism.
Pharma		Companies providing new technologies and services to the pharmaceutical industry, largely in the development, testing, production, distribution, and marketing of medicines.

Table four: Sub-sector life science specialisms in the East of England

Sub-RTIC	UK	East of England	% of UK companies
Omics	630	209	33.2
Synthetic Biotechnology	303	88	29.0
Biology and Biotech	1,089	263	24.2
Pharma	2,470	549	22.2
Biopharmaceutical	1,408	305	21.7
Research	3,143	601	19.1
Environmental Sciences Products and Services	2,856	479	16.8
Life Sciences Manufacturing	4,382	693	15.8
Chemical Products and Services	1,019	133	13.1
Human Health Services	9,354	1,075	11.5

Table five: Agri-Tech definition

RTIC	Sub-RTIC	Definition
Agri-Tech	AgSciences	Companies in the field of life sciences pushing for agricultural innovation by providing specialised products or services, like GMO seeds.
Agri-Tech	Automation	Companies producing machinery and/or technology that enable the automation of agricultural processes.
Agri-Tech	Drone Technology	Companies providing drone technology, or services reliant on drone technology, to the agricultural industry.
Agri-Tech	Management Platforms	Companies providing software and/or platforms that enable agricultural data management and analytics.
Agri-Tech	Precision Farming	Set of products and/or services that enable real-time and off-field monitoring and control of agricultural processes.
Agri-Tech	Remote Sensing	Companies providing products that make possible agricultural monitoring off-field.
Agri-Tech	Vertical Farming	Companies producing the technology and related services and infrastructure that enable vertical farming.
FoodTech	Agri-Tech	Companies offering services and technologies that aim to increase farming efficiency and sustainability.
Net Zero	Agri-Tech	Companies developing technologies and providing services transforming dominant/traditional agricultural practices.

Table six: Agri-tech sub-sector specialisms in the East of England[215]

Sub-RTIC	UK	East of England	% of UK companies
Precision Farming	83	41	49.4
Net Zero: Agri-Tech	318	109	34.3
FoodTech: Agri-Tech	772	204	26.4
Automation	148	37	25.0
AgSciences	509	104	20.4
Management Platforms	208	34	16.3
Remote Sensing	374	59	15.8
Drone Technology	99	14	14.1
Vertical Farming	113	15	13.3

Table seven: Clean energy generation definition

RTIC	Sub-RTIC	Definition
Energy Generation	Bioenergy	Companies generating energy from organic materials, such as biomass and biofuels.
Energy Generation	Hydrogen	Companies generating energy from hydrogen, contributing to sustainable power solutions and carbon-neutral practices.
Energy Generation	Hydropower	Companies generating energy from hydropower (flowing water).
Energy Generation	Offshore Wind	Companies using offshore wind to produce electricity and companies engaged in the maintenance of offshore wind facilities.
Energy Generation	Onshore Wind	Companies using onshore wind to produce electricity.
Energy Generation	Renewable Thermal	Companies generating energy from sustainable heat sources, such as solar, geothermal or biomass.
Energy Generation	Solar	Companies generating energy from solar sources.
Energy Generation	Nuclear	Companies generating energy from nuclear sources.

[215] The Data City, 2023

Table eight: Clean energy generation specialisms in the East of England[216]

Sub-RTIC	UK	East of England	% of UK companies
Offshore Wind	375	89	23.7
Renewable Thermal	1584	270	17.0
Nuclear	253	36	14.2
Solar	3331	451	13.5
Onshore Wind	941	128	13.6
Bioenergy	1622	181	11.2

