IFM Investors

Economic Strategy for the East of England

Phase 1 Report

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Foreword

As business and political leaders in the East of England, we welcome this new report by Cambridge Econometrics which showcases both the existing economic strengths of our region and the scale of the opportunity which exists for the future.

As the report shows, the East of England already makes a substantial contribution to UK plc, whether through our world-leading universities, cutting-edge scientific research or the burgeoning agri-food and renewables sectors. We are also fortunate to benefit from growth 'clusters' across different parts of the region and, through our successful airports, links to growth opportunities around the world.

Looking ahead, this report sets out the exciting opportunity which exists for the East of England to be at the forefront of solving a number of social, economic and environmental challenges over future decades, whether that be the development and deployment of artificial intelligence or making the UK a global leader in clean growth.

Across the East, there is significant common ground between LEPs, local authorities, business, Further and Higher Education, not-for-profit and other community organisations and other bodies as to what steps are needed to ensure the region is best-placed to seize the opportunities of the future. As we enter the 2020s, closer collaboration and partnership between business, local government and others in the East of England will be crucial in unlocking the significant potential which exists in the region.

Through outlining the shape of a common agenda for the region in the decades ahead, this report provides a valuable signpost as to how different bodies can work together to realise the opportunities of the future. We look forward to playing our part in realising that shared ambition.

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Chair, Hertfordshire Local Enterprise Partnership & Chair, LEP Network

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Chair, South East Local Enterprise Partnership

Doug Field
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Mayor, Cambridge and Peterborough Combined Authority

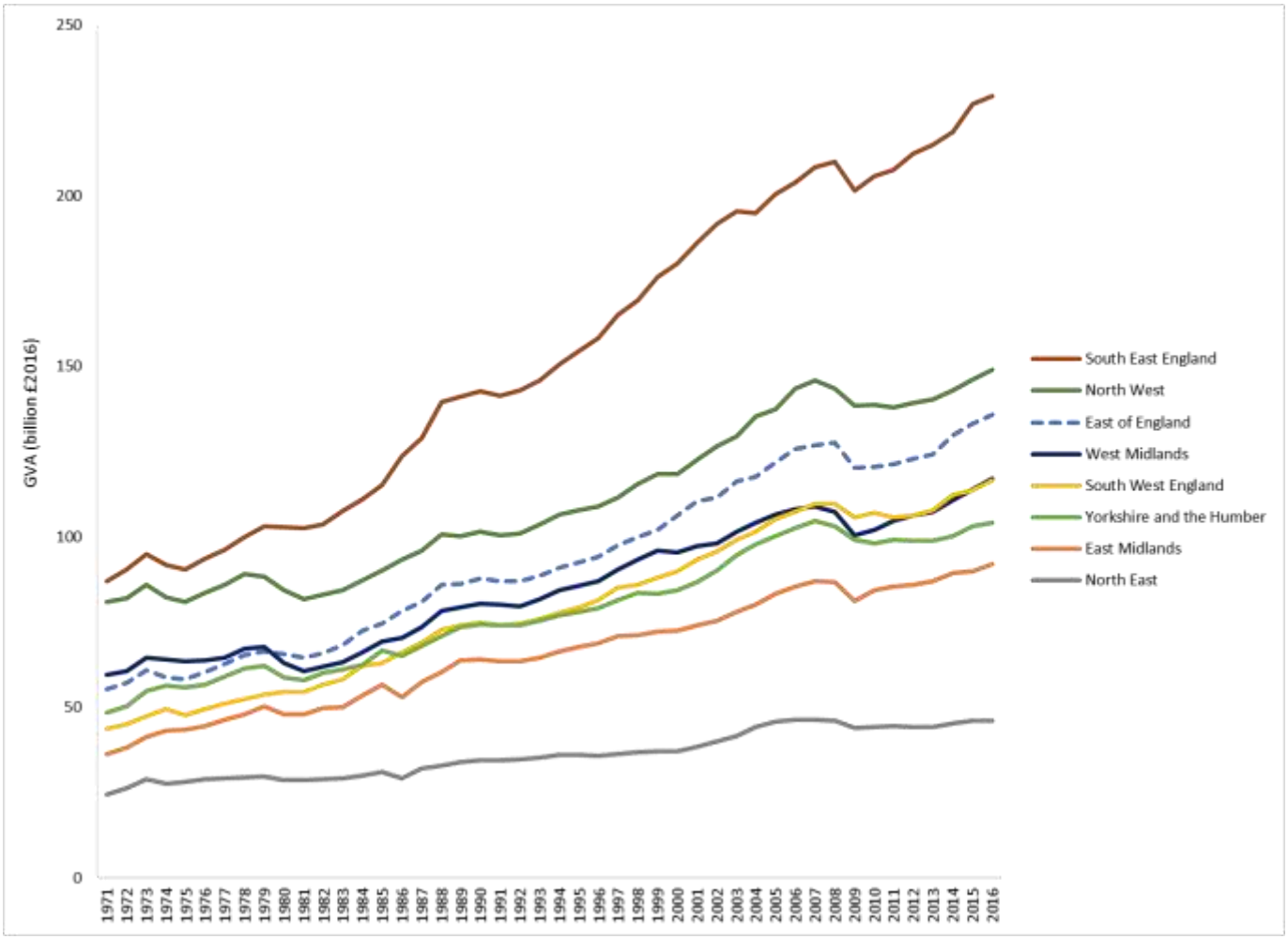
Executive Summary

The East of England has been an economic success story, with the ability and ambition to play a leading role in driving the UK economy forward over the long term, as well as being at the global forefront in solving numerous social and environmental issues. However, there are a number of challenges that need to be overcome to fully realise this ambition. This report recommends a number of potential solutions, among which better regional coordination is key.

The East of England has been an economic success story…

The East of England is one of the most economically successful regions in England. Despite not containing any of the top 20 largest urban areas in the UK, the East of England is the 4th most prosperous region in England, with a Gross Value Added (GVA)[1] of over £150bn (2017), 9.8% of England's total GVA. Trends in regional GVA over the past four decades are illustrated in Figure 1.

Figure 1 GVA in English regions excluding London, 1971-2016



[1] According to the ONS: "Gross value added (GVA) is a measure of the increase in the value of the economy due to the production of goods and services." See here for all relevant ONS datasets and publications.

The East of England GVA rose by 146% in 1971-2016, the fifth highest rate among English regions and above the average rates for both the UK (133%) and England (136%). Employment has also seen significant growth in 1971-2016, expanding from 1.84m to 3.1m – a 68.8% increase, behind only the South West (71.6% employment growth) and the South East (70.2% employment growth) among regions in England over the same time period. Furthermore, labour productivity[2] in the East of England is at a high level at £48,000 per worker (2017), ranking third in England behind London (£73,000) and the South East (£53,000). Similarly, London and the South East are the only regions with a higher GVA per head than the East (£48,300 and £29,400 compared to £24,400).

The explanation behind the region's impressive performance is that the East of England has a combination of physical and institutional assets that compares favourably to any other UK region. These include:

- The presence of a world-leading university and associated globally significant tech clusters in and around Cambridge, the UK's leading hub of innovation and knowledge generation outside of London
- The highest proportion of employment in scientific research and development (1.1% in 2017)[3] of any UK region
- Region-wide specialisations in high-value, knowledge intensive services, particularly in the professional, technical and scientific services and information and communication sectors
- A range of complementary specialisms, most notably in agri-food, offshore renewables, tourism and construction, as well as some niche high value manufacturing
- Close proximity to and high level of integration with London, resulting in numerous business links and commuting movements
- Significant international gateways, including high capacity freight and passenger terminals serving the European mainland, and (in London Stansted) the fourth busiest airport in the UK[4]
- A high quality of life, with a mix of smaller "liveable" cities with significant cultural heritage, and peaceful and affluent rural areas

Figure 2 illustrates several of the region's key assets. Figure 2a shows the high employment share in *science, research, engineering and technology* professions in Cambridge and the surrounding areas. In Figures 2b and 2c the concentration of arable land and offshore windfarms in the East of England area is evident. Finally, Figure 2d includes the largest English ports in terms of cargo[5], with a significant number of them located in the East of England area.

[2] Defined as the ratio of GVA (balanced approach; 2016 Chained Volume Measures) to total employment.

[3] Compared to national average is 0.4%, 2nd highest region is South East with 0.7%

[4] Airport data by the Civil Aviation Authority (CAA) for 2018.

[5] Port and domestic waterborne freight statistics by the Department for Transport for 2017.

Figure 2 Key assets in the East of England

Figure 2a: Share of employment in scientific research and development by Authority District

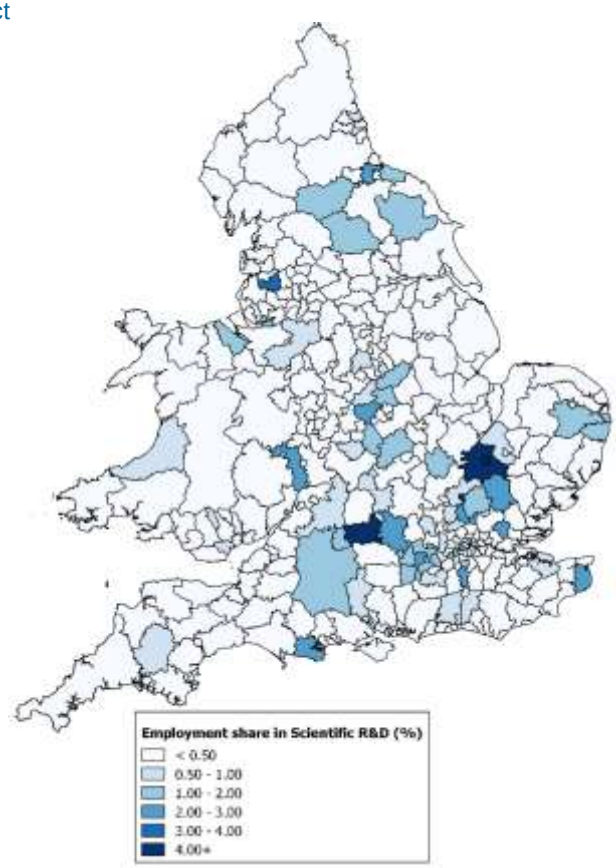


Figure 2b: Land cover in England and Wales. Arable land (shown in burgundy) is heavily conentrated in the East of England

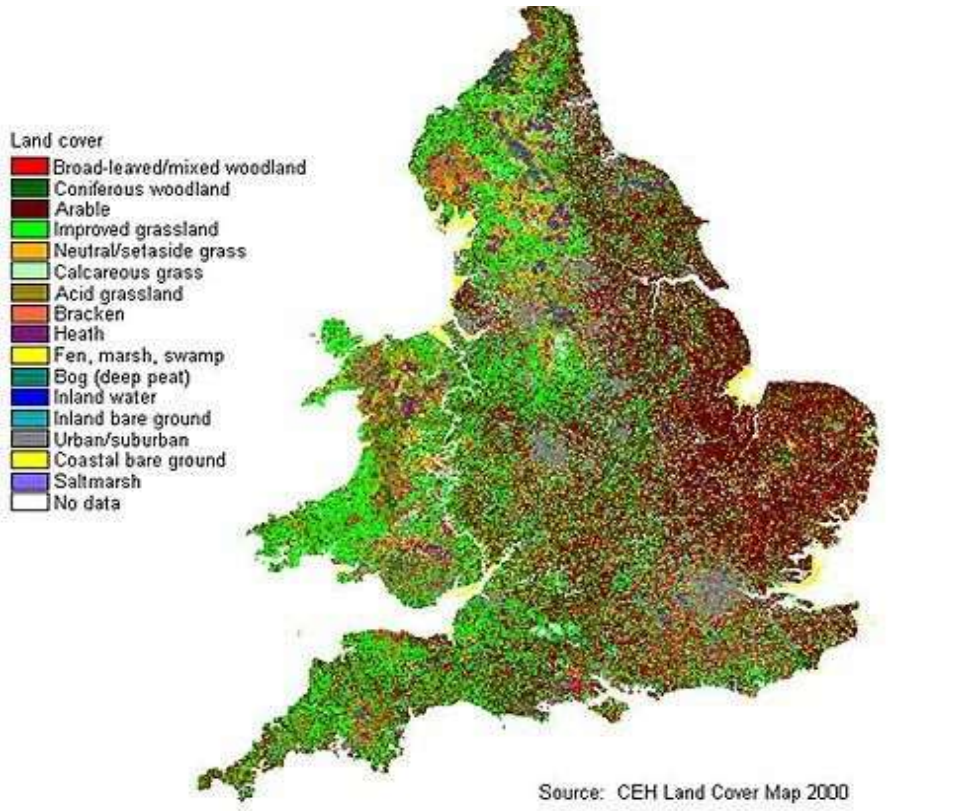


Figure 2c: Location of current and future offshore windfarms around the UK coastline. The East Anglian coast represents the bottom half of the "Eastern Energy

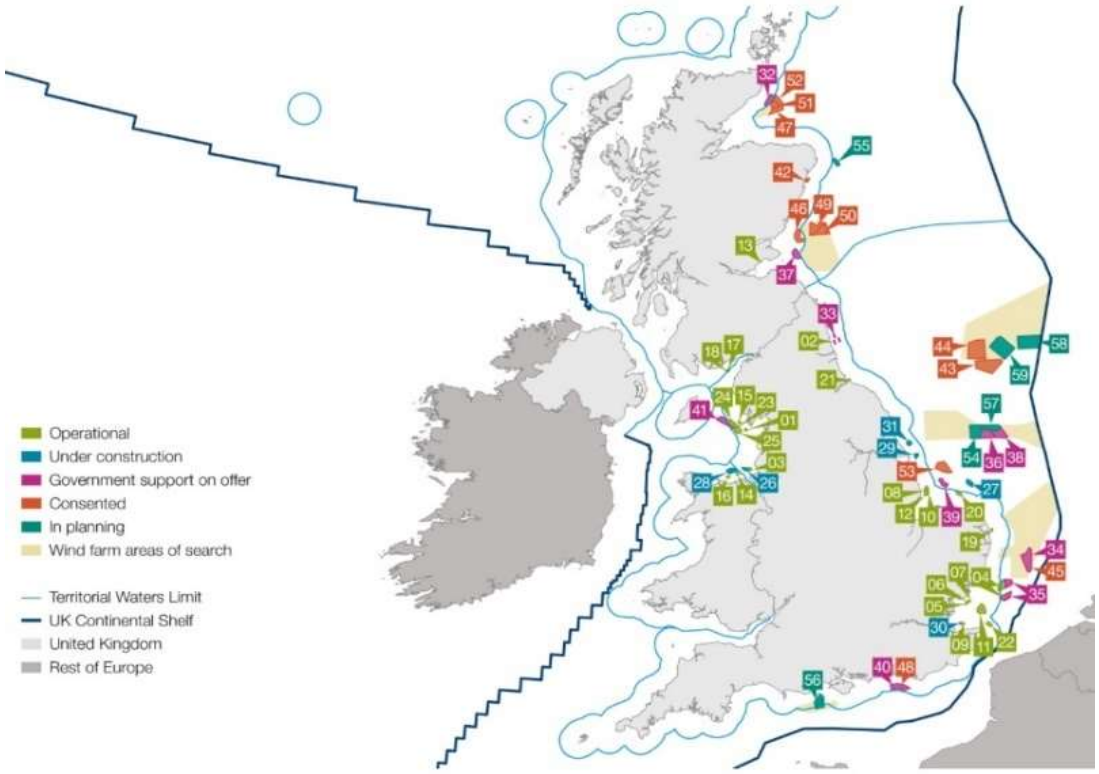


Figure 2d: Location of major ports in the east of England – two of the most significant ports are at Harwich in Essex and Felixstowe in Suffolk

…with the ability and ambition to play a leading role in driving the UK economy forward over the long term…

The component Local Enterprise Partnerships (LEPs) and other authorities within the East of England do not individually lack of ambition. Authorities within the region have identified several ambitious priorities for development over the next few decades. While several of the targets and objectives of the different local authorities overlap, there is no unifying overall ambition for the region, such as the 'Northern Powerhouse' for the North of England and the 'Engine' for the Midlands.

Critically, all authorities aim to grow as centres of economic activity in their own right, rather than as satellites of Greater London. There is also an agreement across all local areas that boosting growth in knowledge-intensive sectors is essential, but the needs of local populations across all skills levels must be taken into account as well. Furthermore, it is noted that this must be combined with measures to protect the valuable environmental and rural assets that the region has in abundance.

Quantitative measures regarding the ambitions of the local development bodies within the East of England region are provided in the strategic documents of the Local Enterprise Partnerships and other local governing bodies. The combined individual targets for all component geographies within the East of England is to deliver about £223.8bn GVA by 2036.

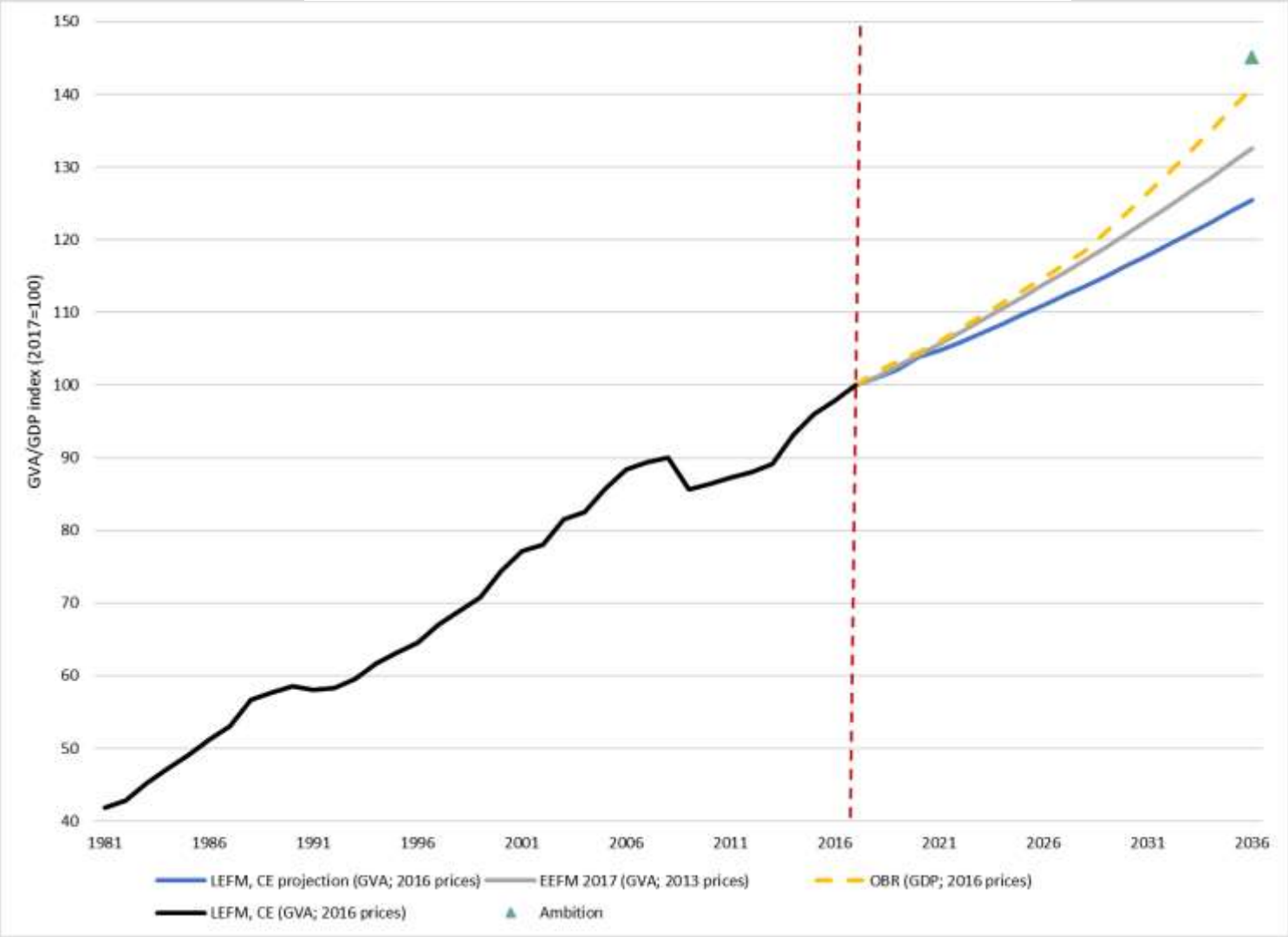
Figure 3 illustrates ambitions and forecasts about the East of England economy as an index, with 2017 as the base year.[6] The growth targets for the next 20 years are to achieve or surpass the forecasts of both the East of England Forecasting Model (EEFM) and the Local Economy Forecasting Model (LEFM). More specifically, the combined ambition of regional authorities implies that by 2036 the East of England economy will grow by 45% (compared to 2017), while the EEFM and LEFM predict growth of 32.6% and 25.5% respectively.

Apart from the GVA growth figures from the LEFM and EEFM projections and the combined ambitions, Figure 3 includes a projection based on the Office for Budget Responsibility (OBR) forecasts. Due to lack of official forecasts at the regional level, we have used the OBR rates (under the baseline scenario) for the national economy to estimate future growth for the East of England if it achieves the forecasted national growth rate. The combined growth targets imply a cumulative growth rate higher than the one forecasted by the OBR (45% compared to 41%).

Hence, the combined growth ambition for the next 20 years is feasible yet ambitious; to surpass the projections of both the East of England Forecasting Model (EEFM) and the Local Economy Forecasting Model (LEFM), as well as the national growth rate predicted by the OBR.

[6] This implies that the 2017 value is set to 100, and future or past values indicate the percentage difference with 2017 (e.g. a value of 110 in 2020 would imply a 10% growth since 2017).

Figure 3 Projected GVA growth in the East of England over the next 20 years



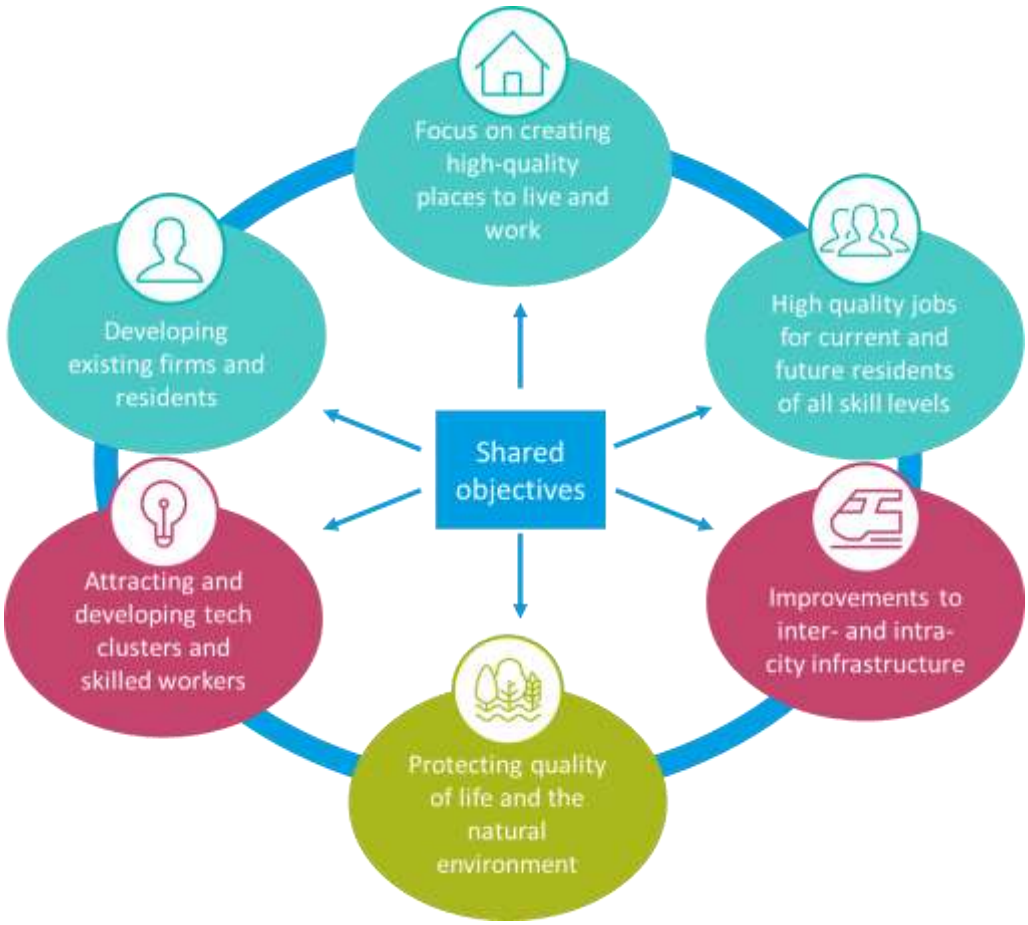
Whilst the ambitions of the regional authorities do not seem overly unrealistic, they do imply an acceleration of the regional economy relative to model forecasts. Better regional coordination and a wider spatial and strategic plan would be essential to overcoming the obstacles holding back the East of England economy and achieving the combined growth target. Even though incentives may exist to act in (relative) isolation and compete for resources and funding, the areas constituting the East of England share similar ambitions, face similar challenges and possess complementary assets, making collaboration and unity a more beneficial course of action.

Shared objectives

Whilst each local area has its own set of circumstances, there are a range of objectives that are shared by all areas of the region. These include:

- improvements of both inter-city and intra-city infrastructure;
- provision of employment land and premises, as well as place-shaping for technology-based businesses and skilled workers;
- maintaining the balance between high levels of housebuilding whilst protecting the natural environment and quality of life of residents;
- the need to provide high-quality employment opportunities for existing and future residents, of all skill levels.

Figure 4 Objectives shared across the East of England



A spatial vision for the East of England

Unlike other English regions (such as the West Midlands and the North East), the East of England isn't based around a single conurbation.[7] This presents challenges, but also opportunities. An alternative vision of the region as a network of economic corridors provides a different lens through which to envision future growth. Greater Cambridge is the UK's centre of innovation and its knowledge generation is rivalled only by London in this regard. The area specialises in ideas and has a leading position in innovation, design and technology consultancy in Global Value Chains. Whilst the innovation and knowledge intensive activity in the region isn't restricted to Cambridge, it is undoubtedly concentrated around the city.[8] Figure 5 depicts the economic corridors within the East of England, most of which are centred around

[7] The Nomis *population estimates – small area based by single year of age* dataset provides population estimates of major towns and cities (defined as having at least 75,000 usual resident population or workday population) in England and Wales. The largest cities in the East of England are Luton (223,000); Norwich (196,000); Southend-on-Sea (184,000); Peterborough (176,000); and Ipswich (150,000). None of them are included in the top population quintile, as they are ranked 24th, 26th, 30th, 33rd and 41st respectively among 112 towns and cities.