Table nine: Digital technology services definition

RTIC	Definition
Artificial Intelligence	Companies working with artificial intelligence (often machine learning) in areas such as; data analysis, enabling platforms, image processing, machine learning, natural language processing, blockchain, greentech, life sciences, industry 4.0 and automation, systems optimisation and signal processing.
Cyber	Companies working across the cybersecurity and computer safety sector; cryptographic authentication, endpoint security, identity management, IoT security, network security, incident detection and response, risk management and threat management.
Immersive Technologies	Companies and start-ups focused on the development, manufacturing, and delivery of immersive technologies, including augmented reality, haptics, hardware, the metaverse and more.
Internet of Things	Companies creating objects with the capability of communicating with each other and sharing data over the internet.
Sensors	Companies designing or deploying devices or management systems related to those devices that enable products to sense their environment and respond or create data for further analysis.
Software as a Service (SaaS)	Companies selling software subscriptions, often hosted in the cloud, either directly to consumers or to businesses.
Software Development	Companies involved in creating, designing and maintaining computer programs.
Wearables and Quantified Self	Companies creating or deploying wearable devices and other technologies that collect data about the wearer such as fitness and sleep and provide insight via analysis.

[216] The Data City, 2024

Table 10: Digital technology services sub-sector strengths in the East of England[217]

RTIC	UK	East of England	Growth %	% of UK companies
Sensors	2407	430	5.4	17.9
Wearables and Quantified Self	590	102	3.9	17.3
Cyber	6017	766	12.6	12.7
Artificial Intelligence	3671	445	9.5	12.1
Internet of Things	741	90	1.2	12.1
Software as a Service (SaaS)	3211	368	5.9	11.5
Software Development	7005	803	7.5	11.5
Immersive Technologies	1994	205	8.3	10.3

Table 11: Advanced Manufacturing definition

Sub-RTIC	Definition
Advanced Measurement	Companies which can complete the measurement of workpieces between operations with high speed, high efficiency, high accuracy and high flexibility.
Artificial Intelligence	Companies leveraging AI and machine learning, helping manufacturers improve operational efficiency, launch new products, customise product designs and plan future financial action.
Augmented and Virtual Reality	Enhancing and augmenting existing product and service design and enabling entirely new techniques using virtual worlds.
Coating Tech	Companies offering services for covering that is applied to the surface of an object, usually referred to as the substrate. The purpose of applying the coating may be decorative, functional or both.
Computer Aided Manufacturing	Companies using software and computer-controlled machinery to automate a manufacturing process.
Cutting and Machining	Cutting is a technique where the operator moves a material (workpiece) such as metal and the tool in relation to each other in order to shape the workpiece into the desired form through shaving, drilling, etc.
Data Services	Companies using data to drive efficient and responsive production systems.
Digital Design	Digital design, manufacturing and services (DDMS) is a digital-first approach to the way products are designed, manufactured and operated.
Digital Twins	The digital twin is a virtual representation of the as-designed, as-built, and as-maintained physical product.
Forging	Forging is a manufacturing process involving the shaping of a metal through hammering, pressing or rolling.

[217] The Data City, 2023

Forming	Forming is a mechanical process used in manufacturing industries wherein materials (mostly metals) undergo plastic deformations and acquire required shapes and sizes by application of suitable stresses such as compression, shear and tension.
Industrial IoT	The industrial internet of things (IIoT) refers to interconnected sensors, instruments and other devices networked together with computers' industrial applications.
Moulding	A process that involves shaping a liquid or malleable raw material by using a fixed frame; known as either a mould or a matrix.
Prototyping	Companies creating early samples, models, or releases of a product built to test a concept or process.
Robotics and Automation	Robotic process automation, or RPA, is software that is integrated with business processes in order to automate certain activities, minimise human errors, and maximise productivity.

Table 12: Sub-sector specialism in advanced manufacturing in the East of England[218]

Sub-RTIC	UK	East of England	% of UK companies
Prototyping	1,775	290	16.3
Cutting and Machining	1,029	154	15.0
Computer Aided Manufacturing	2,278	339	14.9
Forming	1,610	240	14.9
Moulding	552	79	14.3
Augmented and Virtual Reality	226	30	13.3
Robotics and Automation	970	128	13.2
Advanced Measurement	276	36	13.0
Coating Tech	1,323	171	12.9
Digital Design	1,746	223	12.8
Digital Twins	120	14	11.7

[218] The Data City, 2023

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