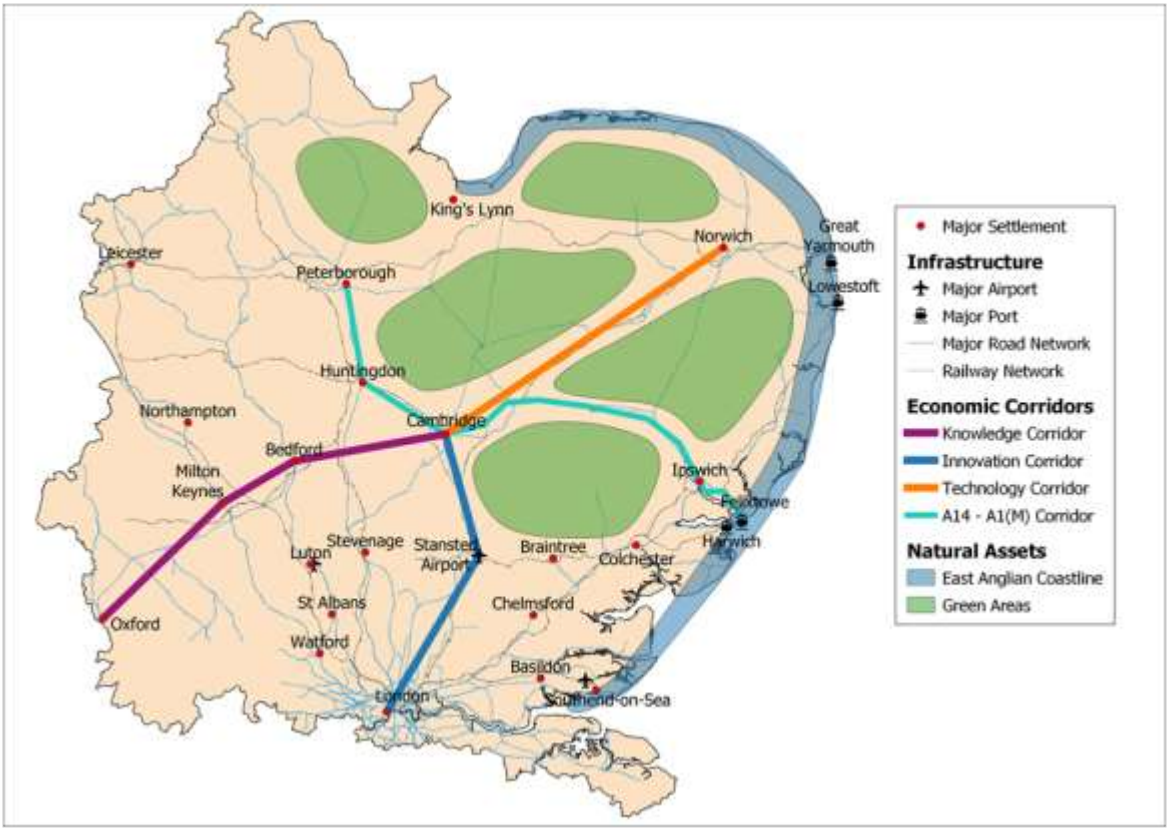
[8] According to the Complete University Guide, the University of Cambridge is the top ranked University in the UK and is fourth in research quality, while in the Times Higher Education World University Rankings it is ranked second globally overall and in terms of research. Furthermore, according to the East of England Science and Innovation Audit (2017), just under half of private R&D total spend for companies registered in the East of England is in Cambridgeshire (noting that some of the major players in the East of England, such as BT, are registered elsewhere and are not included in the figure).

Cambridge. There is a big opportunity to more closely link Greater Cambridge to the rest of the region and the UK through improved transport infrastructure.

However, the future of the East of England is not restricted solely to these corridors. The region has many other valuable assets, including both high-quality farmland and the East Anglian coastline. These assets offer complementary capabilities, which make up a broad regional offer that is greater than the sum of its parts.

Our vision of the future of the East of England is therefore a network of dynamic knowledge corridors, that make the best possible use of their existing and (improved) future infrastructural assets by linking the key regional clusters and institutions, connecting with both the significant coastal assets to the East with specialisations in logistics, offshore renewables and tourism,[9] as well as to the London Commuter belt to the south. These corridors are interspersed with rural oases, which themselves provide a wide range of growing employment opportunities in the tourism and agri-food sectors.

Figure 5 Economic Corridors with high growth potential within the East of England



… as well as being at the global forefront in solving numerous social, economic and environmental challenges…

The region can, and should, take the lead in tackling the four National Industrial Strategy Grand Challenges; namely Artificial Intelligence and Data,

[9] See Chapter 4 for a detailed analysis on the employment specialisations within the East of England.

Ageing Society, Clean Growth and the Future of Mobility.[10] Furthermore, apart from these Grand Challenges, the East of England is well-placed to play a major role in the Future of Electronics, Agri-Food, Construction and Professional Services (Table 1). The above should be part of a wider ambition to continue to drive the UK's leading position in global innovation networks and supply chains, by contributing to the development of new products and services in a wide range of global value chains.

Due to the rapid rate of technological progress and shifting global trends and priorities, the products and services we consume will change in both construction and functionality. Hence, the scope of global value chains will evolve radically over the next few decades, providing specific opportunities for the East of England to build on current cutting-edge technological strengths, many of which have significant environmental, social and economic benefits associated with their continued development.

[10] Department for Business, Energy and Industrial Strategy (2017). Industrial Strategy: building a Britain fit for the future. London, United Kingdom.

Table 1 Future challenges and opportunities, and the East of England offer

Challenge	Description	East of England Offer	Key Clusters/Locations	Key Facts and Figures
Grand Challenges				
Artificial Intelligence and Data	Putting the UK at the forefront of the artificial intelligence and data revolution	- The East of England has a rich history and tradition in computer science and information technology in both academia and business, and is currently one of the most dynamic and innovative technology centres globally spurred primarily by the 'Cambridge Phenomenon'	- Cambridge Cluster - Adastral Park - Hertfordshire IT cluster - Cranfield University	- The East of England is 2nd among UK regions in digital tech turnover and 3rd in digital tech business count and employment[11] - Tech concentration in Cambridge is double the UK average[12]
Ageing Society	Harnessing the power of innovation to help meet the needs of an ageing society	- The region is home to world-class universities and research institutions in the fields of medicine, pharmaceuticals and biosciences, as well as to some of the most globally important companies in these sectors, thus offering opportunities for collaboration, commercialisation and knowledge exchange	- Cambridge Cluster - Norwich Research Park - Stevenage Bioscience Catalyst - BioPark - GlaxoSmithKline R&D	- Institutions and entities from the East of England accounted for the following shares in UK Research Council funding in 2004-16: 24% in *regenerative medicine*; 20% in *microbiome*; 26% in *personalised medicine*; and 21% in the (much bigger) sphere of *drug discovery*. The shares for EU funding are broadly similar[13] - Only region with specialisation in all four life sciences sectors (*core biopharma*, *biopharma service and supply*, *core medtech*, *medtech service and supply*) relative to the national level[14]

[11] Tech Nation report 2019

[12] Tech Nation report 2018

[13] East of England Science and Innovation Audit (2017)

[14] Ibid.

Clean Growth	Maximising the advantages for the UK industry from the global shift to clean growth	- The East of England coastline is a major hub for offshore wind and nuclear power generation, while the region's decades-long history in the oil and gas sectors has endowed it with a developed and experience supply chain	- East of England Energy Group - East of England Energy Zone - OrbisEnergy	- 60% of offshore wind Energy in the UK generated in the East of England[15] - There are currently 986 wind turbines off the region's coast generating 3.75GW of renewable energy, with an additional investment of £50bn over the next ten years to deliver more than 1,000 additional turbines[16]
Future of Mobility	Being a world leader in shaping the future of mobility	- The region has several important knowledge and infrastructure assets that can help make significant contributions in shaping the future of mobility	- Aerospace Technology Institute - Millbrook Proving Ground - Nissan Technical Centre Europe - Lotus Cars - Multi-User Environment for Autonomous Vehicle Innovation (MUEAVI), Cranfield University	- Cranfield is UK site of the Nissan Centre of Excellence for design and development of vehicles manufactured in the European plants, employing 900 on site[17] - Lotus will produce the first all-electric hypercar by a British manufacturer[18]

[15] Ibid.

[16] New Anglia LEP (2017a)

[17] Life at Nissan Cranfield.

[18] News announcement by Lotus.

Challenge	Description	East of England Offer	Key Clusters/Locations	Key Facts and Figures
Other Challenges and Opportunities				
Future of Electronics (both consumer and business electronics)	Staying at the technological frontier by focusing on the most leading-edge fields, such as home and portable entertainment platforms, Internet of Things (IoT), Virtual Reality (VR), Artificial Intelligence (AI), connected systems, sensors, and robotics	- Several globally and nationally significant technology clusters are thriving in the area, while leading research universities with specialisations in computer science and engineering are also located in the area and are frequently collaborating with the business sector to produce innovative ideas and products	- Cambridge Cluster - Adastral Park - Hethel Engineering Centre - Hertfordshire IT cluster - Airbus Defence and Space Stevenage - Cranfield University	- Businesses in Cambridge are 4 times more likely to focus on electronics and components than the national average[19] - The East of England has employment specialisations in a number of electronics, materials and engineering subsectors[20]
Future of Agri-Food	Developing specialisations in producing high-quality, healthy, ethical and sustainable food without being unaffordable	- The East of England has a unique combination of high-quality farmland and R&D focused on the agri-tech and bioscience sectors, allowing for both cutting edge research and implementation	- National Institute of Agricultural Botany (NIAB) - Rothamsted Research - John Innes Centre - Quadram Institute - Hertfordshire IQ - Agri-Tech East - Eastern Agri-Tech Growth Initiative	- For the period 2004-16, the East of England accounted for 35% of UK Research Council Funding in *plant and crop science*; 24% in *agri-environmental science* and 16% in *food science and nutrition*[21] - The East of England has a total farmed area of 1.4m hectares, accounting for 15.3% of total farmed area in England (second to the South West's 19.3% share). 79% of the farmed area is arable, by far the highest share and largest arable area among English regions[22]

[19] Tech Nation report 2015.

[20] See Chapter 4 of this report.

[21] East of England Science and Innovation Audit (2017).

[22] https://www.gov.uk/government/statistics/agricultural-facts-england-regional-profiles

Future of Construction	Taking the lead in novel construction methods and trends, including offsite construction, build-integrated technology, energy efficiency	- The fact that the East of England includes several of the fastest growing housing markets in the UK, combined with its proximity to London, expertise in engineering and innovation and specialisation in construction, put the region in an excellent position to take the future of construction forward	- Hertfordshire IQ - Hethel Engineering Centre - Building Research Establishment (BRE) Watford	- According to ONS data[23], the East of England ranks 3rd among regions in Great Britain in concentration of construction firms, and 4th in concentration of construction-specific employment - Apart from the Cambridgeshire and Peterborough CA, all other LEP areas in the East of England have an employment specialisation in construction[24]
Future of Professional Services	Taking advantage of technological advances that can improve the productivity of the sector, such as new analysis tools, virtual offices, digital platforms, cloud services, sharing of specialist tacit knowledge	- The region is well-placed to tackle this challenge due to its diverse mix of local specialisations, knowledge assets, dynamic business environment and technological know-how	- Cambridge Cluster - Adastral Park - Norwich financial services cluster - Ipswich insurance services cluster	- The region has significant employment specialisation in the *professional, scientific and technical activities* and *information and communication* sector[25]

[23] ONS (2018). Construction statistics: Number 19, 2018 edition.

[24] See Chapter 4 of this report.

[25] See Chapter 4 of this report.

… but there are a number of challenges that need to be overcome to realise this ambition,

The growth potential of the East of England and the corresponding manifold benefits to the UK economy, society and the environment will not be realised without intervention. There are significant constraints currently holding back the development of the region, which, in order to be lifted, require joined-up local and national government action:

- Future growth prospects in the Greater Cambridge area are currently severely constrained by its ability to provide realistically affordable housing[26] and commercial space for future firms and employees, and, not least, its ability to efficiently move daily commuters around and between its various employment hubs, many of which are on the urban fringe where they have poor public transport connectivity. Similar issues are also affecting Hertfordshire.[27]
- The northern and eastern fringes of the region (Fenland and areas of Norfolk and Suffolk) suffer from issues associated with rural peripherality, including patchy infrastructure provision, low levels of enterprise and innovation[28], as well as difficulty in attracting young graduates and/or accessing suitably skilled (further or higher education) local workers[29]. The key here is to better integrate these peripheral areas into the economic market areas of their local employment centres, without compromising the high levels of natural capital that make them unique and attractive areas in their own right.
- A challenge facing Essex, Norfolk and Suffolk is to tackle its disadvantaged urban communities in coastal areas.[30] Making better use of coastal assets, including in transport and logistics, offshore renewables and tourism to provide employment opportunities, is key here.

[26] According to the Cambridgeshire and Peterborough Independent Economic Review (2018), both the house-price-to-earnings ratio and the ratio of private median rents to median income in most Cambridgeshire district council areas are higher than the England average. Cambridge is the least affordable: the average house price is 13 times higher than average earnings (for England it is 7.8), while the median rent is 41% of the median income (the relevant value for England is 27%).

[27] Housing delivery in the post-recession period has consistently lagged behind the planned targets, while the housing affordability ratio has declined for all local authority districts in the county over the period 2013-15 (Hertfordshire LEP, 2017).

[28] 48 businesses created per 10,000 residents compared to the UK average of 72, while only 14% of active enterprises introduced a new or significantly improved process or service between 2010 and 2012, below the UK average of 19% (New Anglia LEP, 2017b).

[29] In 2015, 36.7% of workers in Norfolk and Suffolk had a qualification of the highest level (NQV4 and above; for higher education this implies at least a bachelor's degree), while at the national level the relevant figure was 42.9% (New Anglia LEP, 2017b). Furthermore, over the academic years 2014-15, more students left Norfolk and Suffolk to study elsewhere than those choosing to study in the area (ibid.).

[30] Parts of the Tendring District in north East Essex are the most deprived parts in the country, according to the Indices of Multiple Deprivation for England, published by the Department for Communities and Local Governments (South East LEP, 2017). Furthermore, Castle Point in Essex is one of two authority areas in the country with the smallest proportion of over-16s holding advanced qualifications (ibid.).

- A pressing issue to the south and west of the region is the availability of employment land and premises.[31] Permitted Development Rights have led to a lot of commercial office space being repurposed as apartments – leading to loss of employment premises, and most notably, of the land they are on for future redevelopment. Therefore, existing employment sites are being encroached by residential use – and become impossible to consolidate and regenerate as fit-for-purpose, campus-style technology parks and business centres.
- Despite the significant knowledge assets, the region as a whole suffers from low levels of graduate retention.[32] This is partly due to the lack of a single conurbation with the diverse and exciting entertainment offer available in London or Manchester. The region needs to consider what its unique offer is to attract and retain young workers.
- Finally, there is acknowledged to be a lack of regional coordination across all sectors, technologies, challenges and factors of productivity. The right spatial level for coordination needs to be considered on a case-by-case basis.

with a number of potential solutions, among which better regional coordination is key.

One of the region's biggest challenges, shared across all local jurisdictions, is that several areas have a severe shortage of housing and employment space provision, while other areas struggle to attract and keep residents and businesses.[33] Improvement and expansion of the regional transport network, especially close to and between employment centres, is crucial in alleviating the pressure in the high-demand areas around the region, while also helping boost productivity and enhancing knowledge exchange and strategic connections both within the region and with neighbouring regions. Transport infrastructure improvements would also help the more peripheral areas improve their offer to potential new residents and businesses, as well as unlock new spaces for commercial and housing development.

The problem of attracting and retaining employees, particularly when it comes to young graduates, could be further improved through creative place-making and diversification of the entertainment options available.

Another important, and linked, intervention would be to facilitate the diffusion of knowledge and employment opportunities within the region, as there are

[31] For example, vacancy rates of commercial property in Norfolk and Suffolk have been dropping throughout 2012-16 (with the exception of Great Yarmouth), while incubation space is oversubscribed (New Anglia LEP, 2017b).

[32] CE analysis of Higher Education Statistics Agency (HESA) data shows that the share of graduates from an East of England institution that are employed in the region stands at 53.3%, one of the lowest retention rates in England (more specifically, only the East Midlands, South East and South West have lower rates). When excluding those that did not live in the region prior to their studies, this figure falls to 10.6% (once again 4th lowest in England).

[33] In the New Anglia LEP area, the figure of people per job ranges from 1.56 in Norwich and 1.8 is St. Edmundsbury to 2.85 in Waveney and 3.17 in North Norfolk (New Anglia LEP, 2017b; New Anglia LEP, 2017a; New Anglia LEP, 2017a). Furthermore, in the Cambridgeshire and Peterborough Combined Authority area, there is evidence that housing completions in more rural districts have fallen in recent years, while in the cities of Cambridge and Peterborough housing delivery has accelerated (The Cambridgeshire and Peterborough Independent Economic Review, 2018).

large disparities between urban and rural areas, and to a lesser degree, between some of the different urban centres as well. Supporting further and in-work education provision across the region could be helpful in this regard, as well as providing incentives for business creation in disadvantaged areas and collaboration of the commercial, research and public sectors across the region.

Even though the East of England is at the forefront of technological progress[34], not all firms in the region have taken advantage of this. A programme designed to encourage and facilitate the adoption of new technology and procedures across all sectors would see better use made of the region's considerable knowledge assets.

Finally, in order to effectively address the problems holding back the region's potential, better coordination of the regional authorities is key. Unlike the 'Powerhouse' in the North and the 'Engine' in the Midlands, the East of England does not currently have a unified strategy representing the region as a whole. Nevertheless, it is evident that the areas making up the East of England face several issues that are of a similar nature or are, in a way, complementary. Hence, it is important that the local authorities coordinate and collaborate in planning for the future development of the East of England, so as to avoid contradictory policies, spot and solve problems faster and more efficiently, and fully unlock the region's potential.

[34] UK Innovation Survey data for 2014-16 show that the East of England is the 2nd most innovative English region (narrowly behind the South East), with more than half of the businesses in the survey being innovation active (Department for Business, Energy and Industrial Strategy, 2018). Business R&D expenditure paints a similar picture: as of 2017, the East of England is 2nd with 19.7% of total UK business R&D spend, with the South East being 1st with 20.5% **Invalid source specified.**.

1 Introduction

1.1 Background and context

IFM Investors (IFM) are a global institutional investment manager with assets based across Australia, North America, and Europe. Within the UK in particular, IFM own a range of infrastructure assets, including the M6 toll, Manchester Airports Group, and Arqiva Limited (a leading UK communications infrastructure company). Focussing further on the East of England, IFM own Anglian Water and, as part of the Manchester Airports Group, London Stansted Airport.

As an investor with strategic holdings located in the East of England, IFM are keen to strengthen the performance of their long-term asset holdings. However, there is a feeling that, unlike the Northern regions with their 'Powerhouse' project or the Midlands region with their 'Engine', the East of England lacks a sufficiently coherent and ambitious economic strategy required to both maximise its economic potential and provide security for key asset-holders.

There is, consequently, a need for an economic positioning document which sets out the case for how a joined-up East of England could be more prosperous and successful, and how improved transport connectivity could be a part of this. This evidence can then be used as a backdrop for further discussions with regional and national political entities.

1.2 Objectives

Project objectives

This project investigates the prospect of achieving a more coherent strategic outlook for the East of England based on two key objectives:

(i) Identifying the areas of common cause, synergy, and strategic opportunity that all areas within the East of England Region can agree on.

(ii) Sense checking the combined local economic projections and quantifying the "size of the prize" through the estimation of "high" and "low" scenarios based on what is feasible and realistic.

Synthesis of strategy, strengths and capabilities

Firstly, a synthesis of documents relating to regional economic strategy for the East of England is provided, based on the areas of common ground in the outputs from key local enterprise partnerships (LEPs) and Combined Authorities (CAs) in the region (New Anglia LEP, Cambridgeshire and Peterborough CA, Hertfordshire LEP, and parts of South East LEP and South East Midlands LEP). A wider literature of national and regional growth strategies, building on a previous study done by Volterra,[35] is also undertaken.

Scenario analysis

Secondly, forward-looking scenarios are developed. This includes a baseline "business as usual" view which assumes that no major structural or strategic changes take place in the region, and also a "transformational" scenario which assumes the opposite. This will be carried out using the same methodology as was developed to enact the Northern Powerhouse Economic Review, the Economic Connectivity Review of the South East, and the Economic Analysis

[35] Volterra Partners (2017). Growth in the East of England and the role of Stansted: An Economic Review

of the Cambridge-Oxford Corridor. The inputs for this analysis are the comparison of the latest outputs from the East of England Forecasting Model (which CE maintains), with the stated sectoral growth ambitions of the different local and regional stakeholders.

1.3 Remaining sections of the report

The remaining sections of the report are set out as follows. Chapter 2 looks at the recent economic history, governance structure and infrastructure of the East of England. Chapter 3 identifies the combined ambitions of the region for the future. Chapter 4 considers some of the challenges and opportunities for the UK over the next decades and identifies the East of England's prime position in being able to tackle these, based on the region's assets and strengths. Finally, Chapter 5 outlines the challenges the region faces, lists the main interventions that the local authorities have planned for the future and identifies some broad potential solutions.

2 The Economy of the East of England

2.1 Introduction

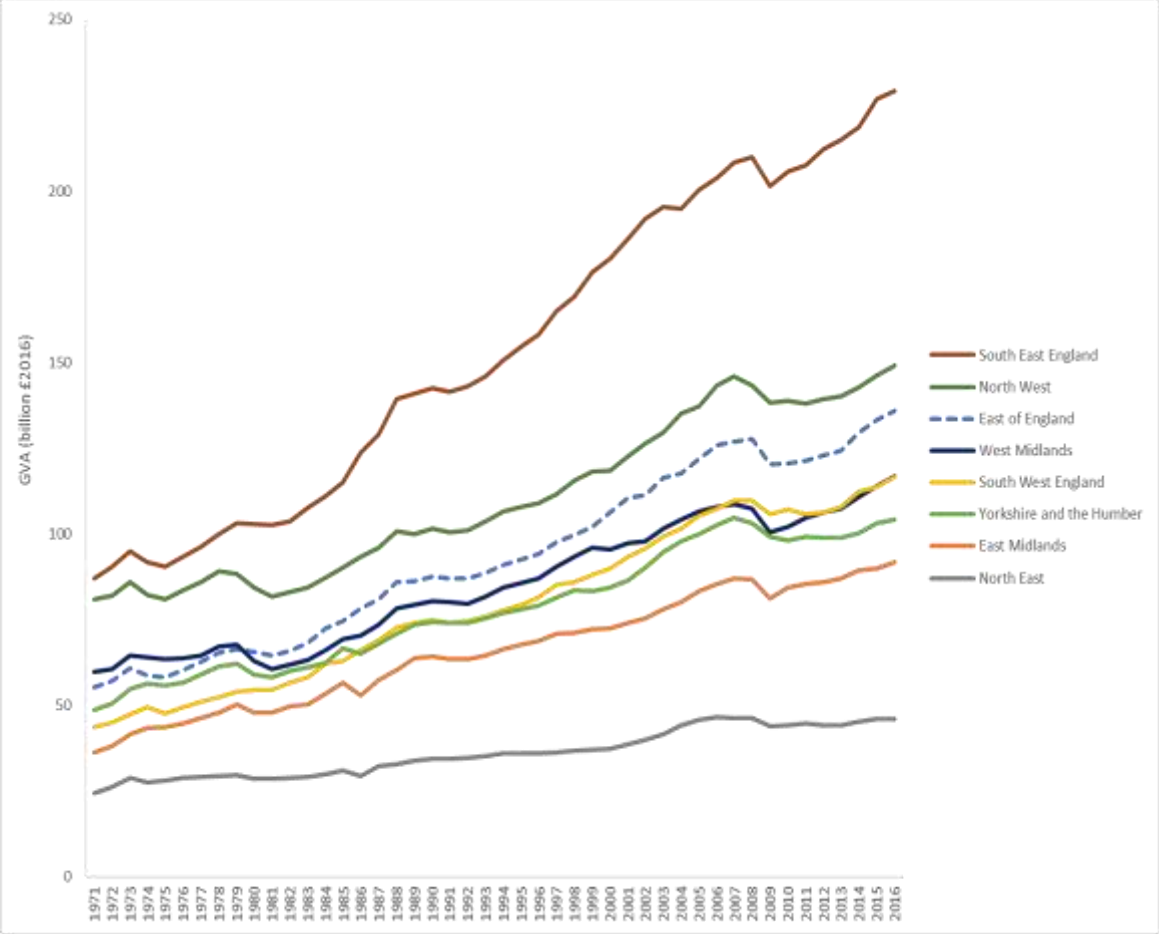
Chapter 2 looks at the recent economic history of the East of England, comparing it primarily to other regions in the south of England. Furthermore, it describes the region's governance framework and main infrastructure.

2.2 Economic history

Economic trends over the past 40 years

As part of the wider South East economy, the region has benefited from its proximity to Greater London, its high quality of life and its array of knowledge assets. Despite not containing any of the top 20 largest urban areas in the UK, the East of England is the 4th most prosperous region in England, with a Gross Value Added (GVA) [36] of over £150bn (2017), 9.8% of England's total GVA. Trends in regional GVA over the past four decades are illustrated in Figure 2.2.1. The East of England GVA rose by 146%, the fifth highest rate among regions in England and above the average rates for both the UK (133%) and England (136%).

Figure 2.2.1: GVA in English regions excluding London, 1971-2016



[36] According to the ONS: "Gross value added (GVA) is a measure of the increase in the value of the economy due to the production of goods and services." The OECD Glossary of Statistical Terms indicates that GVA "is a measure of the contribution to Gross Domestic Product (GDP) made by an individual producer, industry or sector". See here for all relevant ONS datasets and publications.

Employment has also seen significant growth in 1971-2016, expanding from 1.84m to 3.1m – a 68.8% increase, behind only the South West (71.6% employment growth) and the South East (70.2% employment growth) among regions in England over the same time period.

Comparison with wider South East area

Comparable regions which have also benefited from their proximity to London are the South East and the South West. As of 2017 the East of England accounted for 10.5% of total employment in England, which is slightly more than the share for the South West region but substantially below shares for London and the South East (Table 2.2.1).

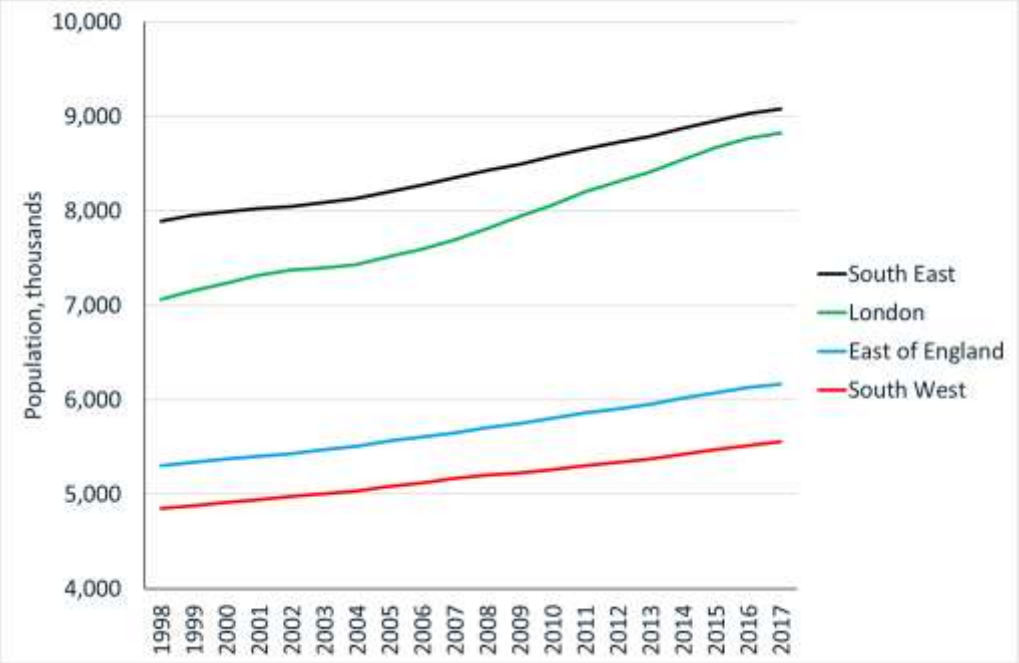
2017 GVA data, also in Table 2.2.1, broadly reflect the employment pattern. However, both London and the South East outperform the East of England in that their GVA shares are higher than their corresponding employment shares. This is further reflected in the productivity data where the East of England lags below London, the South East and England overall, but performs better than the South West.

Table 2.2.1 Economic indicator in 2017 (relative to England)

	East of England	London	South East	South West	England
GVA, %	9.8	27.7	17.1	8.4	…
Employment, %	10.5	19.5	16.7	9.9	…
Productivity, £2016m/000s	48.0	73.3	52.8	43.7	51.7

The East of England has experienced demographic and economic changes over the past 20 years. Out of the four regions in the wider South Eastern England, the East of England's population increased by over 16% between 1998 and 2017, the second largest population increase in relative terms after London which increased by just under a quarter over the same period (see Figure 2.2.2). Population in the South East increased by slightly less at 15% while the South West saw its population increase by 14.5% during the same time.

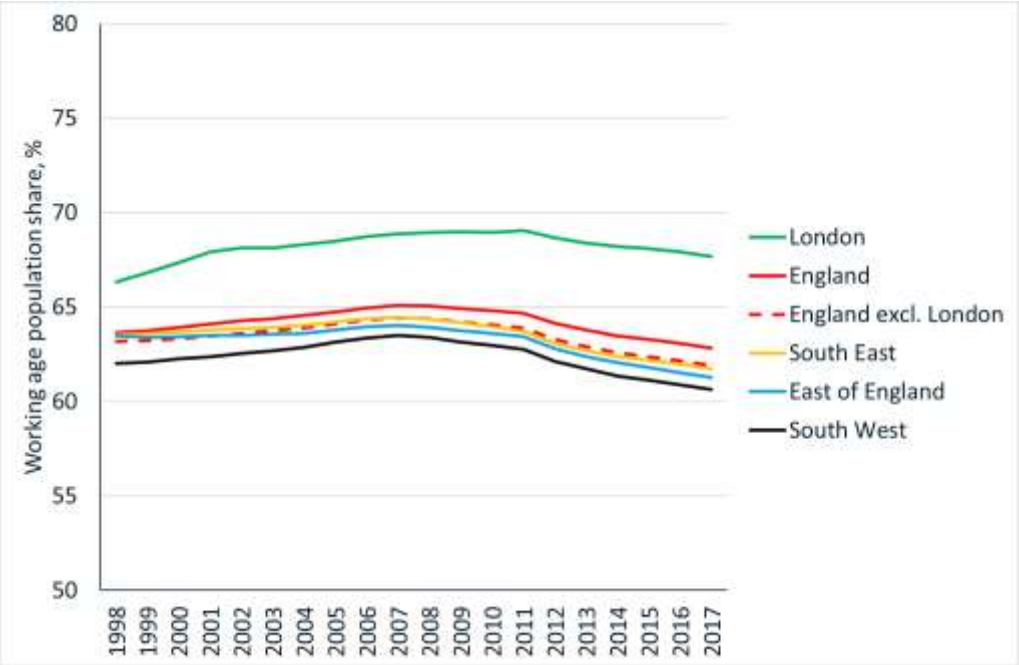
Figure 2.2.2 Population across Greater South East England



Turning to the working age population share[37] in Figure 2.2.3, all region shares increased until 2007, after which shares fell across the board with London being the exception. London is unique in that not only did it take until 2011 for its working age population share to start falling, but also has consistently maintained a noticeably higher share than other regions.

The post-2007 fall in the working age population share is consistent with the aging population observed across much of the Western world. For example, in England the growth rate of the working age population was higher than the total population growth rate until 2007 but this reversed from 2008 onwards.

Figure 2.2.3 Working age population shares across Greater South East



[37] This is the percentage of total population that is between the ages of 16 and 64.

Notably, the East of England's employment rate – the ratio of the number of employed to the working age population, aged 16 to 64 years – has consistently remained below its comparator regions (Figure 2.2.4) and averaged 78.7%. This low rate is likely due to the high rate of out-commuting of workers who reside in the East of England but work outside this region. A considerable part of the region lies within London's commuter belt such that many people reside in the region but work in London.

Fluctuations in the region's employment rate over the last 20 years are broadly in line with the pattern in other regions and in England overall, with the pre-2008 stability giving way to a substantial fall of about five percentage points during the Great Recession before an upward pick up in the employment rate after 2011.

Figure 2.2.4 Employment rate across Greater South East England

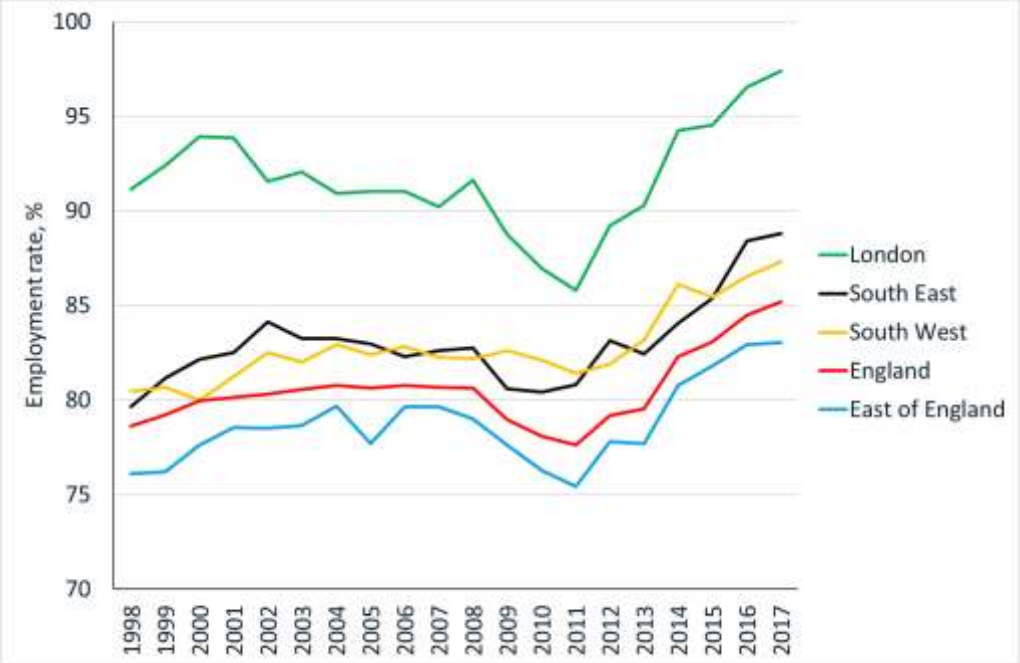
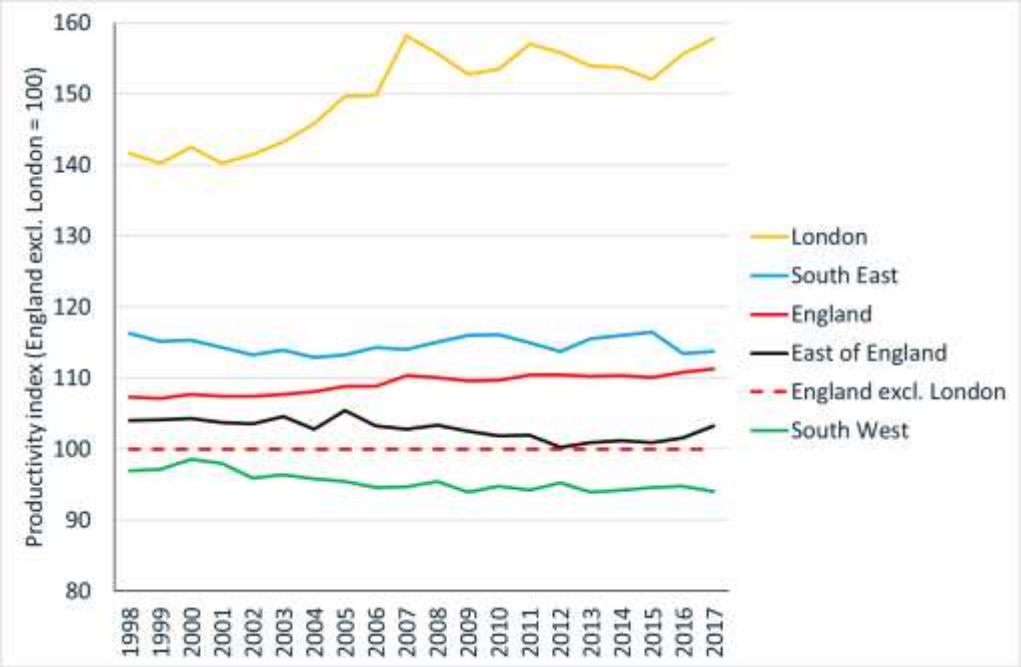


Figure 2.2.5 below plots how productivity in the main regions of interest has evolved over the last two decades, relative to the productivity in England with London excluded. We see that in the East of England relative productivity fell over 1998-2012 and although it has been trending upwards since 2012, that is, performing better than the reference geography, it remains below its 2005 peak.

The South West region performs the worst of all the regions, with its gap with England less London having continued to widen since the early 2000s. In contrast, London's productivity remained above, and improved in relative terms over the last two decades. The South East region placed second behind London in terms of productivity performance and its performance relative to England has changed little since the early 2000s.

Figure 2.2.5 Productivity across the Greater South East (relative to England excluding London)



2.3 Governance

The East of England is one of nine official English regions. It was created in 1994 out of the amalgamation of the traditionally rural area of East Anglia (comprising the ceremonial counties of Cambridgeshire, Norfolk and Suffolk) and three neighbouring counties to the south and west (Bedfordshire, Hertfordshire, and Essex) that by that time already formed part of the London commuter belt. The region comprises 47 local authority districts (LADs), each controlled by a local council.

Since 2011, the East of England has been represented by four Local Enterprise Partnerships (LEPs), with a mandate to determine local economic priorities and lead economic growth and job creation within the local area, along with a Mayoral Combined Authority (CA) covering Cambridgeshire and Peterborough since 2017. These include the New Anglia LEP; the Cambridgeshire and Peterborough CA; the Hertfordshire LEP; the part of the South East LEP covering Essex; and the part of the South East Midlands LEP covering Bedfordshire (Figure 2.3.1).

Table 2.3.1 presents some baseline facts about the areas constituting the East of England.

Figure 2.3.1 Map of combined authorities, local enterprise partnerships and local authority districts within the East of England

Table 2.3.1: Facts and figures, East of England constituent areas

LEP/CA	Population (million)	Employment (million)	GVA (billion)	Main urban centres
New Anglia	1.65	0.78	35.9	Norwich, Ipswich
Cambridgeshire and Peterborough	0.85	0.49	24.1	Cambridge, Peterborough
Hertfordshire	1.19	0.71	36.3	Watford, Hemel Hempstead, Stevenage
Greater Essex (part of South East LEP)	1.82	0.84	39.2	Colchester, Chelmsford, Basildon, Southend-on-Sea
Bedfordshire (part of South East Midlands LEP)	0.67	0.31	15.4	Bedford, Luton

Note: 2017 data. GVA in £2016 Chained Volume Measures.

No single coherent regional strategy

Whilst significant progress has been made in developing a coordinated transport strategy, including the launch of *Transport East* in 2018, the East of England does not currently possess a single coherent and ambitious economic strategy at the regional level. A widely agreed and accepted strategy document at this wider spatial level would help the region to maximise its economic potential and provide security for key asset-holders, in the manner that the Northern Regions and the Midlands have leveraged the concepts of the 'Northern Powerhouse' and the 'Midlands Engine' respectively in order to present a single coherent voice when representing the region to central government, the wider public and international partners.

Identifying areas of strategic alignment

These objectives are tackled through the synthesis of existing documents into a coherent overarching economic strategy and outlook for the East of England. This is based closely on the areas of common ground in the Strategic Economic Plans (SEPs) and emerging Local Industrial Strategies (LIS) of the key LEPs and the CA in the region, as well as other relevant policy documents. As well as reviewing all recent literature produced directly by LEPs and the themselves, we also review a wider literature of national and regional growth strategies, and build on the previous study done by Volterra, to provide a comprehensive overview as to the identified constraints and opportunities within the region.

2.4 Infrastructure

The term infrastructure embraces assets, capabilities and functions which underpin a functioning economy. These include systems for the provision of transportation, digital services, energy, water, waste removal as well as wider built and natural assets.

Transport and digital connectivity can deliver an impact on productivity through a number of mechanisms, for example, reducing traffic congestion in a city and improving its transport links to other areas can facilitate trade and the commuting workforce with a potential outcome being productivity gains.

Faster and reliable broadband connectivity speeds would allow remote working and tele-conferencing with the resulting lower costs to firms having a boost to productivity. More online-based businesses are also likely to be started by entrepreneurs.

New Anglia LEP

The New Anglia LEP area, composed of the counties of Norfolk and Suffolk, has an advantageous geographical position and diverse transport infrastructure which contributes to its local economy and to the UK more broadly.

The area is home to major seaports on the EU-Asia route which facilitate trade between the UK and the rest of the world. The Port of Felixstowe in Suffolk stands out, as it is the sixth largest UK port in freight traffic[38] and handles over 40% of national container traffic, making it the UK's busiest container port. Furthermore, Ipswich Port is the UK's largest exporter of grain, while King's Lynn is a regional centre for agricultural products. The ports at Great Yarmouth and Lowestoft also play a major role in facilitating the New Anglian region's thriving offshore energy sector.

Its air connectivity to other UK cities and international destinations such as the Netherlands is provided by Norwich International Airport, as well as the nearby Stansted Airport which, although outside New Anglia, can be accessed through the rail system and the network of roads, with the major ones being the A11, M11, A11 and the M25. In addition to these roads, other road transport infrastructure connecting New Anglia's major settlements and surrounding areas includes major roads such as the A140, A14, A10 and the A47. According to the Integrated Transport Strategy for Norfolk and Suffolk[39], there are congestion issues along the A47, A11 and A14, with ongoing campaigns to fully dual the A47 ('Just dual it') and to significantly improve the A14 ('No More A14 Delays in Suffolk').

The area is also served by a network of a railway routes which facilitate commuting between major settlements in the area as well as to major cities, with London being about sixty minutes from Ipswich and ninety from Norwich. The main rail routes include the Great Eastern Main Line (GEML), the West Anglia Main Line (WAML), and the Felixstowe to Peterborough route which connects into the East Coast Main Line.

Cambridgeshire and Peterborough CA

The Cambridgeshire and Peterborough CA extends across the six local authorities in Cambridgeshire and Peterborough which include Cambridge City Council, East Cambridgeshire District Council, Fenland District Council, Huntingdonshire District Council, Peterborough City Council and South Cambridgeshire District Council.

The area is served by a network of roads that link its major centres and to other major roads to the rest of the UK. The M11 and A1 are part of the major road network linking the area to the north and south of the country while the A47 (east-west) and the A10 (north-south) form part of a more locally focussed network connecting the economies of the area's major towns and cities. The A14 provides strategic links to the east coast ports and the Midlands. Traffic congestion and limited capacity along the road network pose constraints to business and employment growth in the CA.

The main settlements are also linked by a network of railway lines which also connect the area's transport infrastructure to the rest of the country. The main rail lines are the East Coast Main Line (ECML), connecting with London and the north, and the West Anglia Main Line (WAML), connecting with London

[38] Department for Transport, Port and domestic waterborne freight statistics 2017 (latest available).

[39] https://newanglia.co.uk/wp-content/uploads/2018/07/ITS-FINAL-280618.pdf

and Stansted Airport. However, a major gap in the network is east-west connectivity, with no direct link to important locations to the west, such as Oxford, Milton Keynes, Bedford, Luton and Luton Airport. Furthermore, links and frequency of trains to the more rural parts of the area are more limited.

The Cambridge International Airport provides some degree of air connectivity, but the more internationally linked London Stansted Airport, located 30 miles to the south of the City of Cambridge, is reachable in about thirty minutes by train or road. Nevertheless, even Stansted Airport provides limited access to direct long-haul flights, thus restricting access to important business destinations and markets.[40]

Hertfordshire LEP

Hertfordshire LEP covers the local authorities of Broxbourne, Dacorum, East Hertfordshire, Hertsmere, North Hertfordshire, St Albans, Stevenage, Three Rivers, Watford and Welwyn Hatfield. The Hertfordshire LEP area is in the north of London's commuter belt and within the UK's Golden Triangle of London, Cambridge and Oxford, and so benefits from its proximity to London and its geographical location within the UK's Golden Triangle, an area with globally competitive businesses in sectors crucial to the UK economy.

Hertfordshire's main transport infrastructure is in the form of major roads such as the A1(M), the M1 and the M25 as well as train lines linking its main settlements to one another and to the surrounding areas and the rest of the country. The main motorways are the M1, A1(M), M11 (traversing the region from north to south) and M25 (orbital to the south of the region), while the main rail routes are the West Coast Main Line and the East Coast Main Line. According to the Hertfordshire Infrastructure and Funding Prospectus[41], both the rail and the road network generally have good connections along the north-south axis, but the east-west links infrastructure is weaker. High levels of congestion along the main motorways and overcrowding in the main rail routes are areas of concern.[42]

Air travel is provided for by both Luton and Stansted airports, located just outside Hertfordshire to the West and East, respectively. Heathrow Airport is also accessible via the M25.

South East LEP (Greater Essex)

The Greater Essex area of the South East LEP is located between the north east of London, the west of Hertfordshire, the south of New Anglia and the English Channel to the east. It includes the local authorities of Essex, Thurrock and Southend.

Greater Essex has a high degree of air connectivity, with Stansted Airport as well as Southend Airport located within the area, linking it and many surrounding areas to multiple international destinations. Stansted Airport is one of the largest airports in the UK, being fourth in total number of

[40] Sources:

- https://cambridgeshirepeterborough-ca.gov.uk/assets/Uploads/GCGP-Strategic-Economic-Plan-WEB-1-2014.pdf
- https://www.cambridgeshirepeterborough-ca.gov.uk/assets/Business-Board/Meetings/Business-Board-190325.pdf (pp. 18-87)
- https://cambridgeshirepeterborough-ca.gov.uk/assets/Combined-Authority/NSSF-Phase-1-final.pdf

[41] https://www.hertfordshirelep.com/media/7096/hertfordshire-infrastructure-funding-prospectus-2018-2031.pdf

[42] https://www.hertfordshirelep.com/media/6326/grand-challenges-for-hertfordshire-2018.pdf

passengers and third in freight tonnage. As for Southend Airport, while it is only 20th in terms of passengers among UK airports, it is sixth in terms of freight.

Greater Essex is also home to major sea port facilities, which handle a substantial amount of the UK's sea cargo. The Port of Harwich is responsible for 1% of UK freight traffic and is an important centre for offshore energy, supporting a large number of wind turbines. Furthermore, the Port of Tilbury and the London Gateway form part of the wider Port of London (second largest in the UK), with the former being the third largest container terminal in the country, while the latter includes the largest logistics park in Europe.[43]

The M11 motorway facilitates a north-south traffic flow through the western part of Essex and together with other major roads such as the A12, A130, A414 and A120, they link this area's major settlements to the rest of the country. The train system provides additional connectivity to London (Great Eastern Main Line, West Anglia Main Line) while Crossrail provides links to the West.

South East Midlands LEP (Bedfordshire)

The Bedfordshire area of the South East Midlands LEP is made up of the three local authorities of Bedford, Central Bedfordshire and Luton. The South East Midlands LEP occupies an important strategic position due to its proximity to major economic centres, namely London, Oxford, Birmingham and Cambridge. Bedfordshire is located in the south-eastern part of the LEP, being closer to Cambridge and London.

The M1 and A6 major roads, together with the West Coast Main Line, the East Coast Main Line, and the Midlands Main Line, all of which pass through Bedfordshire, form part of the road and rail transport network serving the area. The road and rail network provide strong north-south links, but east-west links are limited, resulting in missed opportunities for the area.[44]

The area's air connectivity to domestic and international destinations is provided for by Luton Airport (5th largest in passenger traffic among UK airports)[45], while Stansted is also about one hour away by road.

Only Luton among the three local authorities in Bedfordshire has above average coverage of superfast (>24Mbps) broadband. However, all three authorities are significantly above the national average in ultrafast (>100Mbps) broadband coverage.[46]

[43] Freight statistics from the Department for Transport, Port and domestic waterborne freight statistics 2017 (latest available). Information from the 2017 Essex Economic Report.

[44] https://www.semlep.com/modules/downloads/download.php?file_name=742

[45] Civil Aviation Authority data.

[46] https://www.semlep.com/modules/downloads/download.php?file_name=742

East of England as a whole

Overall, the East of England has a functional road network composed of major and minor roads connecting its main cities and towns, that is largely in line with its predominantly rural nature. Several major rail routes also traverse the region, providing additional connectivity. However, both the road and rail network are primarily developed along the north-south axis, with east-west links being weak across almost all areas comprising the region. Furthermore, congestion along the main transport routes is a common issue across LEP areas. Rail connectivity is in need of improvement, particularly away from the East Coast and West Anglia mainlines, but also along the latter, as documented by the West Anglia Taskforce.

There are multiple airports in Stansted, Luton, Norwich and Southend which link the region to other parts of the UK and to international destinations. Of these. Further international linkages are achieved through the major ports located in Norfolk and Suffolk (primarily Felixstowe) and Greater Essex (Harwich, Tilbury, London Gateway).

Figure 2.4.1 and Table 2.4.1 summarise the main infrastructure across the region.

Figure 2.4.1: Main infrastructure in the East of England

Figure 2.4.1(a): Main roads, rail lines, airports and sea ports in the East of England

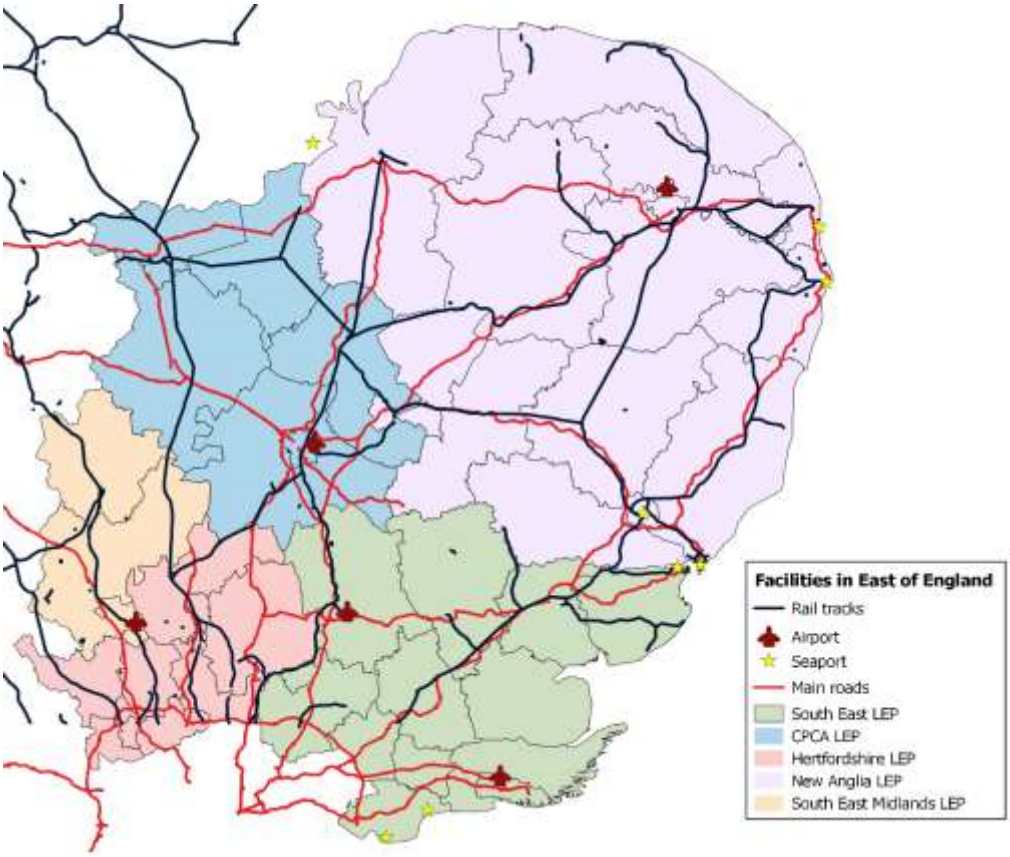


Figure 2.4.1(b): Location of major ports in the east of England – two of the most significant ports are at Harwich in Essex and Felixstowe in Suffolk

Table 2.4.1 Summary of major infrastructure in the East of England

Infrastructure	New Anglia LEP	Cambridge and Peterborough CA	Hertfordshire LEP	South East LEP (Essex)	South East Midlands LEP (Bedfordshire)
Airports	- Norwich Airport	- Cambridge Airport	- NA	- Stansted Airport - Southend Airport	- Luton Airport
Sea ports	- Felixstowe - Ipswich - Lowestoft - Great Yarmouth - King's Lynn	- NA	- NA	- Port of Tilbury - London Gateway Port - Harwich Port	- NA
Major roads and rail	- A11, A12, A14, A47, A10, A1307	- A14, M11, A1(M), A47, A10	- M1, M11, M25, A1(M)	- M11, A12, A127, A13, A120, M25	- M40, M1, A1(M), A14, Oxford-Cambridge Expressway
Railway lines	- Great Eastern Main Line - Cross-country corridor	- Great Eastern Main Line - East Coast Main Line - West Anglia Main Line - Cross-country corridor	- Midland Main Line - East Coast Main Line - West Anglia Main Line	- West Anglia Main Line - Great Eastern Main Line - Essex Thameside line	- East-West Rail - Midland Main Line - East Coast Main Line - West Coast Main Line
Energy assets	- Sizewell power station - Bacton Gas Terminal - Renewable energy at Great Yarmouth and Lowestoft - Offshore wind turbine farms [47]	- NA	- Rye House power station (gas)	- Coryton power plant (gas)	- Little Barford power station (gas)

[47] New Anglia LEP, 2017a (p. 12 and p. 27)

3 Ambitions for Growth

3.1 Introduction

This chapter looks at the economic forecasts for the East of England and its LEP/CA areas and identifies to what extent the ambitions set out in their Strategic Economic Plans (SEPs) can be achieved. The headline indicators that we will be looking at are:

- Population
- Employment
- Real GVA/GDP

Then, the chapter looks at targeted growth areas of the local authorities and presents a spatial vision for the East of England.

3.2 Forecasting methodology and data sources

The historical timeseries of GVA and employment used in this chapter are based on Cambridge Econometrics' local authority district (LAD) database (1981-2017), whilst the population data is taken from ONS's mid-year population estimates (MYE). Employment is defined as workplace-based jobs, which includes full-time, part-time and self-employed. The employee data are based on BRES (and ABI, AES and CoE) while the self-employment data originate from the APS[48]. GVA is expressed in constant (£2016) price to allow for inflation adjustment and it comes from the ONS. LAD level data are aggregated to form the projections about the different LEPs and CA, as well as the region as a whole.

Regarding the projections, we will be looking at the forecasts from the ONS or OBR and compare these to the East of England Forecasting Model (EEFM)[49] and CE's Local Economy Forecasting Model (LEFM). The following sections discuss briefly how each of the indicators are forecasted by CE using different models.

The EEFM (2017)

The EEFM (2017) is the latest model version that uses local area data up to 2015, and projects forward to 2045, reflecting the available global, national and regional forecasts. It is important to note that the EEFM forecasts are based on observed past trends only and are unconstrained.

The population data is taken from ONS's MYE to 2015, and the ONS 2014-based population projections are used thereafter. The total population is forecast as last year's population plus natural increase and net migration (domestic and international).

[48] BRES = Business Register and Employment Survey, ABI = Annual Business Inquiry, AES = Annual Employment Survey, CoE = Census of Employment, APS = Annual Population Survey. The chronology of these databases is as follows: BRES – 2009 onwards, APS – 2004 onwards, ABI – 1998-2008, AES – 1991-1998, CoE – 1981-1991

[49] The EEFM was developed by Oxford Economics and is currently maintained and updated by Cambridge econometrics.

The workplace employment (jobs) is forecasted separately in every area by industries based on the trend of concentration of employment (location quotient – LQ) relative to the regional average. The model projects the LQs based on how they have changed over time and estimates employment based on these projections and other variables in the model.

Real GVA from EEFM (2017) is based on 2013 prices and is projected from 2015 onwards using forecast regional GVA per job (by sectors) from CE's UK Regional Model and EEFM's forecast total workplace employment (by sectors) for each local authority. The projections are then adjusted subject to wage differentials and published NUTS 3 level GVA estimate for the relevant base year (2013).

The LEFM

The baseline LEFM employment projections are based on historical growth in the local area relative to the wider region or the UK (depending on which area it has the strongest relationship with), on an industry-by-industry basis. It is assumed that those relationships continue into the future (up to 2050) and that the economic growth in the local area is not constrained by supply-side factors, such as population and the supply of labour. All the historical data (1981-2017) are consistent with the regional and UK level data from the ONS.

Projections for GVA at the LAD level are derived from sectoral productivity data from ONS Regional Accounts at the NUTS 2 level. The productivity of each local authority within a region is assumed to be equal to regional productivity and follow the same growth trends. Hence, regional productivity is projected forward and the LAD level GVA projections are obtained by applying projected productivity to the projected employment from LEFM.

Finally, population data are projected by applying the growth rates of 2016-based Subnational Population Projections from the ONS to the historical data from the latest MYE.

3.3 Results and comparisons

Measuring growth ambitions of the LEPs and CA in the East of England

This section presents forecasts of population, employment and GVA growth for the LEP areas and CA within the East of England and compares them with the growth targets set by the regional and local authorities. We then combine these targets to form an overall ambition for the East of England and assess its feasibility.

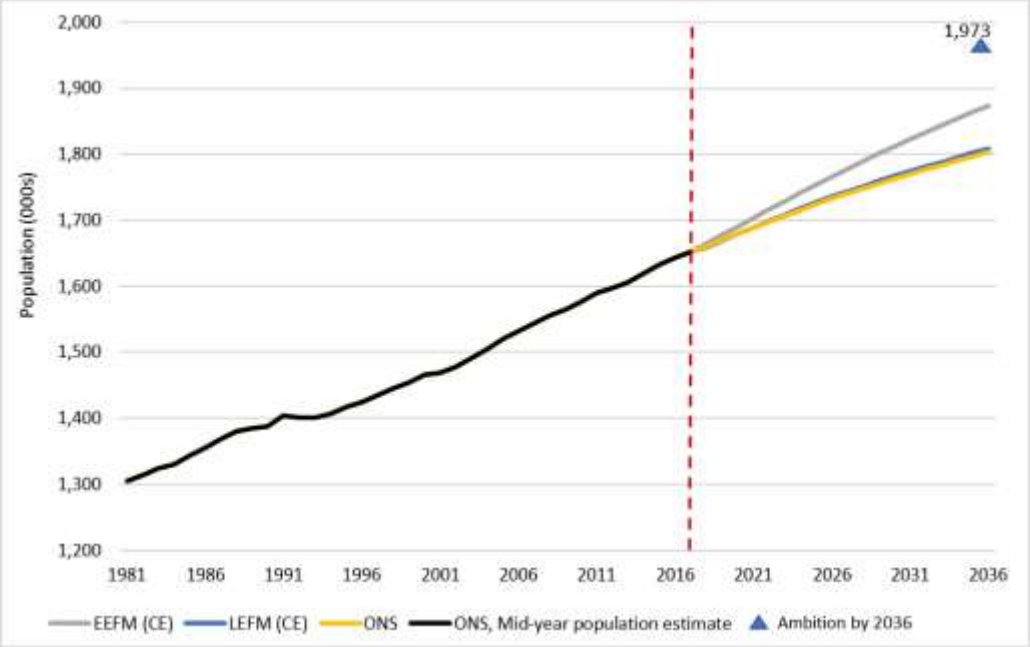
Population projections

New Anglia LEP

Figure 3.3.1 shows the population projections in New Anglia LEP from 2017 to 2036. The EEFM forecasts a higher population of over 1.85 million by 2036, whilst both the ONS and the LEFM forecast population to grow at lower rates which deliver approximately a population of 1.8 million by the end of the period.

The New Anglia LEP expects 140,000 new homes to be built by 2036, which is equivalent to a population increase of 322,000 based on the average household size in the UK, which is 2.3 people per household (Census 2011). This gives an estimate of almost 2 million people in 2036. This target is above all the projections, with a gap of between 100,000 to 200,000.

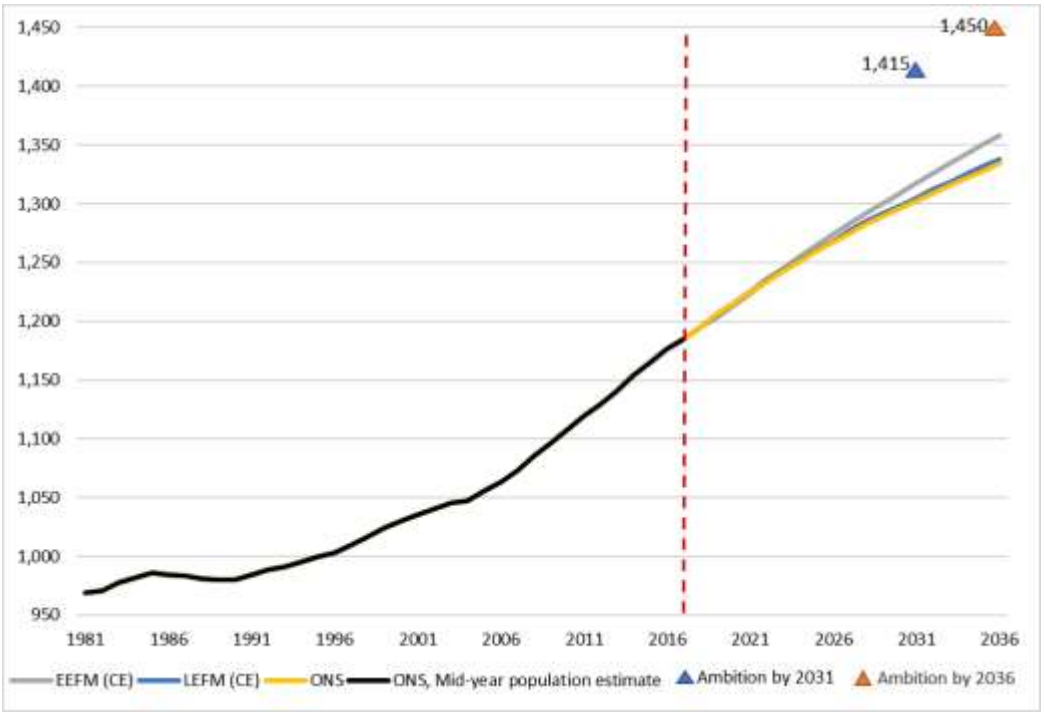
Figure 3.3.1 Population projections in New Anglia LEP



Hertfordshire LEP

Figure 3.3.2 shows the population projections in Hertfordshire LEP by 2036. The housing target for Hertfordshire LEP is taken from 'Hertfordshire fit for the future', where over 100,000 homes are planned by 2031 – equivalent to a population increase of 230,000, leading to a total of 1.4 million. Based on this estimate, we extrapolate the target to 2036 assuming that the trend will continue for another five years, which means a population increase of 35,000 (marked by the orange node). Both targets are well above the three sets of projections indicating that the strategic plan of the LEP might not be feasible.

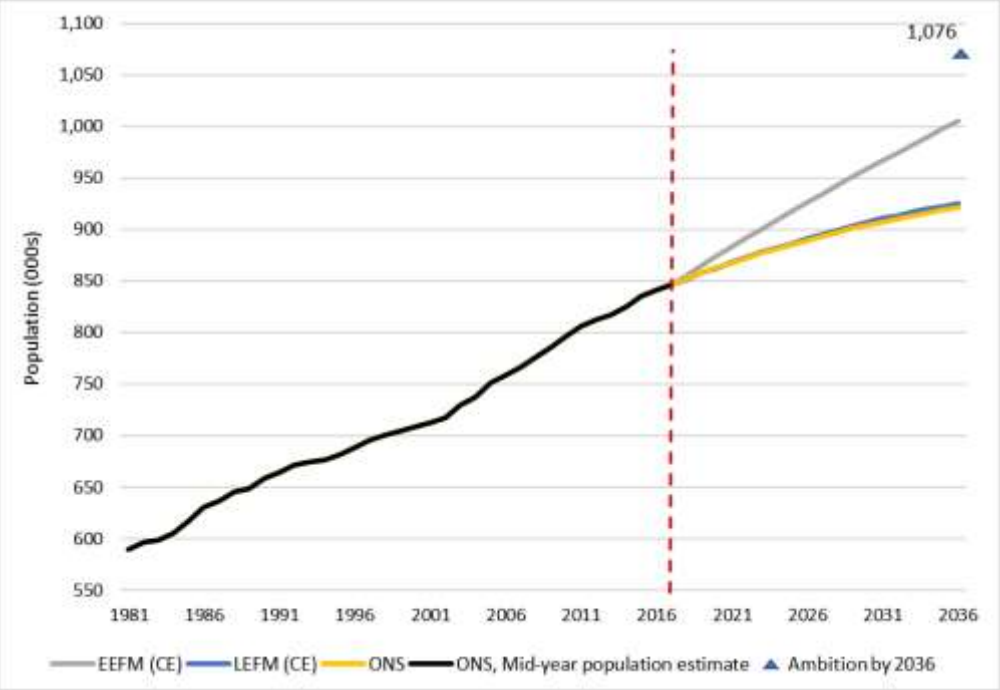
Figure 3.3.2 Population projections in Hertfordshire LEP



Cambridgeshire and Peterborough CA

Moving to Cambridgeshire and Peterborough CA, which hopes to deliver 100,000 homes over the next 20 years. This is approximately a population increase of 230,000 from 2017, as demonstrated in Figure 3.3.3. The projected population in all cases is below the target and the gaps are much higher when compared to LEFM and ONS projections (over 150,000).

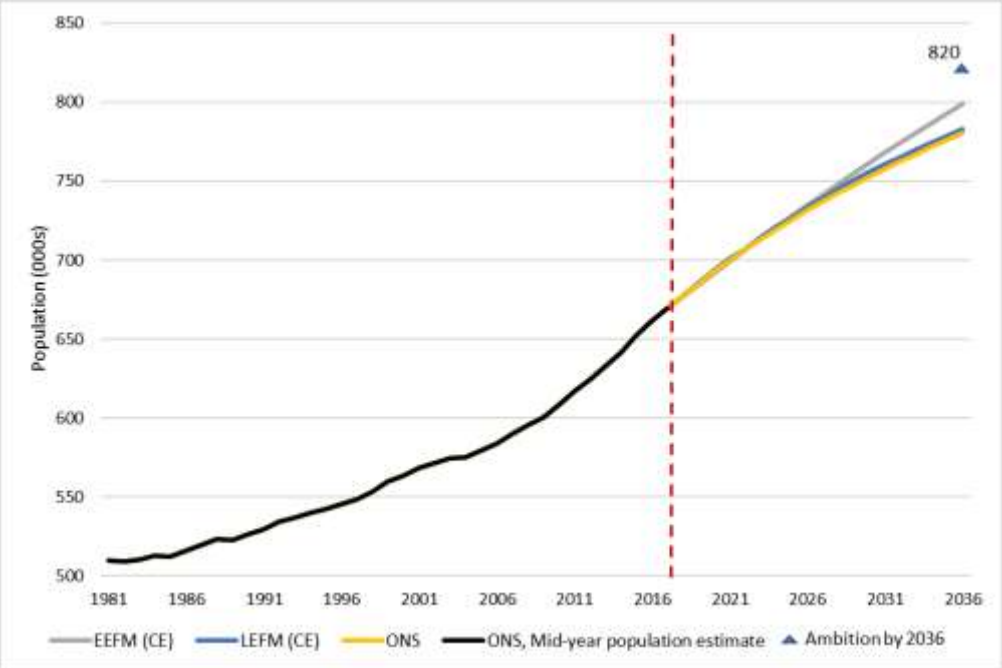
Figure 3.3.3 Population projections in Cambridgeshire and Peterborough CA



Bedfordshire

Figure 3.3.4 shows the population projections for Bedfordshire. Again, the EEFM projects a faster population growth compared to the ONS and LEFM. It forecasts Bedfordshire population will reach 800,000 in 2036, which is only 20,000 less than the planned population (820,000).

Figure 3.3.4 Population projections in Bedfordshire

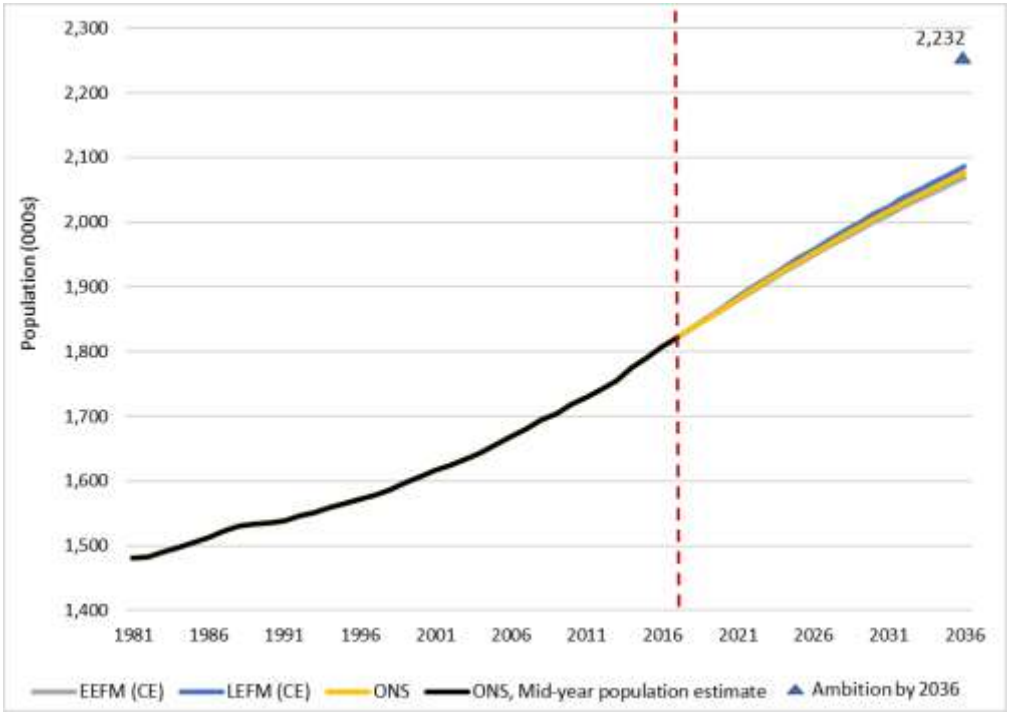


This gap is doubled for the other two sets of projections implying that the local plan is more likely to be met if the future population of Bedfordshire follows closely the underlying assumptions of EEFM population projection (see Methodology section).

Greater Essex

Figure 3.3.5 illustrates how the population of Essex is expected to evolve over time. Unlike the other areas, the three sets of projections for Essex are more consistent. However, the gap between the projections and the local area ambition is quite substantial, at around an average of 150,000. This target is estimated based on an objectively assessed housing need for about 179,000 new homes by 2036, which requires a completion rate of 9,000 dwellings per annum. Such target is assessed (by AECOM[50]) to be much higher than what Greater Essex has been delivering in the past.

Figure 3.3.5 Population projections in Essex

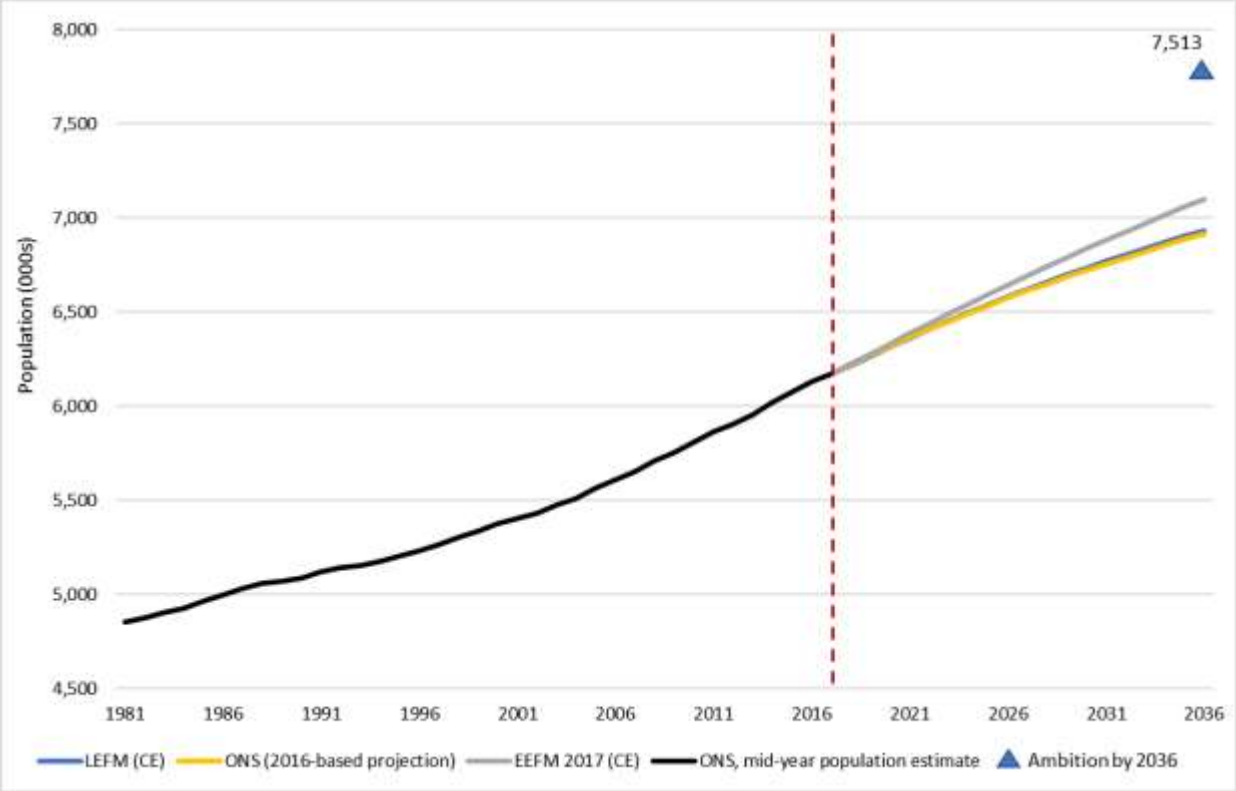


East of England

After considering all the housing needs for the LEPs and CA, we constructed a combined target of delivering over half a million new homes by 2036 for East of England as a whole. This target is calculated by aggregating all the ambitions that have been reported above which is equivalent to a population of over 7 million by the end of the projection period. Figure 3.3.6 shows that this target lies above all the projections meaning that the projected population growth in East of England is not sufficient to accommodate additional housing growth. The region is projected to grow at 0.7% by the EEFM and at around 0.6% every year from 2017 by the ONS and the LEFM whilst the target would require an annual growth of over 1%.

[50] AECOM has been commission by all of the local authorities in Essex to prepare a Growth and Infrastructure Framework (GIF) for the area (2016-2036).

Figure 3.3.6 Population projections in the East of England



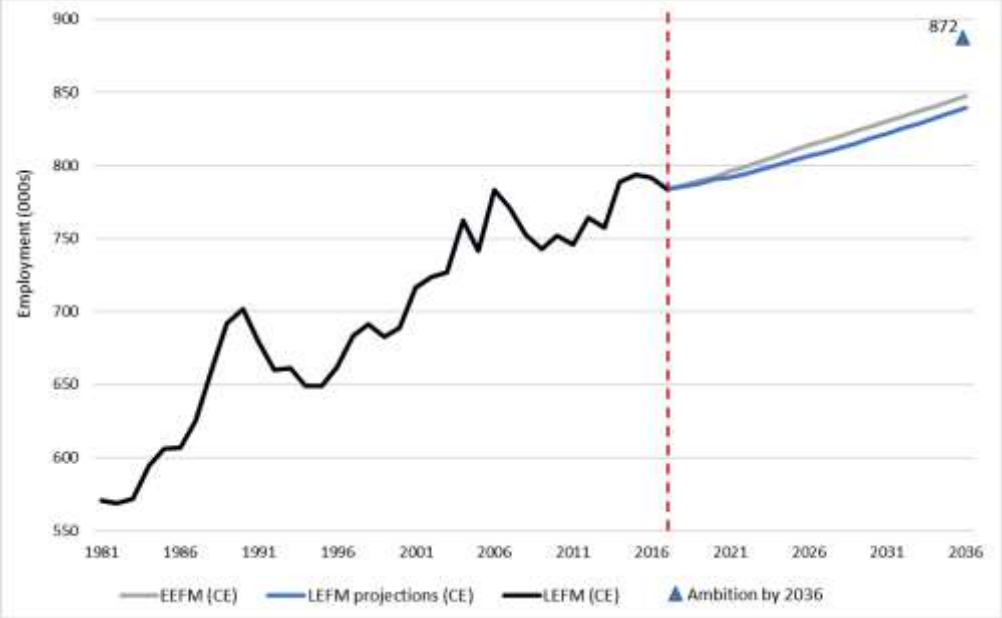
Employment projections

This section looks at the projected employment in the LEP areas and CA by 2036. Of the projection models, we will only be comparing the forecasts from LEFM and EEFM (2017) because the ONS employment projections are not available at local levels.

New Anglia LEP

Figure 3.3.7 shows the projections of employment in New Anglia LEP over the next 20 years. The historical time series is based on the LEFM historical database which is consistent with the ONS at regional and UK level. Both projections are smooth and trending upwards. The EEFM forecasts employment to grow at a slightly higher rate based on the projections of the relative employment concentration (LQ) of the local areas in New Anglia to the East of England average. These projections are below the LEP's expectation of delivering 88,000 net new jobs by 2036, yet not far from achieving it.

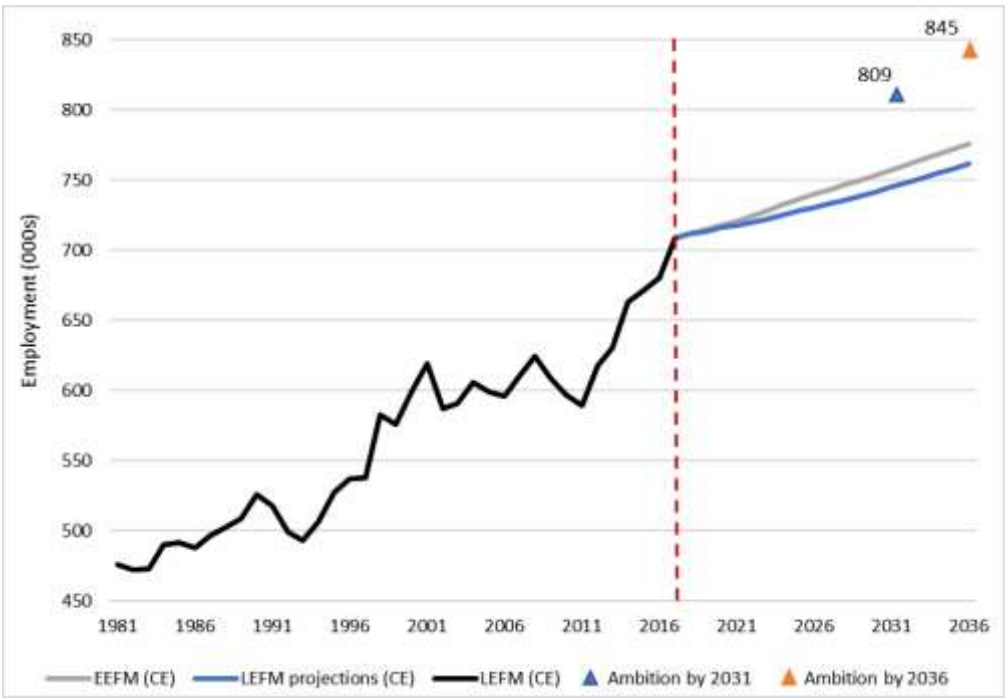
Figure 3.3.7 Employment projections in New Anglia LEP



Hertfordshire LEP

Figure 3.3.8 compares the employment projections in Hertfordshire LEP to two sets of ambitions that are estimated for 2031 and 2036. The blue marker determines the official employment target of creating over 100,000 new jobs by 2031. We then assume that the annual growth, in terms of absolute number of jobs, remain unchanged for another five years from 2031 and estimate an employment of almost 850,000 by the end of 2036, which is shown by the orange marker. Both targets are above the projections implying that the ambition set by the LEP could be difficult to achieve.

Figure 3.3.8 Employment projections in Hertfordshire LEP

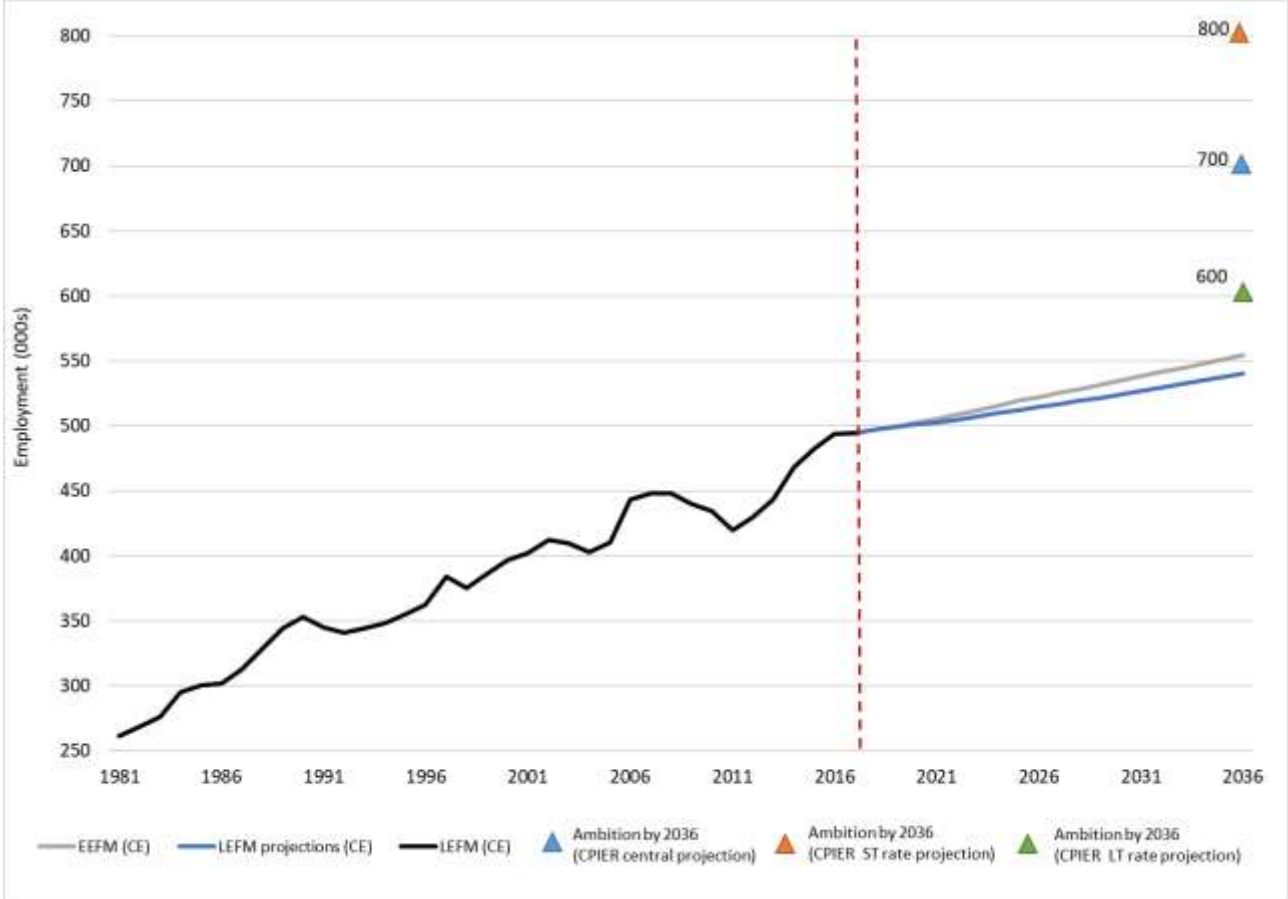


Cambridgeshire and Peterborough CA

Figure 3.3.9 compares the projections to three different sets of targets from the CPIER[51] forecasts for the Cambridgeshire and Peterborough CA. The blue node is the target that CPIER expects to deliver under their central projection which is based on the shorter term (ST) rate returning to longer term (LT) rate assumption. In other words, it assumes that the employment first follows the growth rates closer to higher ONS employment growth before returning to longer term ONS growth rates. The orange and green nodes are the targets based on a longer-term rate (1981-2016 employment growth trend) and a shorter-term rate (2010-2015 employment growth trend) respectively. Of all the projected targets, none is feasible under LEFM and EEFM projections.

However, these are not what CPIER expect the LEP to be by 2036, they are what can be expected to happen under different employment growth and development scenarios.

Figure 3.3.9 Employment projections in Cambridgeshire and Peterborough CA

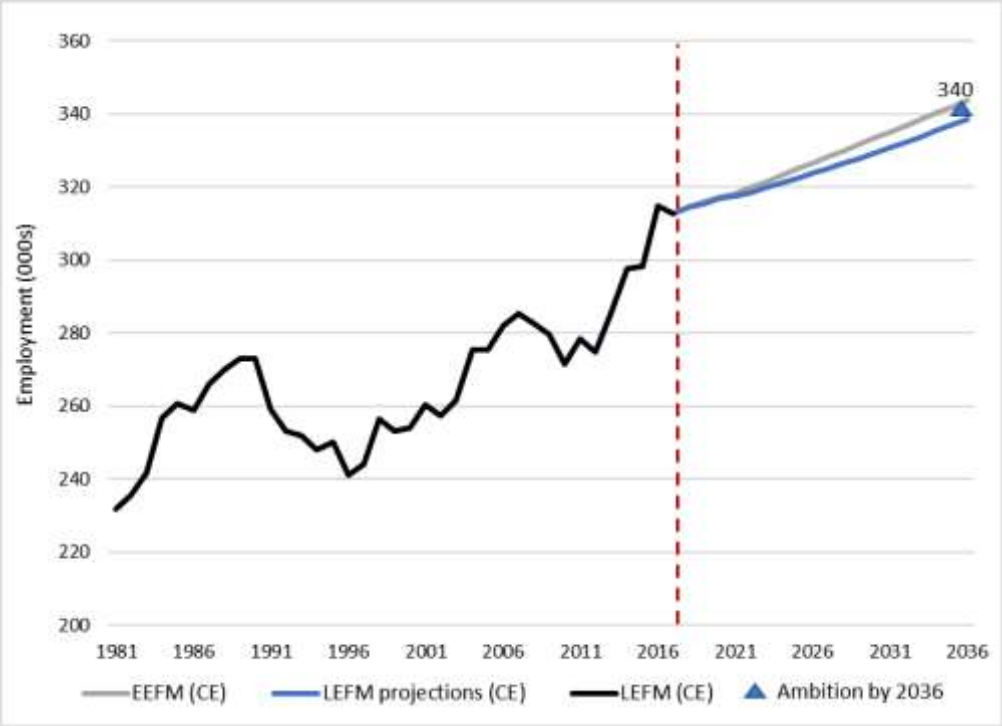


[51] CPIER: Cambridgeshire & Peterborough Independent Economic review. This is the product of Cambridgeshire and Peterborough Independent Commission which was established by Cambridgeshire and Peterborough Combined Authority (CPCA) in 2017.

Bedfordshire

Figure 3.3.10 illustrates the employment projections in Bedfordshire and how they compare to expected future employment from The Local Plan of Central Bedfordshire. The local council expects to provide an additional 24,000-30,000 jobs by 2036, which has been averaged to 27,000 for the purpose of our analysis. The final estimate has been marked on the graph and it lies in between the two projections. This means that the target is feasible. However, it is important to stress that this target has been set out for Central Bedfordshire only, hence the number can be underestimated for Bedfordshire as a whole.

Figure 3.3.10 Employment projections in Bedfordshire

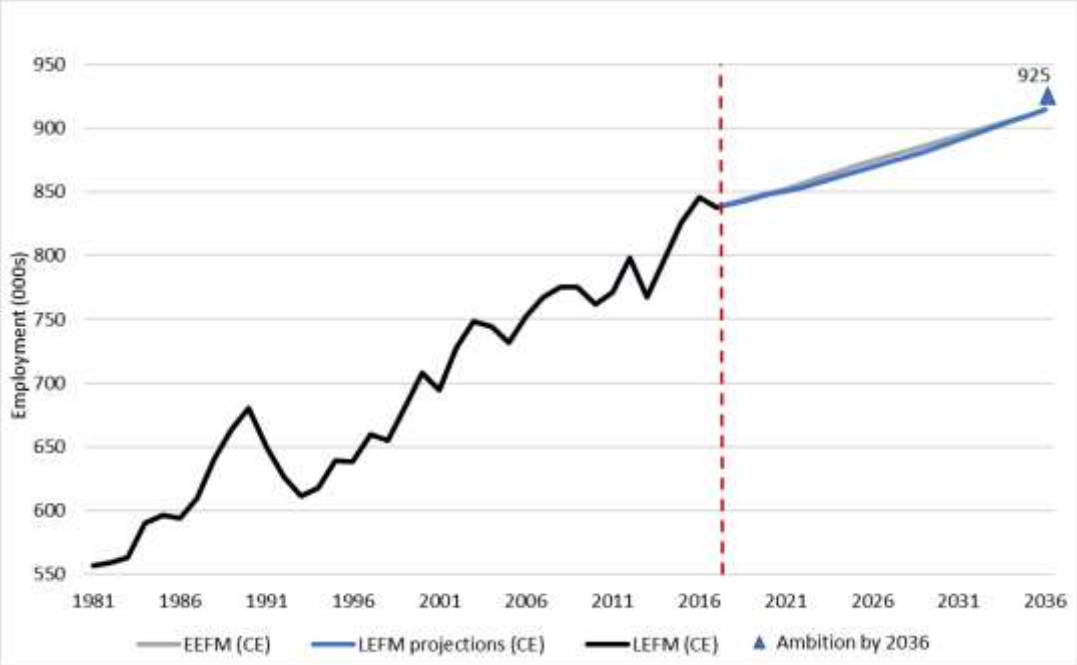


Greater Essex

Figure 3.3.11 shows that, in Essex, employment is projected to increase by almost 77,000 over the next 20 years, whilst the employment projection from 'Growth and Infrastructure Framework (GIF)'[52] by AECOM estimates an additional 79,000 new jobs by 2036. This target is not far from CE's projections; hence we can conclude that Essex is likely to deliver an employment target of 925,000 by the end of the projection period.

[52] Growth and Infrastructure Framework: 2016-2036, commissioned by all of the local authorities in Essex.

Figure 3.3.11 Employment projections in Essex



East of England

Similar to the population projection analysis, we use the 'combined' employment targets from the LEP areas to form an ambition for the East of England. We are expecting the East of England to deliver around 600,000 new jobs by 2036, which is equivalent to employment of almost 4 million in 2036. This ambition is above the two sets of projections, yet, the gap is not very substantial (see Figure 3.3.12).

Both forecasts project East of England employment to reach around 3.4 million in 2036, at an annual growth rate of 1% over the projection period. Historically, the employment has been growing at similar rates (1.01% per annum from 1997-2017). Therefore, the models assume the past trend continues in this region.

Alongside this, Figure 3.3.13 compares the projections from CE to the employment projections from the Office for Budget Responsibility (OBR) at a UK level. In order to produce sensible comparisons, all data are expressed in terms of indices ($2017 = 100$). This allows us to compare the future employment growth pattern in the East of England to the national employment trend over the next 20 years. The projections show that employment growth at both the UK and the East of England levels will stay at similar levels before the former starts to grow at slower rate in 2029. The EEFM projects higher employment for the entire period and it projects growth at similar rates to the LEFM employment projection after 2026.

Figure 3.3.12 Employment projections in East of England

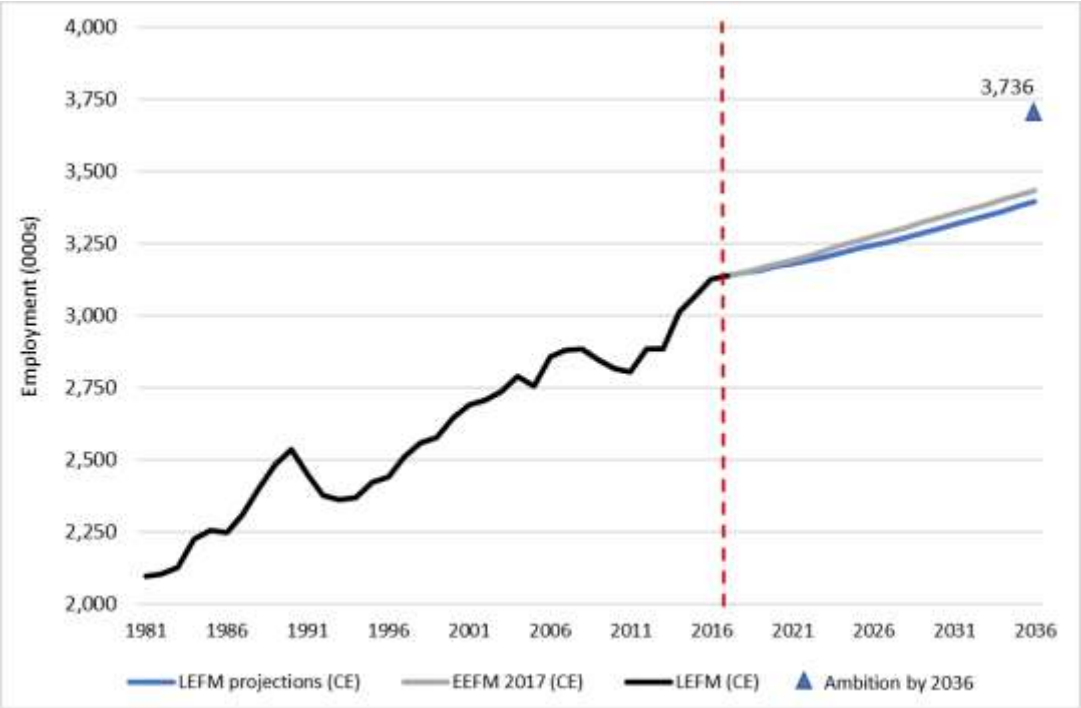
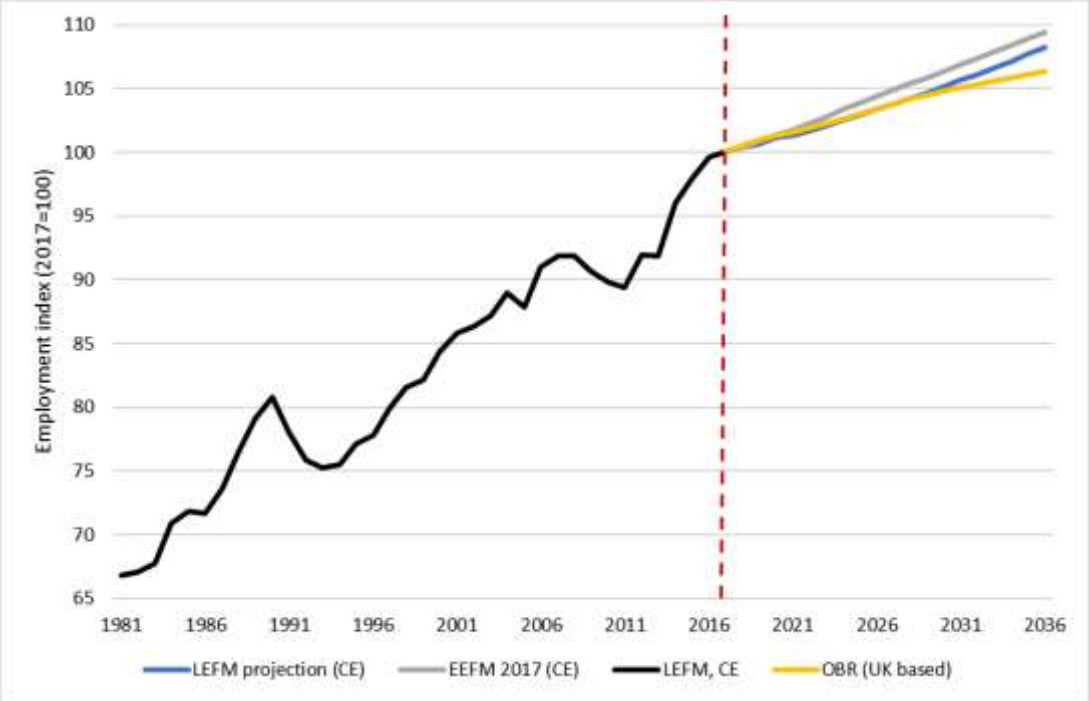


Figure 3.3.13 Employment projection for East of England (2017 = 100)



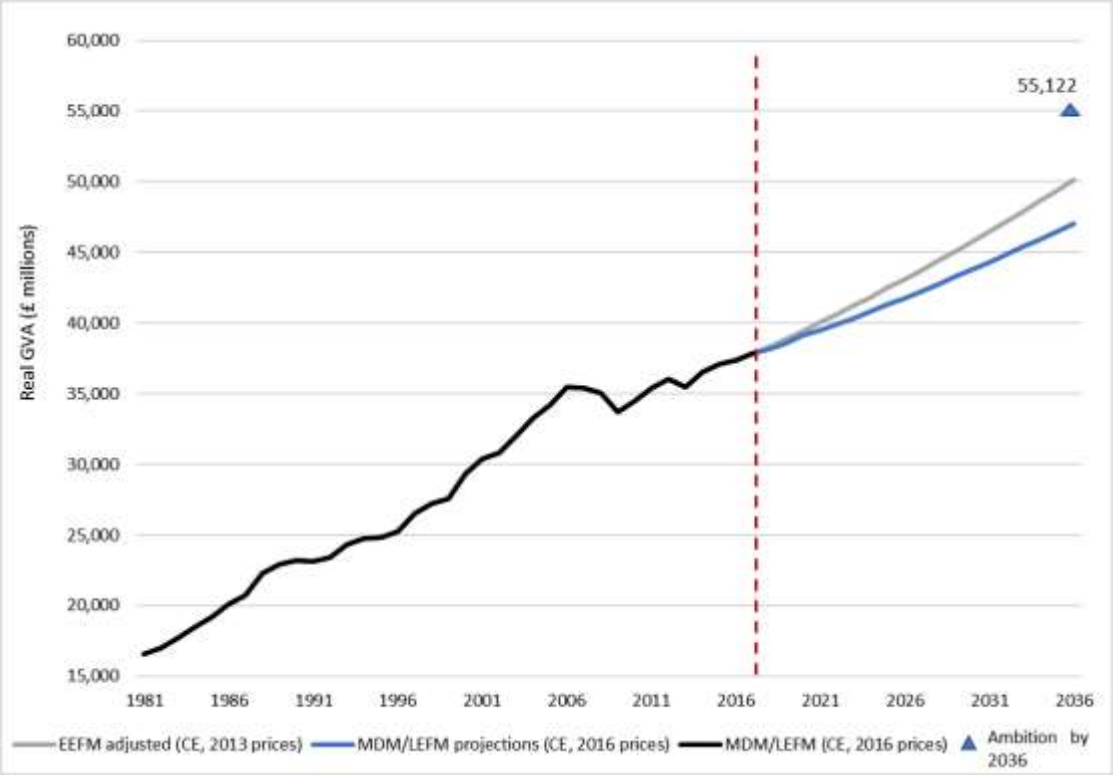
GVA projections

The real GVA data in LEFM and EEFM (2017), as explained in the Methodology section, are based on different price years. The former uses 2016 prices which is consistent with the recent ONS publications, while the latter uses 2013 prices. Therefore, to ensure sensible comparisons, the EEFM projection is scaled to the LEFM using the scaling factor from the latest historical year (2017) so that the projections have the same starting point.

New Anglia LEP

New Anglia LEP expects its GVA to grow at a rate of 2% per annum to 2036, which is equivalent to just over £55bn GVA at the end of the projection period. Figure 3.3.14 shows that the higher GVA projection scenario from EEFM predicts approximately £5bn less GVA compared to the target, and around £8bn less when compared to the LEFM projection.

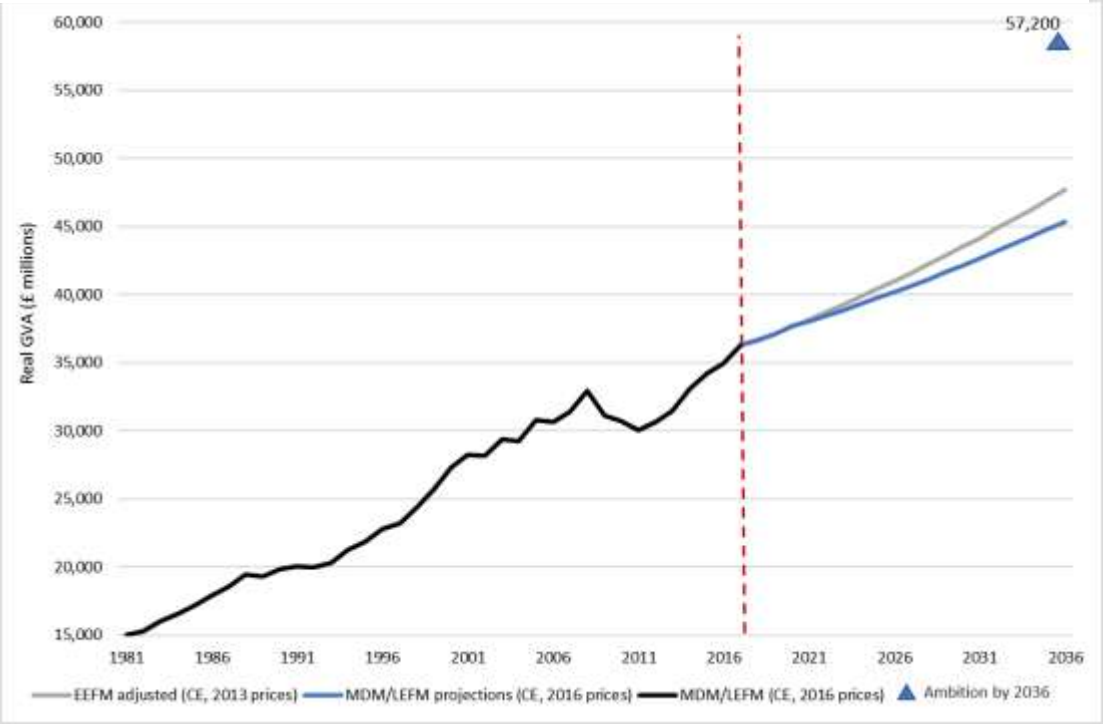
Figure 3.3.14 GVA projections in New Anglia LEP



Hertfordshire LEP

Figure 3.3.15 shows larger gaps between the GVA projections and the planned target for Hertfordshire LEP. The LEP gives a very optimistic plan of doubling the size of its GVA by 2050, which is estimated to be £57.2bn GVA in 2036 – this is around 20% to 30% higher than the two projections. This reflects the need of the local government to providing more stimulus to the local economy to accelerate its economic growth.

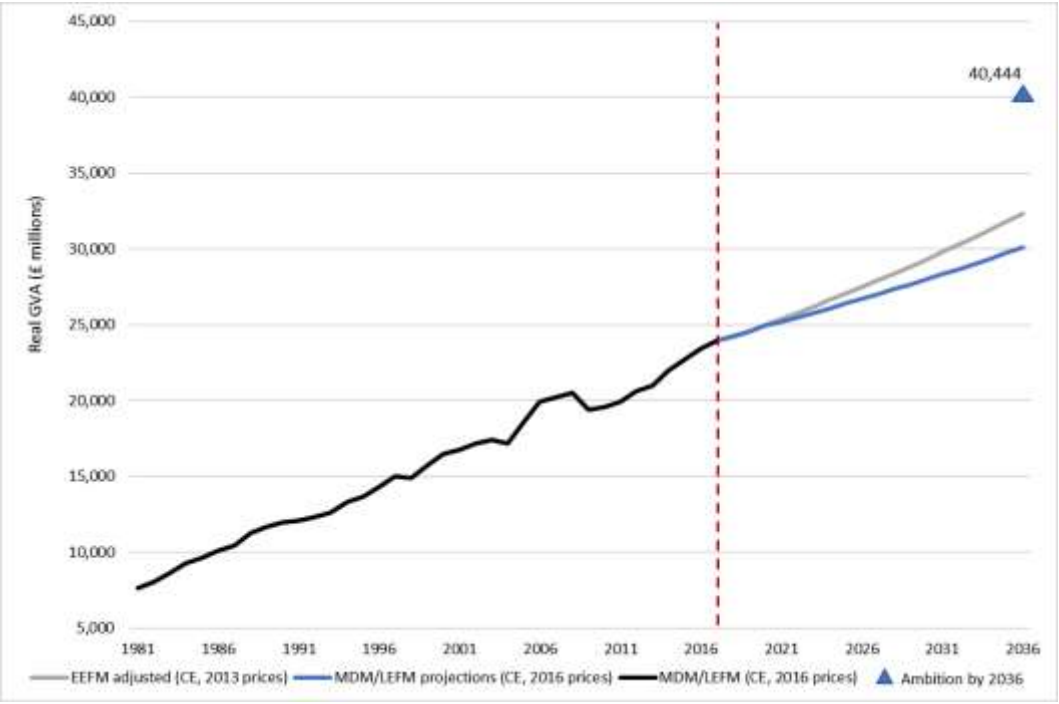
Figure 3.3.15 GVA projections in Hertfordshire LEP



Cambridgeshire and Peterborough CA

Figure 3.3.16 shows the projections of GVA in Cambridgeshire and Peterborough CA. The EEFM forecasts a faster growth of GVA compared to the LEFM but falls short of meeting the target set by the CPCA. The CA committed to double the economy over 25 years, which requires an annual growth rate of 2.8% and that is translated to just over £40bn GVA by 2036. Historically, the local economy has grown at a rate of 2.5% (1998-2017), hence the target can only be achieved if the area goes beyond what it did before. The Cambridgeshire and Peterborough Independent Economic Commission stated that the target is realistic and will be achieved partly by attracting knowledge-intensive businesses.

Figure 3.3.16 GVA projections in Cambridgeshire and Peterborough CA

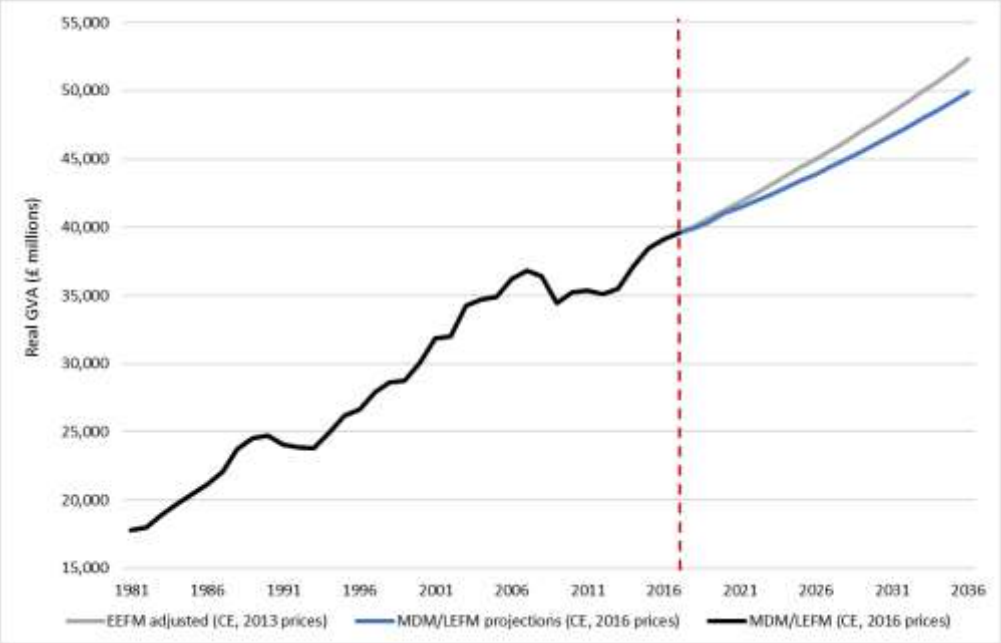


The following two graphs show the GVA projections in Essex and Bedfordshire without presenting their targets, as they are part of LEPs that include areas outside the East of England and do not have separate stated growth ambitions. As a result, we will only comment briefly on the two sets of projections for each area and compare them to the historical trend.

Greater Essex

Figure 3.3.17 shows that the EEFM model projects a faster growth rate of GVA in 2017-2036 for Essex compared to the LEFM projections, 1.5% and 1.2% per annum respectively. These are below the historical annual growth rates, which averaged at 2.3% over the period 1981-2017.

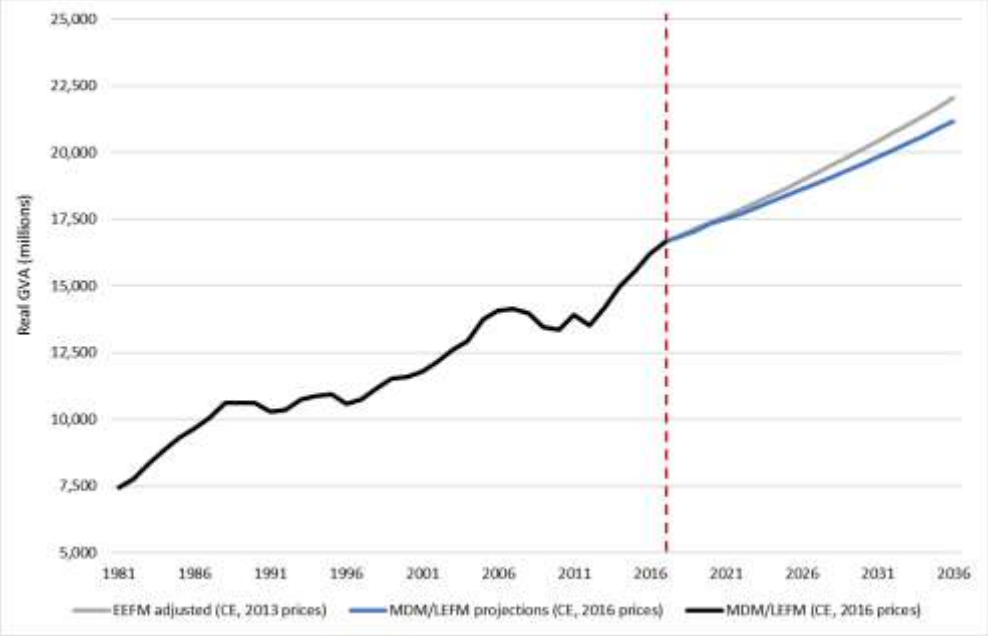
Figure 3.3.17 GVA projections in Essex



Bedfordshire

Bedfordshire has almost the same economic profile as Essex, with GVA annual growth rates over the projection period being at 1.5% and 1.3%, forecasted by the EEFM and the LEFM respectively (Figure 3.3.18). These represent a slowdown from previous GVA growth rates, which averaged at about 2.3% in the periods 1981-2017.

Figure 3.3.18 GVA projection in Bedfordshire



East of England

Since Bedfordshire and Essex do not have stated GVA targets in their own right, we have used EEFM projections as estimates of their growth ambitions. We have combined these forecasts with GVA targets for New Anglia LEP, Hertfordshire LEP and Cambridgeshire and Peterborough CA in order to obtain an overall growth ambition for the East of England. Given the fact that the aims of the latter three authorities exceeded the model projections, it is likely that this might be an underestimate of the true ambition for the region.

Figure 3.3.19 shows that the combined ambition for the East of England is to achieve a GVA figure of about £223.8bn by 2036, higher than the forecasts of both the LEFM (£194bn) and the EEFM (£205bn). Compared to the GVA projections of the 2017 Volterra report, the growth ambition sits between the central and the high-growth scenario forecasts (£200bn and £240bn respectively).

In order to better grasp the differences in overall growth, Figure 3.3.20 illustrates ambitions and forecasts for the East of England economy as an index, with 2017 as the base year. This implies that the 2017 value is set to 100, and future or past values indicate the percentage difference with 2017 (e.g. a value of 110 in 2020 would imply a 10% growth since 2017).

Apart from the GVA growth figures implied by the LEFM and EEFM projections and the combined ambitions, Figure 3.3.20 includes a projection based on the Office for Budget Responsibility (OBR) forecasts. The OBR publishes projections of the GDP growth rate for the UK up to 2067-68 in 10-year intervals. Due to lack of official forecasts at the regional level, we have used the OBR rates (under the baseline scenario) for the national economy to estimate future growth for the East of England if it achieves the projected national growth rate.[53]

Under the baseline OBR forecast, the GDP growth rate will fluctuate 1.2% and 1.8% in 2018-20 and will remain constant at 1.6% in 2021-2017, accelerating at 2.2% afterwards. This implies an average annual growth rate of 1.8% and a cumulative growth rate of 41% in 2017-36. These are higher than the projected growth from both the LEFM (1.2% average annual growth rate; 25.5% cumulative) and EEFM (1.5% annual growth rate; 32.6% cumulative) over the same time period.

Notably, the GVA targets set by the LEPs and CA in the East of England indicate that their ambition is to grow faster than the country average (and hence also than the model forecasts). The targeted GVA figure of £223.8 in 2036 is 45.1% higher than the 2017 value, implying that the regional economy would have to achieve an average annual growth rate of about 1.98% if the target is to be met. Hence, the East of England as a whole would have to perform better than the forecasted economic trends indicate in order to achieve the combined growth ambition of the constituent LEPs and CA.

[53] Note that the OBR projections refer to GDP growth, which we use as a proxy for GVA.

Figure 3.3.19 GVA projections in the East of England

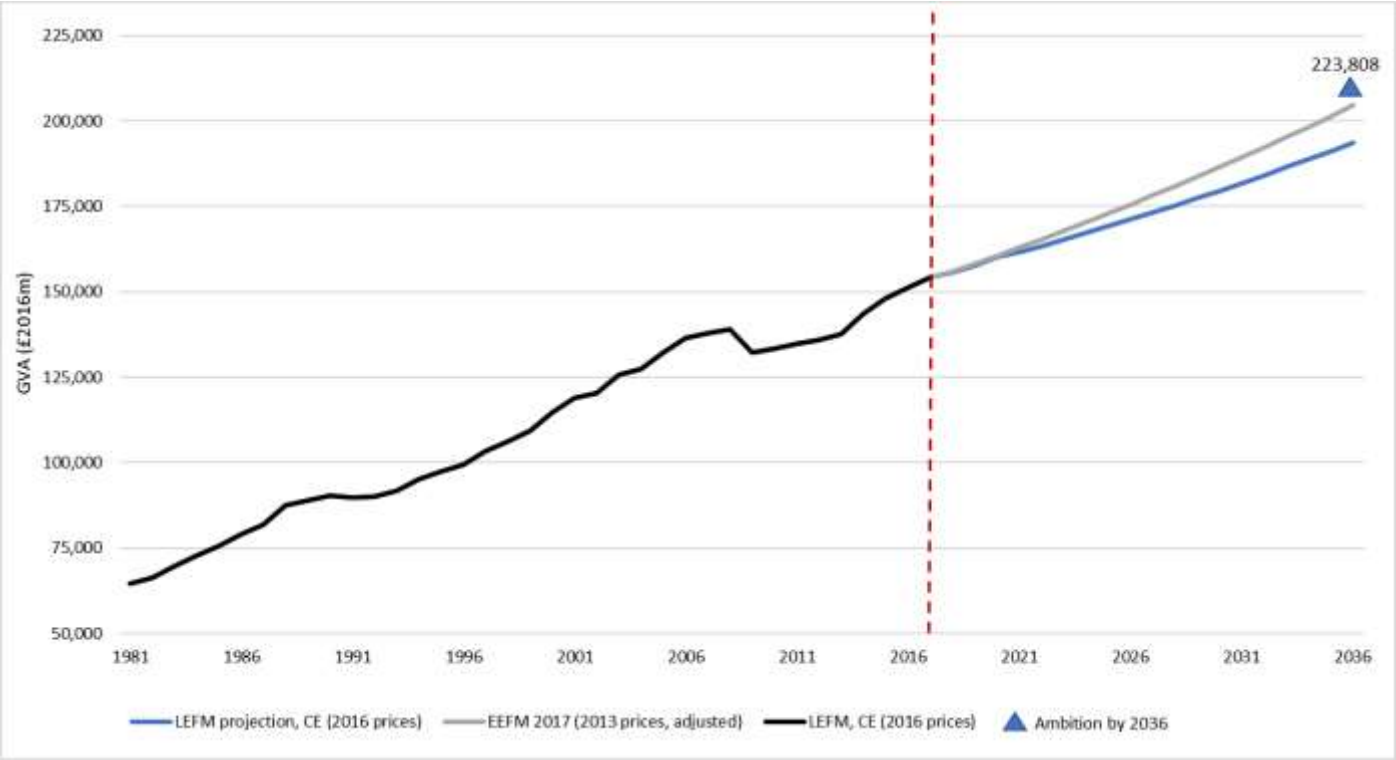
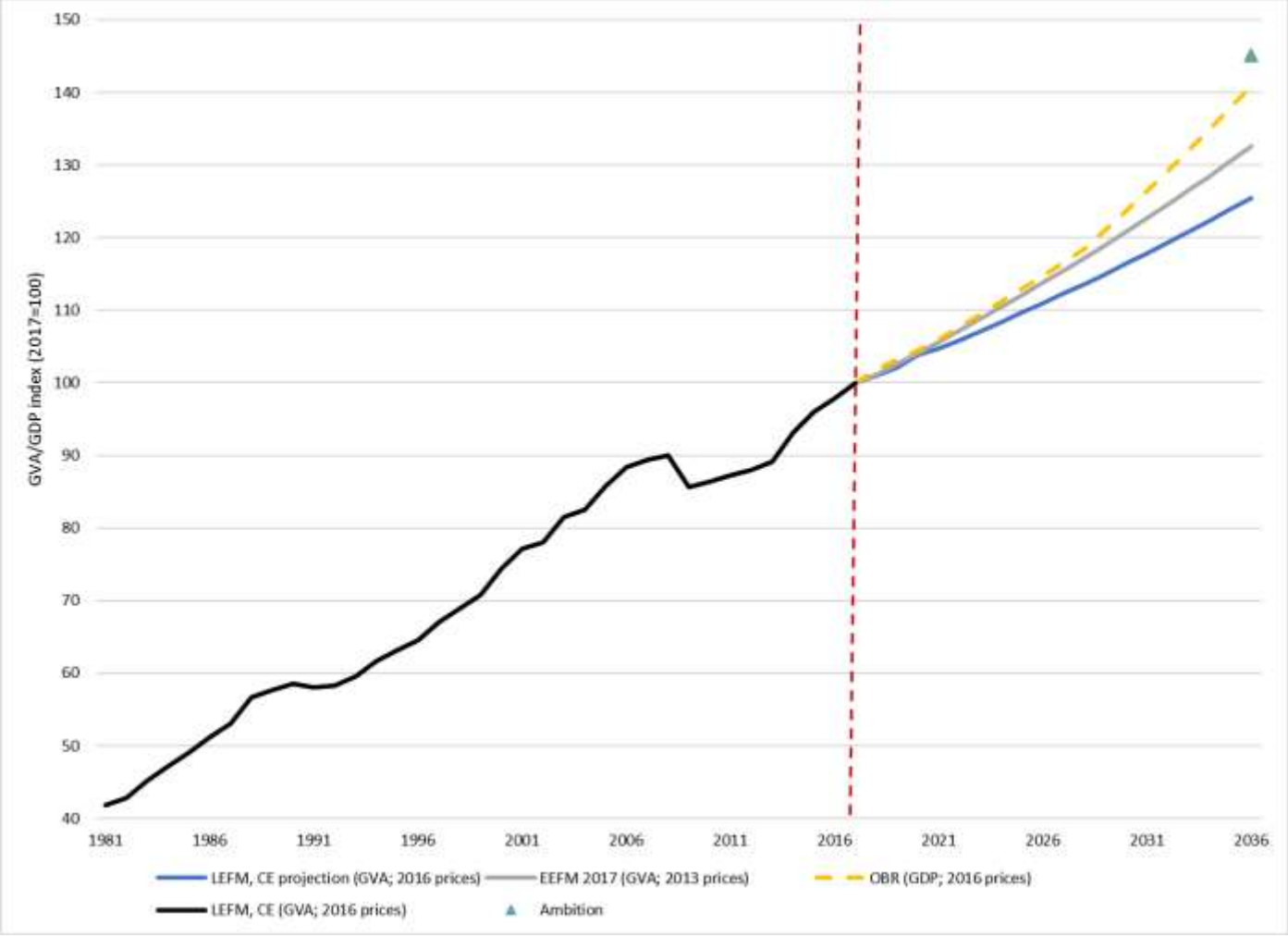


Figure 3.3.20 Projected GVA growth in the East of England over the next 20 years



Summary

The component LEPs and CA and other authorities within the East of England do not individually lack for ambition. Authorities within the region have identified several ambitious priorities for development over the next few decades. While several of the targets and objectives of the different local authorities overlap, there is no unifying overall ambition for the region, as seen in the 'Northern Powerhouse' for the North of England and the 'Engine' for the Midlands.

Critically, all authorities aim to grow as centres of economic activity in their own right, rather than as satellites of Greater London. There is also a consensus across all local areas that boosting growth in knowledge-intensive sectors is essential, but the needs of local populations across all skills levels must be taken into account as well. Furthermore, it is noted that this must be combined with measures to protect the valuable environmental and rural assets that the region has in abundance.

Quantitative measures regarding the ambitions of the local development bodies within the East of England region are provided in the strategic documents of the Local Enterprise Partnerships and other local governing bodies. These reveal that the growth targets for the next 20 years are to surpass the forecasts of both the East of England Forecasting Model (EEFM) and the Local Economy Forecasting Model (LEFM), as well as the national growth rate predicted by the OBR.

Whilst the ambitions of the LEPs and CA do not seem overly unrealistic, they do imply an acceleration of the regional economy relative to model forecasts. Better regional coordination and a wider spatial and strategic plan would be essential to overcoming the obstacles holding back the East of England economy and achieving the combined growth target. Even though incentives may exist to act in (relative) isolation and compete for resources and funding, the areas constituting the East of England share similar ambitions, face similar challenges and possess complementary assets, making collaboration and unity a far more beneficial course of action.

3.4 The spatial dimension

As well as an overall plan for levels of growth, each LEP and CA has outlined in broad terms a series of targeted growth areas within their boundaries, whether this is in the form of a detailed spatial plan or a loose set of development principles. We cover some of the dimensions of these considerations below.

Urban and Rural Areas

Most LEPs identify the need to concentrate growth in and around existing urban settlements where possible. Not only does this provide for the opportunity for greater levels of urbanisation benefits to accrue, but it also reduces area's reliance on motor vehicles and improves the potential for environmental sustainability.

Younger people tend to prefer living in an urban setting, making it significantly easier for businesses located in urban areas to attract them.

According to the Statistical Digest of Rural England (2019)[54], the average age of residents in rural areas is 44.6 years old, while in urban areas it is 39. About 45% of those living in rural areas are aged below 45 years, while the corresponding share in urban areas is almost 60%, with the latter having significantly higher shares of the population in the 20-24, 25-29, 30-34 and 35-39 age groups.

Nevertheless, the ONS Statistical Bulletin on the mid-2018 population estimates[55] finds that most rural parts in England experience net inward internal migration, while on the other hand a lot of urban centres face net outward external migration, with people aged 20-30 years being the exception. Rural areas have advantages as residential communities with lower levels of crime, deprivation and anxiety compared to urban areas, as well as higher levels of life expectancy, happiness and trust in their neighbours.[56]

In England, employment in the Knowledge-Intensive Business Services (KIBS) sector is concentrated mostly in urban centres, with the sector's employment share in urban areas being 17.4% compared to 11.6% in rural areas. Furthermore, urban areas have higher employment shares across all individual sectors that make up KIBS: finance (3.8% compared to 1.1%), information and communication (4.6% compared to 2.7%) and professional, scientific and technical services (9% compared to 7.8%).[57] This is also reflected in the skills distribution: 44.7% of those working in predominantly urban areas have qualifications at NVQ4 or a higher level, while for those working in predominantly rural areas the share is 35.4%.[58]

This is not to say that rural areas do not have a role to play as employment sites. Their natural and geographical assets support specialisations in agri-food and related activities (employment share in agriculture, forestry and fishing of 7.5% compared to 0.2%), tourism (employment share in accommodation and food service activities of 10% compared to 6.9%), as well as large-scale manufacturing (11% compared to 7.5%).[59]

However, the future of rural areas is not solely limited to this: with the increasing use of digital technology, some of the fastest growing sectors in rural areas are professional services and IT, as knowledge workers choose to work from home or from small cost-effective office space, and interact with their clients remotely. For example, in the Greater Norwich outer hinterland[60], the *information & communication* and *professional, scientific & technical activities* sectors were the first and third fastest-growing in the area over the 2009-17 period, with employment growth exceeding 30%.[61]

[54]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/775109/01_Statistical_Digest_of_Rural_England_2019_January_edition.pdf

[55]https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2018

[56] See Statistical digest of rural England 2019 for the relevant data.

[57] Ibid. 2016-17 data.

[58] Ibid. Data for 2015.

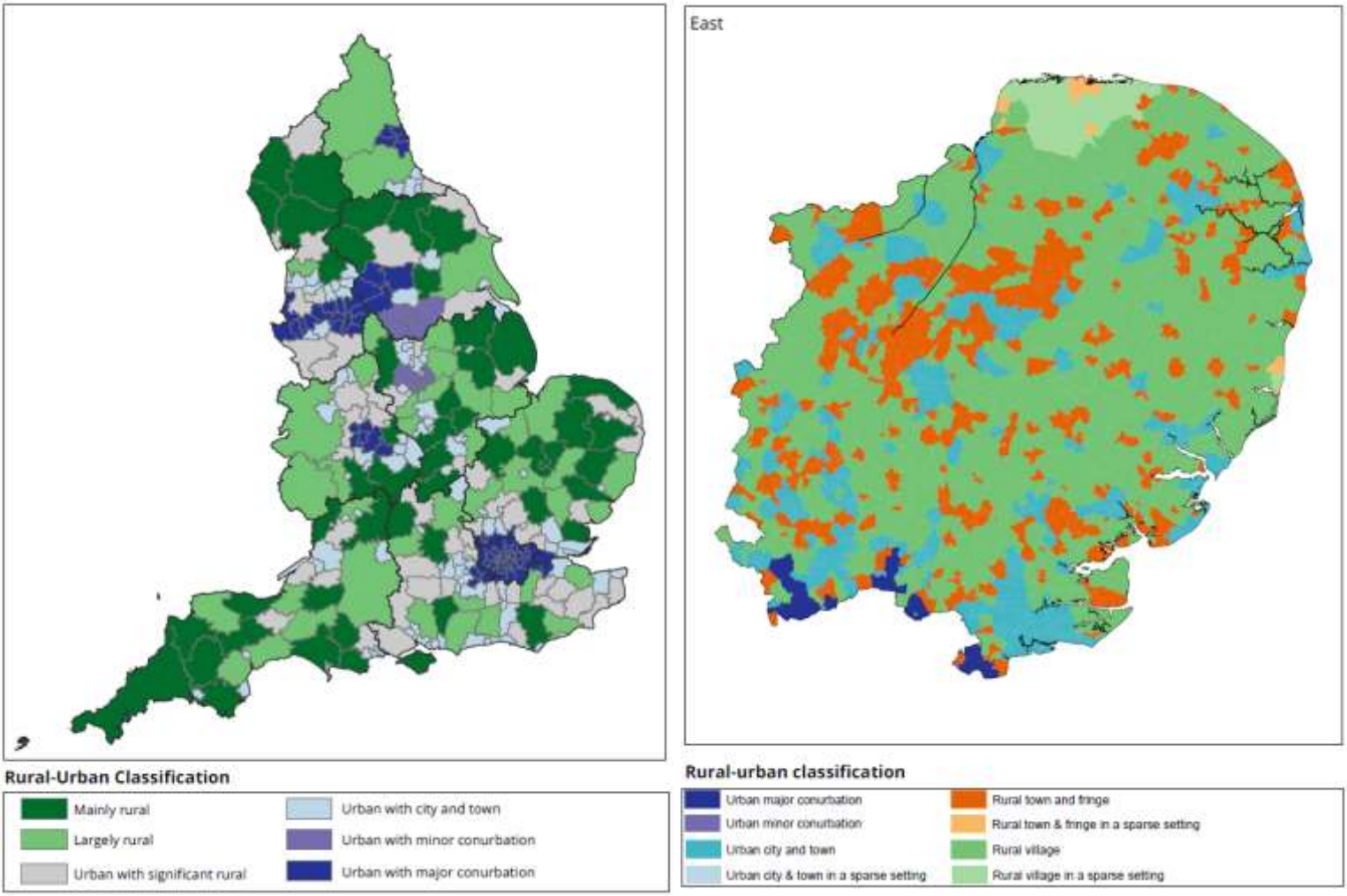
[59] Ibid. 2016-17 data.

[60] Approximated to those areas of Norfolk outside a 10km radius of the city of Norwich.

[61] Nomis data, Cambridge Econometrics calculations.

2011 Census data shows that the East of England ranks third among regions in the UK in share of rural population (28.9%). The following maps by the ONS (Figure 3.4.1) depict the rural characteristics of the region, as well as the most significant urban conurbations:

Figure 3.4.1 ONS Rural-urban classification for England (left) and the East of England (right)



London Commuter Zone

Areas to the south and west of the East of England region unambiguously form part of the London Commuter zone, and a recognition of this fact plays an important role in the spatial strategy of impacted LEPs (SEMLEP, Herts LEP and SELEP). Far from being seen as a challenge or a threat to local industry, most LEPs recognise this to be an opportunity for collaboration and complementarity with Greater London.

Many households with two or more working adults now make their location decision based on the ability to work in different locations. A location from which commuting to London is feasible does not necessarily imply a loss of workers from the local economy; on the contrary, it may encourage households to locate there, in a scenario where one adult commutes to London whilst the other is available for work in the local economy.

Close proximity and travel times to London not only allow for ease of commuting, but also of business collaboration or engagement in supply chains. There are recognised agglomeration benefits experienced by firms

that are proximate enough to major cities to be able to effectively participate in the urban economy from a distance.

Economic Corridors

Brunner (2013)[62] gives the following definition of an economic corridor:

> 'Economic corridors connect economic agents along a defined geography. They provide connection between economic nodes or hubs, usually centered on urban landscapes, in which a large amount of economic resources and actors are concentrated. They link the supply and demand sides of markets.'

Growth corridors utilise key infrastructure assets to connect markets, ideas and people, thus supporting the development of economic clusters while also improving the links between urban agglomerations (which are typically where the clusters are located) and more rural areas. Such corridors can help attract private investment and facilitate knowledge diffusion, communication, trade and competitiveness by decreasing costs and delivery times.[63]

A unique characteristic of the East of England is the number, as well as the importance, of the growth corridors intersecting the region, with the globally significant tech-hub of Cambridge being a focal point for many of them. In many ways, this corridor-based spatial strategy is currently considered to be the best way of allowing the numerous advantages of the Cambridge phenomenon to spill over into neighbouring regions to the mutual benefit of both those regions and Cambridge-based firms and workers. These corridors include:

- The London–Stansted–Cambridge corridor, which has been branded the 'UK Innovation Corridor'[64], as it connects two of the innovation-leading and fastest-growing UK areas in London and Cambridge with a major international airport in Stansted.[65]
- The Cambridge–Milton Keynes–Oxford Arc, which has been attracting increasing attention from stakeholders in recent years, given the global significance of the knowledge assets in the key centres of the corridor.[66] This corridor is placed within the 'Golden Triangle' of Oxford, Cambridge and London. Although the term 'Golden Triangle' was coined to describe the group of world-leading universities in the above cities, it is increasingly being used to 'describe the growth of the technology and life sciences sectors in the cities of Oxford, Cambridge, and Milton Keynes' (Bidwells, 2017).[67]
- The Norwich–Cambridge Technology Corridor, connecting two cities with world–class universities, knowledge–intensive local economies and significant clusters in life sciences, agri–food, technology, IT and energy.

[62] Available here: https://www.adb.org/sites/default/files/publication/100110/reiwp-117-economic-corridor-development.pdf

[63] Sources: https://www.carecprogram.org/?page_id=33 and https://www.brookings.edu/research/economic-corridors/

[64] https://hansard.parliament.uk/Lords/2019-04-30/debates/643E7F10-8527-47DF-B8A9-49862AE16C3C/UKInnovationCorridor

[65] See http://www.lsccgrowthcommission.org.uk/?p=812 and https://innovationcorridor.uk/about.

[66] https://www.nic.org.uk/our-work/growth-arc/

[67] https://www.bidwells.co.uk/faqs/what-is-the-golden-triangle-in-the-uk/

- The A14 corridor, linking the Port of Felixstowe (largest container port in the UK) with Cambridge and the west of the country, supporting trade and the logistics industry.

Coastal Assets

For New Anglia LEP and Greater Essex (SELEP), the East Anglian coastline represents a significant asset that is worth considering in its own right, providing opportunities in tourism, renewable energy, transport and logistics.

The coasts of Suffolk, Norfolk and Essex (the longest coastline in England[68]) are traditional holiday destinations in England with a number of popular seaside resorts such as Great Yarmouth, Lowestoft, Cromer, Hunstanton, Clacton-on-Sea and Southend.

New Anglia has substantial energy generation infrastructure including nuclear power generation at Sizewell, offshore gas assets in the Southern North Sea, close to 1,000 offshore wind farm turbines, and tidal waves generating renewable energy.[69]

In the ports of Felixstowe, Harwich, Tilbury and London Gateway the East of England has some of the most significant trade and logistics assets in the country.

The main economic corridors and assets in the East of England are illustrated in Figure 3.4.2 below.

Shared spatial objectives

Whilst each local area has its own set of circumstances, there are a range of objectives that are shared by all areas of the region. These include:

- improvements of both inter-city and intra-city infrastructure;
- provision of employment land and premises, as well as place-shaping for technology-based businesses and skilled workers;
- maintaining the balance between high levels of housebuilding whilst protecting the natural environment and quality of life of residents;
- the need to provide high-quality employment opportunities for existing and future residents, of all skill levels

These shared spatial objectives are illustrated in Figure 3.4.3 below.

[68] https://www.visiteastofengland.com/see-do/essex

[69] Section 4.3 discusses in more detail the energy assets in the East of England.

A spatial vision for the East of England

Unlike other English regions (such as the West Midlands and the North East), the East of England isn't based around a single conurbation. This presents challenges, but also opportunities. By combining the separate spatial visions outlined by the LEPs and CA, an alternative vision of the region as a network of economic corridors emerges, which provides a different lens through which to envision future growth. Greater Cambridge is the UK's centre of innovation and its knowledge generation is rivalled only by London in this regard. The area specialises in ideas and has a leading position in innovation, design and technology consultancy in Global Value Chains. Whilst the innovation and knowledge intensive activity in the region isn't restricted to Cambridge, it is undoubtedly concentrated around the city. Figure 3.4.2 depicts the economic corridors within the East of England, most of which are centred around Cambridge. There is a big opportunity to more closely link Greater Cambridge to the rest of the region and the UK.

However, the future of the East of England is not restricted solely to these corridors. The region has many other valuable assets, including both high-quality farmland and the East Anglian coastline. These assets offer complementary capabilities, which make up a broad regional offer that is greater than the sum of its parts.

Our vision of the future of the East of England is therefore a network of dynamic knowledge corridors, that make the best possible use of their infrastructural assets by linking the key regional clusters and institutions, connecting with both the significant coastal assets to the East with specialisations in logistics, offshore renewables and tourism, as well as to the London Commuter belt to the south; interspersed with rural oases, which themselves provide a wide range of growing employment opportunities in the tourism and agri-food sectors, as well as hosting a growing tech community in their own right.

Figure 3.4.2 Economic Corridors with high growth potential within the East of England

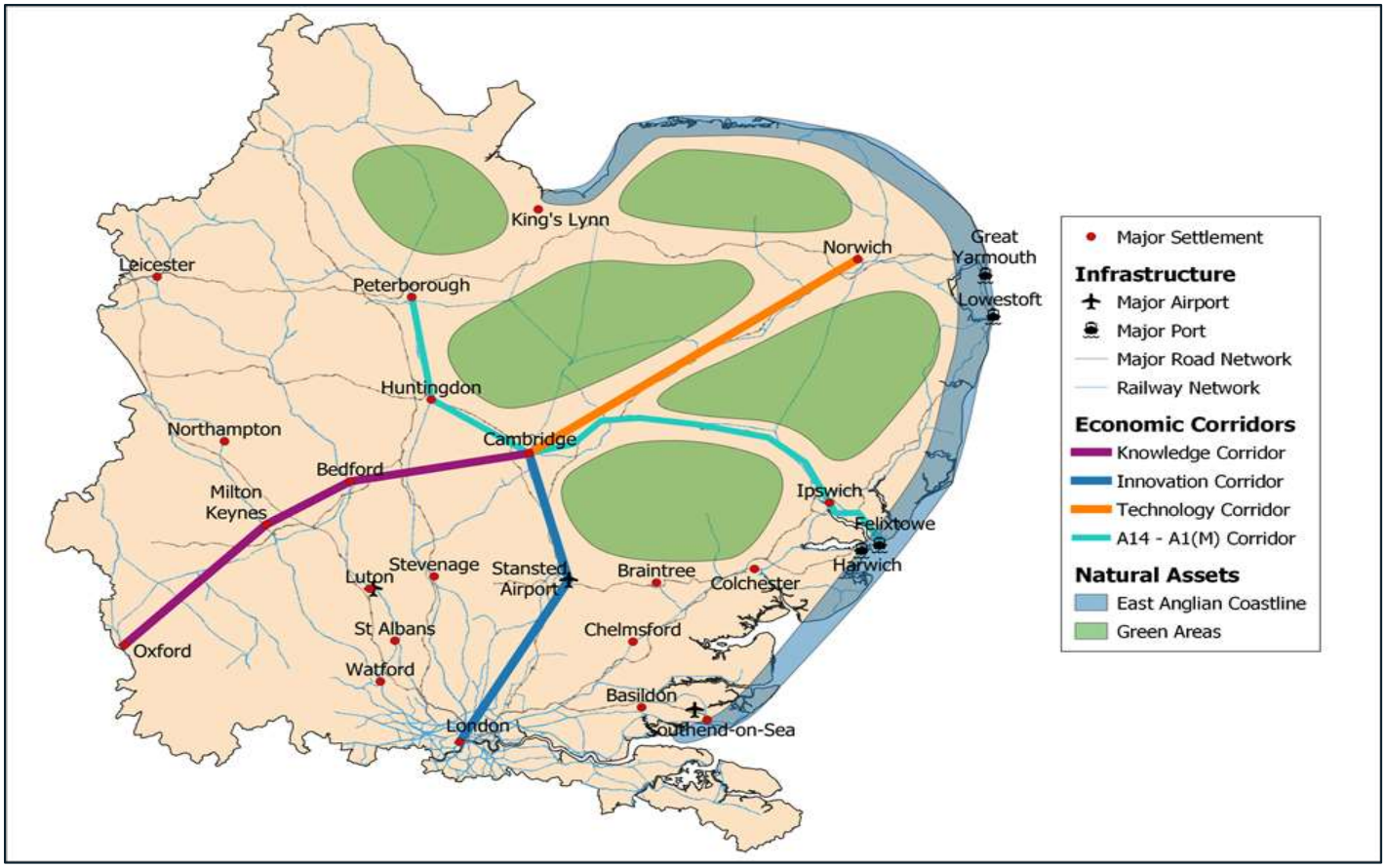
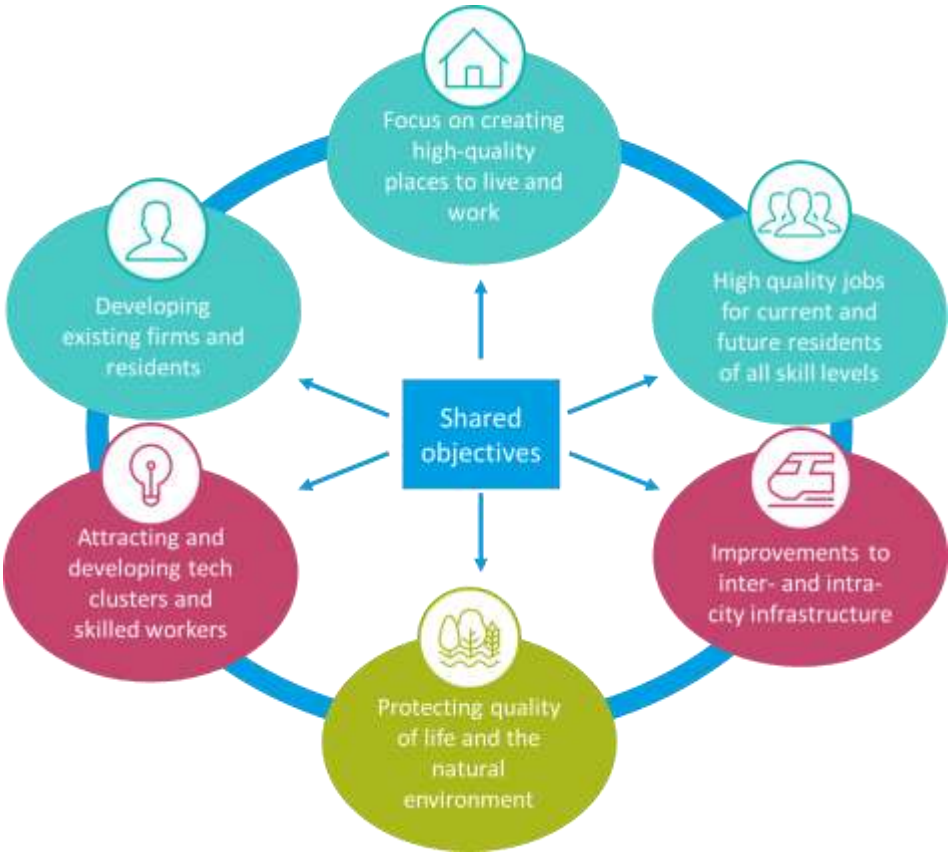


Figure 3.4.3 Shared objectives across the East of England



4 Challenges and Opportunities

4.1 Introduction

Based on the UK Industrial Strategy, Chapter 4 starts by describing the main global and national challenges that need to be tackled in the future and how the East of England is in a prime position to play a major role. Then, it takes a more detailed look into the main assets and sectoral strengths of each area within the East of England and the region as a whole.

4.2 The Grand Challenges and Emerging Sectors

Grand Challenges

The UK Industrial Strategy[70] has set out Four Grand Challenges 'to put the UK at the forefront of the industries of the future, ensuring that the UK takes advantage of major global changes, improving people's lives and the country's productivity'. The Four Grand Challenges, formed based on national and global economic, technological, social and environmental trends, are the following:

1 Artificial Intelligence and Data: to put the UK at the forefront of the AI and data revolution

2 Ageing Society: to harness the power of innovation to help meet the needs of an ageing society

3 Clean Growth: to maximise the advantages for UK industry from the global shift to clean growth through leading in the development, manufacture and use of low carbon technologies, systems and services that cost less than high carbon alternatives

4 Future of Mobility: to become a world leader in shaping the future of mobility, given that profound change in how people, goods and services move around towns, cities and the countryside is on the horizon

The East of England can, and should, take the lead in tackling the Grand Challenges given its exceptional knowledge, geographical and natural assets. More specifically:

- The East of England has a rich history and tradition in computer science and information technology in both academia and business, and is currently one of the most dynamic and innovative technology centres globally spurred primarily by the 'Cambridge Phenomenon'
- The region is home to world-class universities and research institutions in the fields of medicine, pharmaceuticals and biosciences, as well as to some of the most globally important companies in these sectors, thus offering opportunities for collaboration, commercialisation and knowledge exchange
- The East of England coastline is a major hub for offshore wind and nuclear power generation, while the region's decades-long history in the

[70] Department for Business, Energy and Industrial Strategy (2017). Industrial Strategy: building a Britain fit for the future. London, United Kingdom.

oil and gas sectors has endowed it with a developed and experienced supply chain

- The region has several important knowledge and infrastructure assets that can help make contributions in shaping the future of mobility, even though the region does not have a particular specialisation here

Emerging Sectors

Due to the rapid rate of technological progress and shifting global trends and priorities, the products and services we consume will change in both construction and functionality. Hence, the scope of global value chains will evolve radically over the next few decades. This is particularly relevant for the sectors of Smart Devices, Agri-Food, Construction and Professional Services.

The East of England is well-placed to play a major role in driving forward the future of these sectors, given that:

- Several globally and nationally significant technology clusters are thriving in the area, while leading research universities with specialisations in computer science and engineering are also located in the area and are frequently collaborating with the business sector to produce innovative ideas and products
- It has a unique combination of high-quality farmland and R&D focussed on the agri-tech and bioscience sectors, allowing for both cutting edge research and implementation
- The region includes several of the fastest growing housing markets in the UK, which, combined with its proximity to London, expertise in engineering and innovation and specialisation in construction, put it in an excellent position to take the future of the sector forward
- Its diverse mix of local specialisations, knowledge assets, dynamic business environment and technological know-how would be an important asset in shaping the future of professional services

The following section provides more detailed information on the key assets, capabilities and strengths of the East of England that put the region in a prime position to tackle future challenges and take advantage of emerging opportunities.

4.3 Assets and Strengths of the East of England

This section presents the key assets in the East of England that pertain to knowledge and skills, business and innovation, energy resources and geographical characteristics. Furthermore, it provides a sectoral analysis that identifies the relative strengths of each area and the region as a whole.

Knowledge and skills

The evidence linking skills and productivity is well established, but this link can work in different ways. Firstly, a skilled workforce can reflect strength in the demand-side of the economy, as highly-educated people work in sectors that require their qualifications (and so contribute to value-added and productivity performance), but it can also act as a supply-side attractor for businesses (through Foreign Direct Investment, relocation or new business starts).

Whilst a supply of graduate workers is important for knowledge-intensive industries, these workers are often recruited from a national labour pool.

Providing local residents with the right combination of skills required by local industries, often taught in a further education or apprenticeship setting, can have a more direct impact on employment outcomes for resident populations.

Knowledge institutions play a vital role in both generating, attracting and retaining skilled workers within a local area. For example, the success of Cambridge University in providing a constant stream of knowledge workers into the local economy has played a major role in the success of the Cambridge phenomenon. Growing and strengthening existing knowledge institutions across the region is a vital element of any future regional skills strategy.

New Anglia LEP

New Anglia LEP has within its borders several institutions of higher and further education which are supporting the area's growing knowledge intensive sectors. These institutions include the University of East Anglia, the Norwich University of the Arts, the University of Suffolk and New Anglia College Group, consisting of 11 colleges. According to the Complete University Guide, the three universities are ranked 21st, 76th and 129th among universities in the UK.

New Anglia is also focussing on building excellence in STEM disciplines across its education and skills system, which are most relevant for the area's high impact sectors such as energy. Examples of specialist centres that were recently completed with a financial contribution from the LEP include the Ipswich Waterfront Innovation Centre focussing on STEM and ICT sectors; the International Aviation Academy at Norwich, a collaboration with KLM Engineering to provide aircraft services; the Easton and Otley College, a construction training centre with a focus on new technologies; and the first National Skills Academy in the UK for financial services, located in Ipswich.

In 2017 30.9% of the working age population in New Anglia had a qualification at the level of NVQ4 or above. About 7% of school-leavers in Norfolk and Suffolk took up apprenticeships in 2015/16 which is slightly higher than the national average of 6%, according to the 2017 New Anglia Economic Strategy Evidence Report.

The area's higher education spending on R&D is about 2.8 times the national average. However, New Anglia's innovative research production in the main science subjects such as biological sciences, computer science, and engineering lies below the national average, according to Research Excellence Framework (REF) results.[71]

Cambridgeshire and Peterborough CA

The Cambridgeshire and Peterborough CA area has major higher education institutions in the University of Cambridge and Anglia Ruskin University, which play a major role as knowledge centres and sources that benefit knowledge-intensive start-ups and businesses, while also being leading employers in the area. In particular, the University of Cambridge is a leading institution ranked 6th among the world's universities (QS World Ranking, 2019) and renowned for excellent teaching and research, as well as the many highly successful business spinoffs founded by its staff and students.

[71] http://smartspecialisationhub.org/wp-content/uploads/2018/02/NEW-ANGLIA-SSH-PROFILE-Dec-2018.pdf

The current skills and training provision in Cambridgeshire and Peterborough is a microcosm of the UK as a whole, with areas well-served by a highly skilled workforce next to areas dominated by a lower skilled population. The south of the Greater Cambridge area has high skills levels and high wages for the highly productive business sectors located there compared to the northern parts and agricultural areas of the CA. Overall, this area is not producing enough of the right skilled people that its growing businesses need.

About 39.0% of the resident population have qualifications at NVQ4 and above, comparable to the national average of 38.6%, but considerably more than the East of England regional average of 34.7%.

Hertfordshire LEP

While having just a single university, the University of Hertfordshire, the Hertfordshire LEP area is also home to specialist research institutions in the life sciences such as the UK Stem Cell Bank at Potters Bar.

Hertfordshire is investing in skills improvement programmes, especially innovation in high productivity sectors that it wishes to excel in. For example, through the Stevenage Bioscience Catalyst, highly skilled research teams from world-class institutions such as the University of Cambridge and University College London are attracted to Hertfordshire. Hertfordshire has also partnered with Airbus and North Hertfordshire College to set up the STEM skills centre to improve skills in STEM subjects and provision of apprenticeships. The area has also developed an Enterprise Zone which is facilitating the acquiring of sector-specific skills in enviro-tech and agri-tech through practice and research by companies stationed in the Zone (Hertfordshire LEP, 2017).

The proportion of well-qualified residents in the area exceeds the national average. In 2017 the area had over 0.63m employee jobs and over 310,000 (42.7%) of its working age residents had a qualification at NVQ4 level or above, a higher ratio than the UK's 38.6%.

The area has a strong mixed skilled workforce reflecting its location in the Golden Triangle innovation ecosystem linked to nearby clusters in Southern Cambridgeshire, Essex and Bedfordshire. The skills base also reflects the area's sectoral composition of employers in pharmaceuticals, accountancy services, sustainable construction techniques, logistics, advanced engineering and manufacturing and space-related satellite technologies.

South East LEP (Greater Essex)

Essex has several university centres and further education colleges where students acquire skills through courses and research. The universities include the University of Essex, Anglia Ruskin University (which has a med-tech campus in Chelmsford), and Writtle University College, as well as multiple colleges, with many skilling students through traditional courses and apprenticeships. Graduates from these institutions as well as from other universities provide local and national enterprises with the skills they need.

The area also has specialist skills initiatives such as the Knowledge Gateway at the University of Essex, which aims to improve skills available for knowledge-based enterprises operating in science, technology and the creative sectors in the area including advanced manufacturing, life sciences and healthcare, and digital and creative services (Essex Economic Commission, 2017). Another example is the Stansted Airport College, which

is a partnership between Harlow College and the Stansted Airport, offering a range of professional and technical courses in subjects such as aviation, engineering, business, hospitality and events.

Around 33% of the working age population in 2017 were educated to at least NVQ 4 level, therefore in relative terms Greater Essex is more than five percentage points behind Great Britain overall by qualification level.[72,73,74] However, the area's GCSE results in 2016 were better than England overall by about four percentage points. People in Essex are more likely to work at a higher level of occupation relative to their highest qualification compared to the UK overall.

SEMLEP (Bedfordshire)

Bedfordshire has two main higher education institutions, the University of Bedfordshire and Cranfield University. The latter is a postgraduate research university with strengths in engineering (especially aeronautical, mechanical and manufacturing), science and technology. Other research institutions specialising in advanced manufacturing and engineering include the British Hydromechanics Research Group in Central Bedfordshire, the EPSRC Centre for Doctoral Training in Sustainable Materials and Manufacturing which is co-run by Cranfield University and two other UK universities, and the Space Research Centre also at Cranfield University in Central Bedfordshire. Bedfordshire's high-tech skills are also evident in the thriving collaboration happening between its universities science parks and leading businesses such as BAE Systems and other leading universities.

Among the working age population, 35% have a qualification at NVQ4 or above level, which is over three percentage points below the UK rate.

[72] https://www.nomisweb.co.uk/reports/lmp/la/1941962833/report.aspx

[73] https://www.nomisweb.co.uk/reports/lmp/la/1946157203/report.aspx

[74] https://www.nomisweb.co.uk/reports/lmp/la/1946157204/report.aspx

East of England knowledge and skills

Overall, the East of England is home to nine research universities, with some of them having campuses in different locations across the region. The universities, with the world-leading University of Cambridge standing out, are some of its greatest assets, contributing directly to the regional economy by attracting both domestic and international students as well as through the dissemination and commercialisation of research and innovation. Many of the university students stay on to work or start businesses in the region after graduation thereby helping to meet the region's skills needs. However, there are significant regional disparities in the share of the resident population with higher level qualifications, indicating that some of the areas within the East of England have difficulties in attracting or retaining higher-skilled workers. As a result, the region as a whole lags behind the national average: as of 2017, 34.7% of the resident population aged 16-64 had a qualification at NVQ4 level or above, while the UK rate was 38.4%.

Apart from the universities, there are also multiple regional colleges, as well as science parks and research institutions. These serve as sources and centres of knowledge and often collaborate with each other and form research partnerships. Moreover, they frequently engage in commercialising this knowledge either directly or in collaboration with both domestic and international businesses.

Figure 4.3.1 and Table 4.3.1 below summarise the knowledge and skills assets in the East of England.

Figure 4.3.1: Share of employees with NVQ4+ qualifications by LAD and locations of main universities in the East of England

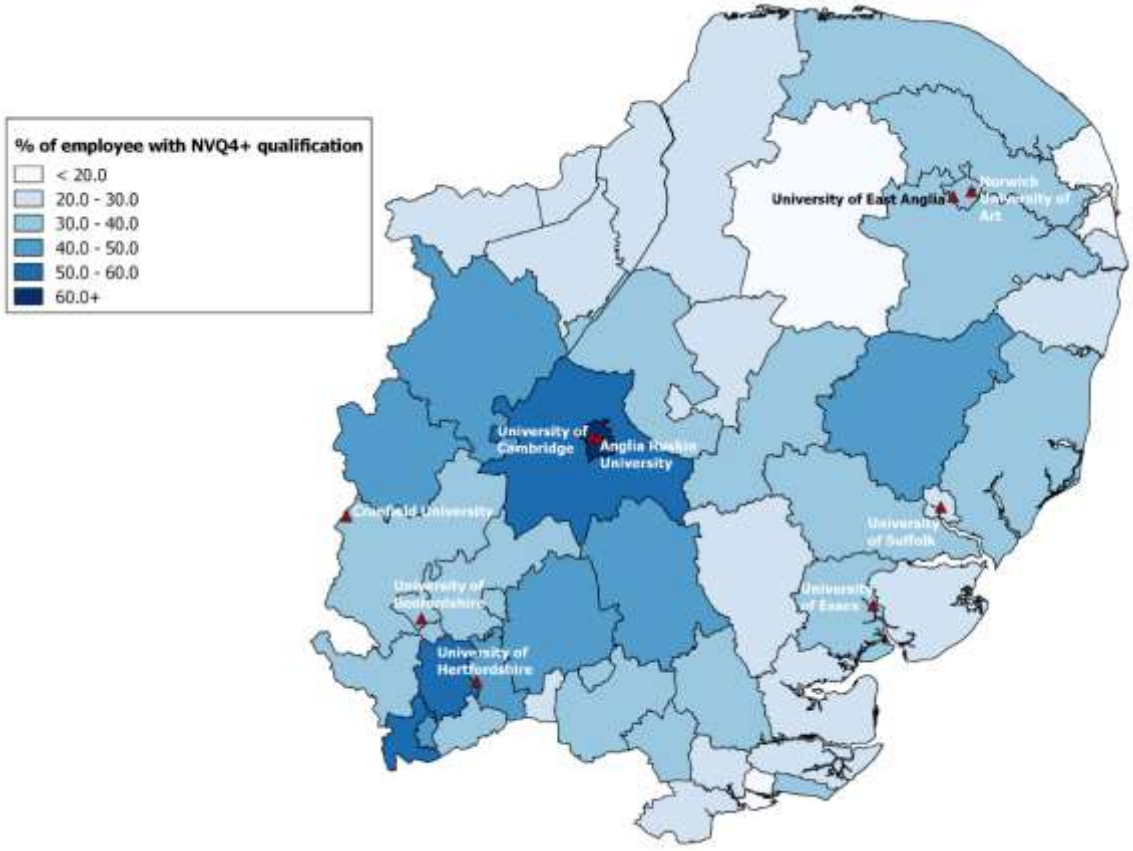


Table 4.3.1 Summary of knowledge institutions and skills across the East of England

People and skills	New Anglia LEP	Cambridge and Peterborough CA	Hertfordshire LEP	South East LEP (Essex)	South East Midlands LEP (Bedfordshire)
Population Aged 16-64 (2017)	- 0.98m - 59.1%	- 0.85m - 62.7%	- 1.18m - 62.7%	- 1.82m - 61.1%	- 0.67m - 63%
16-64 year-olds with NVQ4+ qualification	- 30.9%	- 39%	- 42.8%	- 33%	- 35%
Universities	- University of Suffolk - University of East Anglia - Norwich University of the Arts	- University of Cambridge - Anglia Ruskin University	- University of Hertfordshire	- University of Essex - Anglia Ruskin University (campus in Chelmsford)	- University of Bedfordshire - Cranfield University

Business and innovation

Innovation is the process of extracting economic or social value from new information, ideas or insight. Innovation can come in many forms, including both product and process innovation. Although often driven by new technologies, it can also simply derive from improved methods of internal business organisation or market understanding which drive productivity. There is a causal link from innovation to business dynamism and growth, particularly in the creation of start-ups.

The importance of ideas and innovation to a regional economy can depend upon whether a region's firms are innovation leaders (for example, undertaking research and development and/or producing patents) or innovation followers (for example, adopting new methods to improve business efficiency).

A lack of research and development (R&D) or innovation capacity in a region (such as R&D-specific firms or limited non-university public sector R&D capacity) can prevent innovation diffusion and 'domestication' within a region. In addition, this could also make an economy less attractive to highly skilled employees who are looking to work in higher productivity sectors.

Knowledge institutions have a significant role to play here, both in the generation of ideas through university-led R&D, but also in that the ability of an area to generate and commercialise new ideas is closely linked to the knowledge and skill level of its workforce.

There is also a symbiotic relationship between innovation and business dynamism, with regions with the most developed business-support systems best placed to successfully commercialise any new knowledge that is generated.

New Anglia LEP

The economy of New Anglia LEP has thriving businesses of various sizes spanning several business sectors. ONS data shows that in 2018 there were 62,750 business enterprises in New Anglia. Over 88% of these businesses had nine or fewer employees while 9.7% had between 10-49 employees. In comparison, the East of England had 236,895 businesses of which 8.4% had between 10-49 employees.[75] 5,710 new businesses and 43,600 more jobs were created over 2014-2017, according to the 2017 Norfolk and Suffolk Economic Strategy Report.

Some of the notable companies with a presence in the LEP include BT, Huawei, Ericsson, Aviva, and Lotus. Norwich is among the largest general insurance centres in the UK and hosts notable financial services companies such as Aviva, AXA and Marsh.

New Anglia also has several Enterprise Zones and business parks where targeted resources and policies, such as reduced business rates over a specified timeframe, simplified planning permission, and access to superfast broadband, are implemented to support business growth.[76]

Average business enterprise spending on R&D in New Anglia was about 1.14 times the national average, according to ONS data from 2015. During 2010-2012 New Anglia's R&D spend as a percentage of GVA was 1.9% compared to 1.2% by the UK overall. The area also saw a dramatic 50% increase in

[75] https://www.nomisweb.co.uk/reports/lmp/lep/1925185555/report.aspx#tabidbr

[76] https://newanglia.co.uk/enterprise-zones/

science and R&D employment in the decade after 2007, surpassing the UK rate of 19% over the same period. [77]

There is collaboration on R&D and commercialising innovations between universities and science/research parks in the area such as Norwich Research Park and Adastral Park (home to BT's Global R&D HQ), Huawei, Cisco, Ericsson and Tech Mahindra.

The area's agri-food sector has successfully been offered grants from Innovate UK at amounts nearly 1.4 times the national average, highlighting this sector's importance to the area.[78]

Cambridgeshire and Peterborough CA

The Cambridgeshire and Peterborough CA area has high rates of globally competitive businesses and start-ups which are at the forefront of the new industrial revolution. According to the CA, the area has '*the best performing economy in the country outside London, contributing £5bn a year to UK PLC. More than 25 of the world's largest corporations are based in Cambridge and there are over 4,500 knowledge intensive companies located within our area'.* [79] Some of these businesses operate at the cutting edge in sectors such as life sciences, advanced manufacturing and engineering, AI and computing. These businesses are of strategic importance to Cambridgeshire and Peterborough and have a net positive impact on the UK economy. In 2018 there were 35,220 businesses in the CA area with 88.8% of these having a maximum of 10 employees, while 8.9% of the businesses had 10-49 employees.[80]

There is a thriving business networking culture in the area which also has strong links to contacts from outside this area. These networks facilitate the diffusion of know-how through the business community and promote and facilitate investment through increased availability of options to do business and access finance for new business ventures. As of 2018 there were more than 60 networks in Cambridge, with Cambridge Network and One Nucleus being the oldest networks and having a membership of over 2000 between them, including multi-national companies (Cambridgeshire and Peterborough IER, 2018, p. 60).[81]

For Cambridge in particular, this networking can be seen through the presence of successful angel investors such as Cambridge Angels and Cambridge Capital Group as well as the thriving local media which reports regularly on business matters and has regular business events such as annual awards dinners. Among these leading media outlets are Cambridge News which has a business section, Business Weekly which covers business-to-business issues, and the more recent Cambridge Independent which focusses on science and technology.[82]

[77] https://newanglia.co.uk/wp-content/uploads/2017/12/2017-12-05-FINAL-Economic-Evidence-Report-single-pages-HighRes.pdf

[78] http://smartspecialisationhub.org/wp-content/uploads/2018/02/NEW-ANGLIA-SSH-PROFILE-Dec-2018.pdf

[79] http://cambridgeshirepeterborough-ca.gov.uk/business-board

[80] https://www.nomisweb.co.uk/reports/lmp/comb/1853882376/report.aspx#tabidbr

[81] Page 60: http://www.cpier.org.uk/media/1671/cpier-report-151118-download.pdf

[82] http://www.cpier.org.uk/media/1671/cpier-report-151118-download.pdf

The CA's two main cities are very innovative when compared to other UK cities, with Cambridge ranking first and Peterborough 13th among UK cities for the number of patent applications per 100,000 people.[83] The southern part of the CA (Cambridge and South Cambridgeshire) is the major hub of innovation activity with significance at the global scale, where most of the R&D is carried out at the University of Cambridge and several science parks where many innovative start-ups and businesses are based.

An important asset contributing to the innovation leadership of the area is its capacity to attract domestic and international skilled workers, innovators and entrepreneurs to work in its research and innovation-generating sectors. Businesses and innovation creation across the CA also benefit from the area's location and links to leading science clusters and corridors such as the Cambridge-Milton Keynes-Oxford Arc, the Golden Triangle (Oxford–Cambridge–London), the Norwich–Cambridge Technology Corridor, and the UK Innovation Corridor/London–Stansted–Cambridge Consortium.

Hertfordshire LEP

The business environment in Hertfordshire is conducive to and benefits from the area's location in the Golden Triangle linking London, Oxford and Cambridge, which allows businesses access to the skilled workforce needed for the area's high-value businesses. Some high-profile companies with connections to Hertfordshire are GlaxoSmithKline (GSK), Airbus, Ocado, MBDA, Johnson Matthey, and Vinci. Hertfordshire county had over 61,000 enterprises in 2018, with just under 91% of these small in size and employing no more than 9 people each and about 7.5% employing between ten and 49 people.[84]

The county is linked economically with surrounding areas such as Essex and South Cambridgeshire to extract economic value from clusters specialising in life sciences, agri-tech, and advanced engineering. It is home to over 200 firms in the life sciences sector which are underpinned by the area's strategic location and strong links to life sciences clusters in Cambridge and biosciences in London, especially within universities.[85]

The presence of many knowledge-intensive businesses and operations in this LEP area as well as the area's strong links to surrounding tech and science clusters has resulted in Hertfordshire being an innovation-generating centre. In 2015, analysis by the Department of Business, Innovation and Skills showed that, out of 39 LEPs Hertfordshire ranked 2nd for business spending on R&D, 1st in bioscience and 2nd in space programmes, and 2nd overall for proportion of enterprises undertaking product or process innovation.[86]

South East LEP (Greater Essex)

Greater Essex is the eighth largest local economy outside of London. It provides several advantages for businesses, including the area's proximity to the London-Stansted-Cambridge corridor, lower employment and property costs compared to the rest of the South East, access to UK markets via the road and rail infrastructure and to international markets via air and sea. The presence of major seaports (Harwich, London Gateway, Tilbury) and major

[83] http://www.cpier.org.uk/media/1671/cpier-report-151118-download.pdf

[84] https://www.nomisweb.co.uk/reports/lmp/lep/1925185549/report.aspx#tabidbr

[85] https://www.hertfordshirelep.com/media/5417/hertfordshire-lep-sep-report-interactive.pdf

[86] https://www.hertfordshirelep.com/media/5417/hertfordshire-lep-sep-report-interactive.pdf

airports (Stansted and Southend) has led to developing expertise in logistics and transportation.

The Greater Essex area has a strong entrepreneurial culture as reflected by its high proportion of smaller businesses, according to a 2018 report by the Essex Economic Commission. In 2018, Essex had in excess of 77,000 businesses, about 91% of which were micro with 0-9 employees and 8.1% were small with 10-49 employees. There are several active business groups in the area working to advance the interests of business, for example, Essex Partners, the Essex Business Board, and Opportunities South Essex.

Essex has sites and businesses either engaged in innovation or translating existing technological innovations into growth. The Harlow Enterprise Zone is an innovation centre, while Uttlesford is associated with Chesterford Science/Research Park. Advanced manufacturing, which accounts for 10% of the area's GVA, is an important sector. Areas with innovation potential in the sector are Basildon and Rochford due to the presence of automotive companies such as Ford. Anglia Ruskin University's Harlow campus and the University of Essex's Colchester campus are active in innovation in the life sciences and healthcare sectors.

SEMLEP (Bedfordshire)

Bedfordshire has a high rate of business dynamism. There were 26,795 businesses in Bedfordshire in 2018, of which 91% employed up to 9 employees while 7.5% had between 10 and 49 employees. As part of SEMLEP, Bedfordshire lies within the LEP which in 2017 had the third-highest rate of business start-ups per 10,000 people in the country, behind London and Worcestershire.[87] Luton, one of three constituent local authority districts in Bedfordshire, had the highest net growth rate of private sector jobs among UK cities in 2015-2016 (15.7%), amounting to 10,500 net job gains.[88] Furthermore, 66% of respondents to a Central Bedfordshire Council survey rated the area as a good place to do business.[89]

The area is highly innovative, with primary R&D taking place in science parks and the area's two universities (Cranfield University and the University of Bedfordshire), with substantial collaboration across institutions. This helps to support the area's high value knowledge-intensive business services operations, with aerospace, advanced engineering, bioscience, and food science being areas of focus. Businesses in these sectors have strong links in the Bedfordshire area and the surrounding clusters linked to the Cambridge-Milton Keynes-Oxford Growth Corridor.

The area also has several specialist automotive engineering centres specialising in vehicle testing and developing transport systems of the future. Transport Systems Catapult, the UK's technology and innovation centre for intelligent mobility, is based in the region.

[87] Page 98: http://www.semlep.com/modules/downloads/download.php?file_name=1237

[88] Ibid., page 15. The city of Luton is defined as the Luton local authority district; see here for more details.

[89] https://centralbedfordshire.app.box.com/s/0iimre4ewjkq6peyaev1gqxehxnjcilx

East of England business and innovation

The East of England has a dynamic and competitive business environment, with innovation having a central role. Compared to the UK average, the East of England has a slightly higher share of micro enterprises (0-9 employees) compared to the UK average (89.8% compared to 89.3%), while having the same share (0.4%) of large enterprises (250+ employees). Businesses in the East of England have the second highest R&D expenditure in the country, while the Cambridgeshire area has one of the highest employment shares in scientific R&D in the country (Figure 4.3.2).

Higher R&D expenditure is associated with higher levels of innovation. Indeed, data from the European Patents Office show that the East of England is second among English regions in patents filed per million inhabitants, while ranking first in patents published and granted per million inhabitants.

Support for innovative start-ups is a central policy theme of the regional authorities across the region, underlined by the number of science parks and business incubators and accelerators that are active in the area. These are depicted in Figure 4.3.3.

Table 4.3.2 summarises the business and innovation assets in the East of England.

Figure 4.3.2 Employment share in scientific R&D

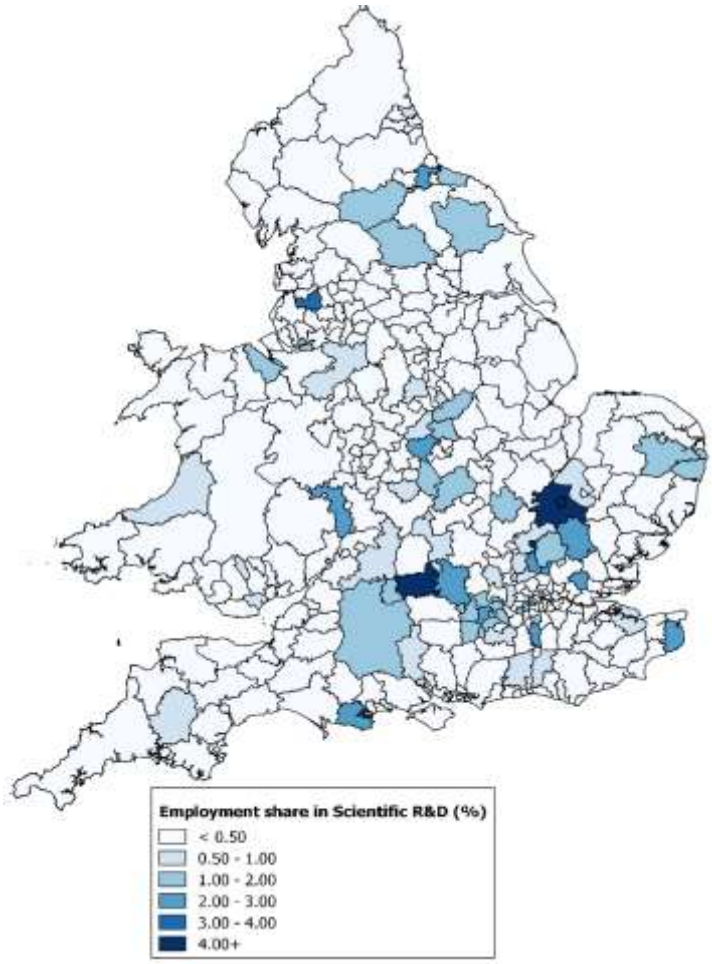
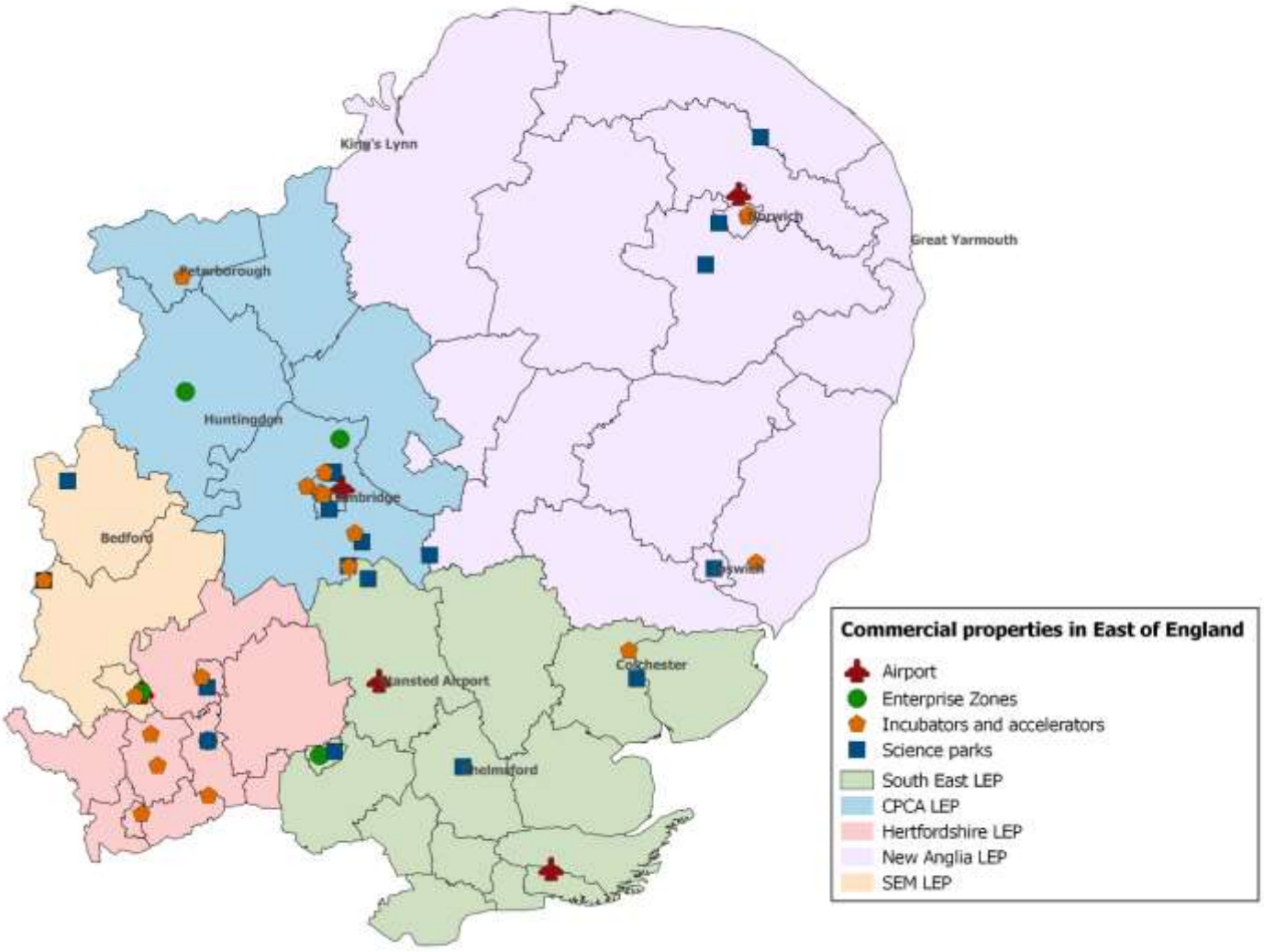


Figure 4.3.3 Map of main Enterprise Zones, Science Parks and Incubators & Accelerators in the East of England



Note: The 'Space to Innovate' Enterprise Zone in New Anglia spans several sites within the LEP and is not shown in the map.

Table 4.3.2 Summary of business and innovation across the East of England

People and skills	New Anglia LEP	Cambridge and Peterborough CA	Hertfordshire LEP	South East LEP (Essex)	South East Midlands LEP (Bedfordshire)
Number of businesses in 2018	- 62,750	- 35,220	- 61,000	- 77,000	- 26,795
Business share with 0-9 employees	- 88%	- 88.8	- 91%	- 91%	- 91%
Business share with 10-49 employees	- 9.7%	- 8.9%	- 7.5%	- 8.1%	- 7.5%
Enterprise Zones (EZ) and science/research parks	- Great Yarmouth and Lowestoft EZ - Space to Innovate EZ	- Cambridge Compass E, Cambridge Biomedical Campus, Cambridge Science Park, Granta Park, University of Cambridge	- Hertfordshire Enviro-Tech EZ, Stevenage Bioscience Catalyst, Building Research Establishment, Rothamsted Research, Cell and Gene Therapy Catapult	- Harlow EZ, Chesterford science/research park	- Luton Airport EZ, Transport Systems Catapult

Energy and physical assets

The East of England has major energy generation capabilities, with a unique mix of wind power, nuclear and gas assets. The southern part of the North Sea off the coasts of Norfolk, Suffolk and Essex has traditionally been a gas extraction area, while it has also emerged as a major global hub for wind energy production. There are currently close to 1,000 wind turbines off the East of England coast generating 3.75GW of renewable energy, with an additional investment of £50bn over the next ten years to deliver more than 1,000 additional turbines.[90] Furthermore, the ports of Lowestoft, Great Yarmouth and Harwich have key roles in supporting the offshore energy industry. Finally, Sizewell in Suffolk is the location of nuclear energy power station with one reactor currently in operation (out of a total of 15 in the UK), with plans of expansion in the future currently in development.

As government policy pivots towards renewable energy sources in the future, these have the potential to expand significantly, providing not only valuable jobs and income for the region, but also playing a significant role in helping the UK reduce its carbon emissions. With 60% of offshore wind energy in the UK generated in the East of England[91], the region is already an important centre of renewable energy and its experience puts it in a prime position to take advantage of the shift towards clean energy.

Another important physical asset for the East of England is the extent and quality of its farmland. The region has a total farmed area of 1.4m hectares, accounting for 15.3% of total farmed area in England (second to the South West's 19.3% share). 79% of the farmed area is arable, by far the highest share and largest arable area among English regions. Combined with the technological and scientific expertise of the area, this has evolved into a significant asset for the region, that can play a major role in the future as increasing focus is placed on the production of high-quality, healthy, ethical and sustainable food. The region's importance for the future of agri-food is underlined by the fact that for the period 2004-16, the East of England accounted for 35% of UK Research Council Funding in plant and crop science; 24% in agri-environmental science and 16% in food science and nutrition.

Figure 4.3.4 summarises the physical assets in the East of England.

[90] New Anglia LEP (2017a)

[91] East of England Science and Innovation Audit (2017).

Figure 4.3.4 Wind power (top) and land assets (bottom) in the East of England

Figure 4.3.4(a): Location of current and future offshore windfarms around the UK coastline. The East Anglian coast represents the bottom half of the "Eastern Energy Coast"

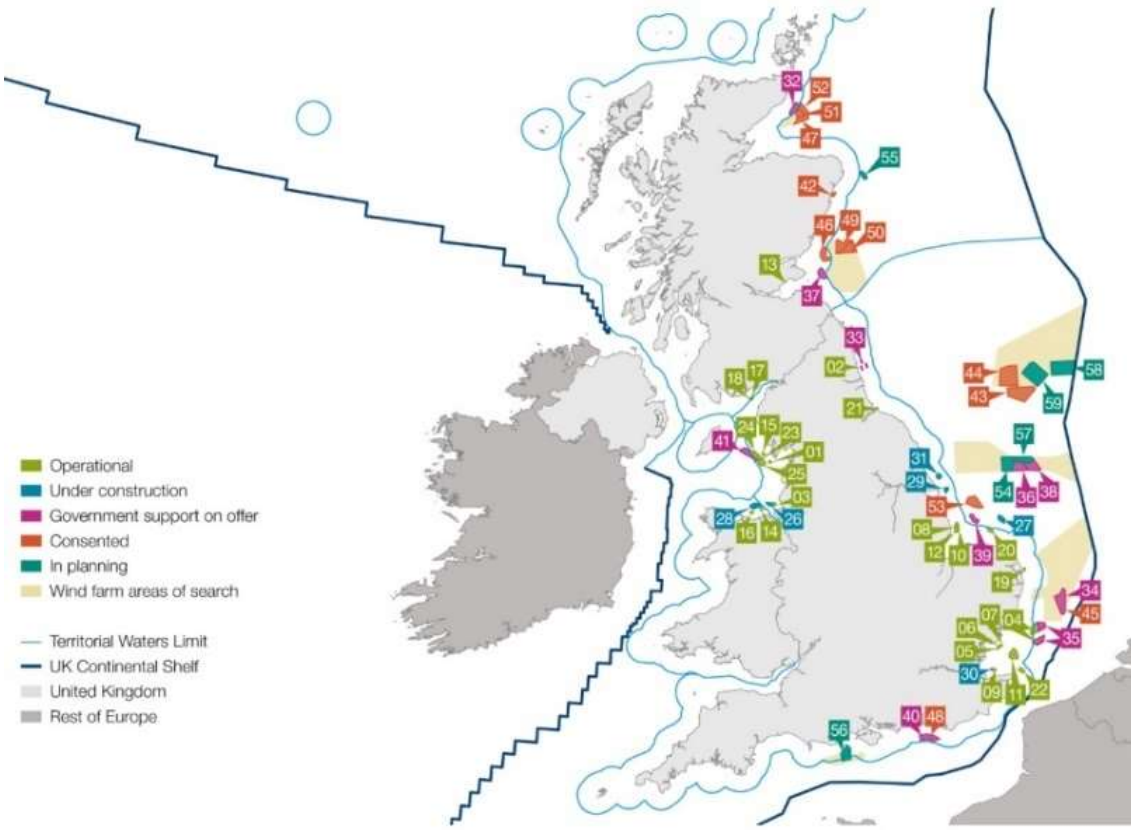
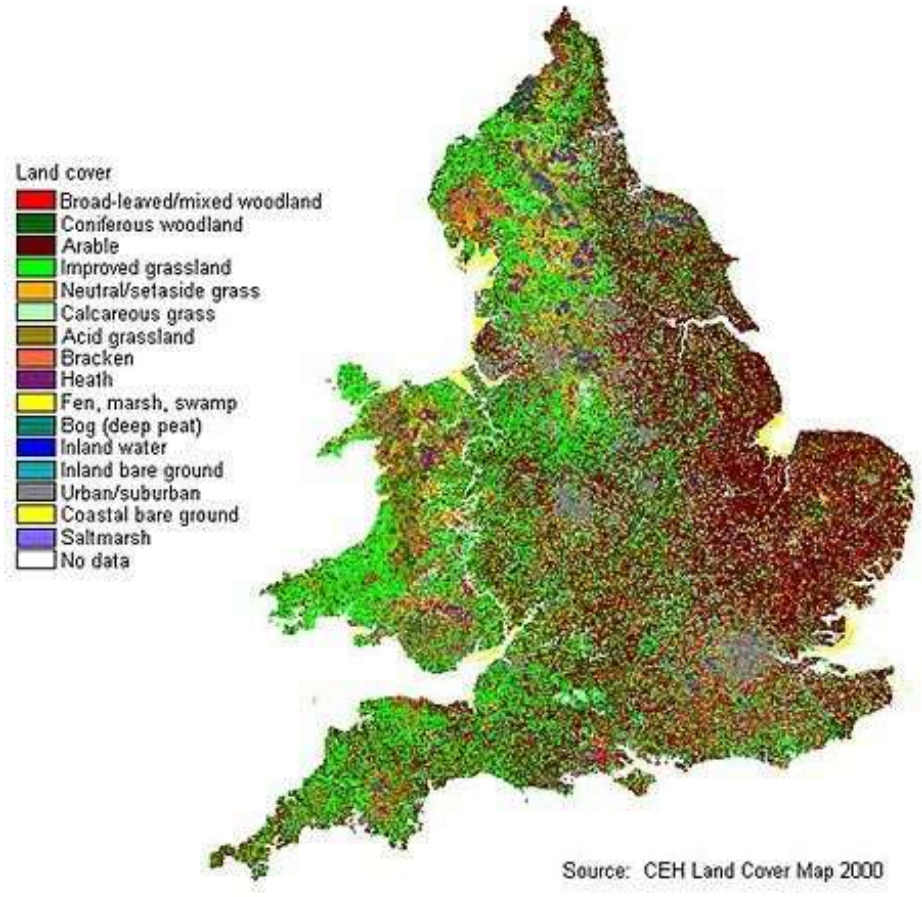


Figure 4.3.4(b): Land cover in England and Wales. Arable land (shown in burgundy) is heavily conentrated in the East of England



Sectoral strengths

Sectoral mix can be an important influence on productivity when it reflects a region's export base, its ability to bring income into the area and its ability to compete effectively.

However, most evidence shows that the sectoral mix does not explain the productivity gap between regions, not least because it is specialisation by function within a sector (for example, front versus back-office functions in the financial sector, or global versus national focus in manufacturing) that drives productivity differences between regions rather than the sector within which the function is located.

The East of England is a diverse economic area, and many of the individual spatial nuances are averaged out when viewed at a regional level. Hence, this section examines productivity and employment in the individual LEP areas first, and then looks at the region as a whole.

The figures in the remaining part of this section show the relative productivity (y axis) and relative employment (x axis) of each area compared to England excluding London. Relative employment is defined as the ratio of the sectoral employment share in that area to the employment share of the same sector in the comparator area:

$$relative\ employment\ of\ sector\ i = \frac{\frac{employment\ in\ sector\ i\ within\ area\ j}{total\ employment\ in\ area\ j}}{\frac{employment\ in\ sector\ i\ within\ comparator\ area\ z}{total\ employment\ in\ comparator\ area\ z}}$$

The definition for relative productivity is similar. The interpretation of these ratios is the following:

- Values above one in relative employment indicate an employment specialisation of an area relative to England excluding London.
- Values above one in relative productivity indicate a productivity advantage of an area relative to the comparator area.

Hence, an area has an employment specialisation and a productivity advantage in sectors placed in the top right quadrant, while sectors in the bottom left quadrant are ones where the area is less specialised and productive than the country average. The top left quadrant represents sectors that the area has high relative productivity, but does not have an employment speciality in; the inverse holds for sectors in the bottom right quadrant.

New Anglia LEP

According to the Norfolk and Suffolk Economic Strategy, there are nine sectors in which New Anglia has distinct strengths. These are energy; life sciences and biotech; ICT, tech and digital creative; agriculture, food and drink; visitor economy – tourism and culture; financial services and insurance; transport, freight and logistics; construction and development; advanced manufacturing and engineering. [92]

New Anglia is competitive in these sectors which are an important part of the local economy in terms of GVA and growth potential, as well as linking the area with the national and broader global economies and exemplifying the level and breadth of skills within the enterprises flourishing in the area. Part of

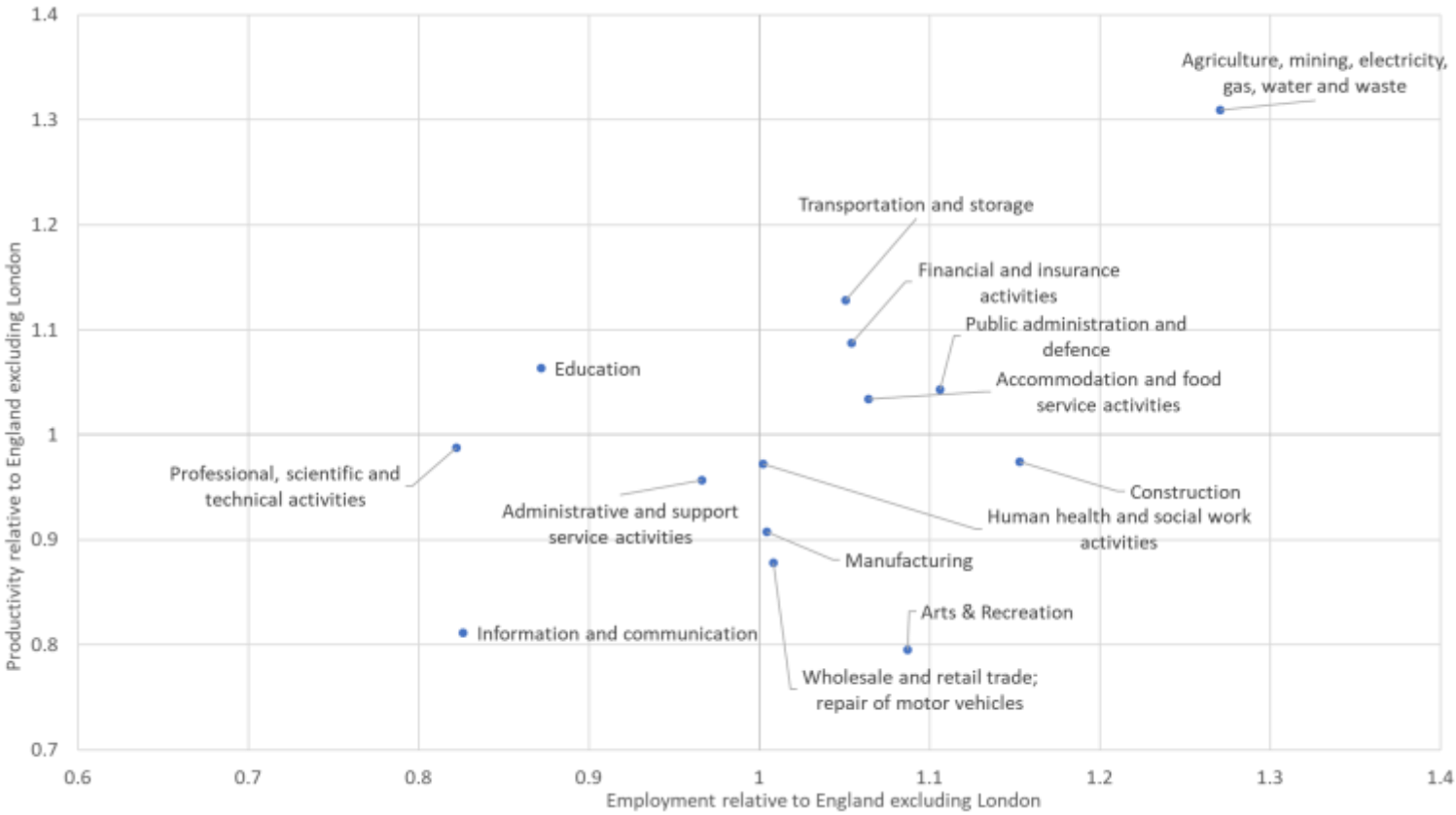
[92] New Anglia LEP, 2017a (p. 12).

this competitiveness relies on New Anglia's natural advantages such as fertile soils that have made New Anglia the most productive farming region in the UK and its 'breadbasket' while its coastal environment has made it possible for the growth of the offshore windfarm renewable energy sector.

Each key sector is represented by a business-led sector group in which members transfer knowledge and skills which harness innovation that feeds the area's growth. For example, the East of England Energy Group (EEEGR) represents over 350 organisations from the area's diversified energy sector which spans oil, gas, wind, and tidal. The energy sector employs 19,000 people directly and is expected to grow further, given that some of the world's largest windfarms are under construction off the East Anglian coast.[93]

Analysis of 2017 sectoral data for New Anglia is shown in Figure 4.3.5. Here we see that the New Anglia LEP area has sectoral productivity levels above the level of England excluding London in six of the fourteen broad sectors profiled. Of these, it also has relative employment specialisation in five: *Transportation and Storage* (reflecting its strengths in shipping and logistics), *Finance* and *Accommodation and Food Services* (reflecting its strength in tourism), *Insurance*, *Public Administration*, and, particularly, *Agriculture, Mining, Electricity, Gas, Water and Waste* (reflecting its strengths in Agri-food and offshore power generation). Other identified niche strengths, such as in life sciences and biotech or advanced manufacturing, are obscured by the breadth of the sectors for which data is available.

Figure 4.3.5 Productivity and employment in the New Anglia LEP area compared to England (excluding London)



[93] https://newanglia.co.uk/project/energy/

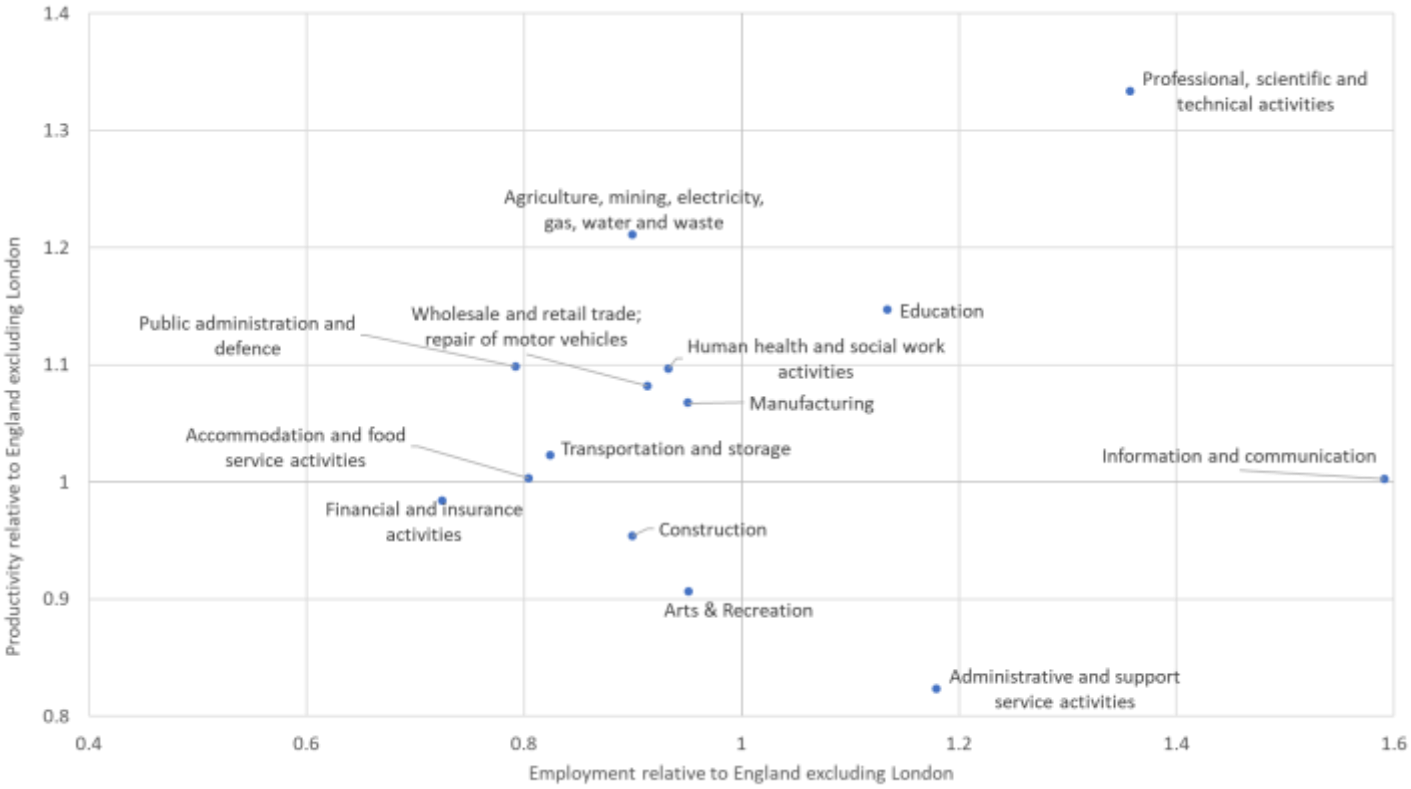
Cambridgeshire and Peterborough CA

The Cambridgeshire and Peterborough CA area is renowned for excellence in several key knowledge-intensive sectors which has led to the clustering of businesses, especially in the southern part of the Authority around Cambridge. These sectors include *digital*; *life sciences*; *advanced manufacturing and engineering*; and *agri-tech*.

The CA has a vibrant economy with above average productivity levels in ten out of the fourteen sectors.

2017 ONS data shows that the area's three standout sectors are *Professional; Scientific and Technical Activities*, *Information and Communication*, and *Education*. For these sectors the CA area has higher productivity and higher employment relative to England excluding London (see Figure 4.3.6).

Figure 4.3.6 Productivity and employment in the Cambridgeshire and Peterborough CA area compared to England (excluding London)



Hertfordshire and Bedfordshire

The contiguous counties of Hertfordshire and Bedfordshire have been analysed jointly. Remarkably, this combined region has productivity levels above level for England excluding London in eleven of fourteen broad sectors.

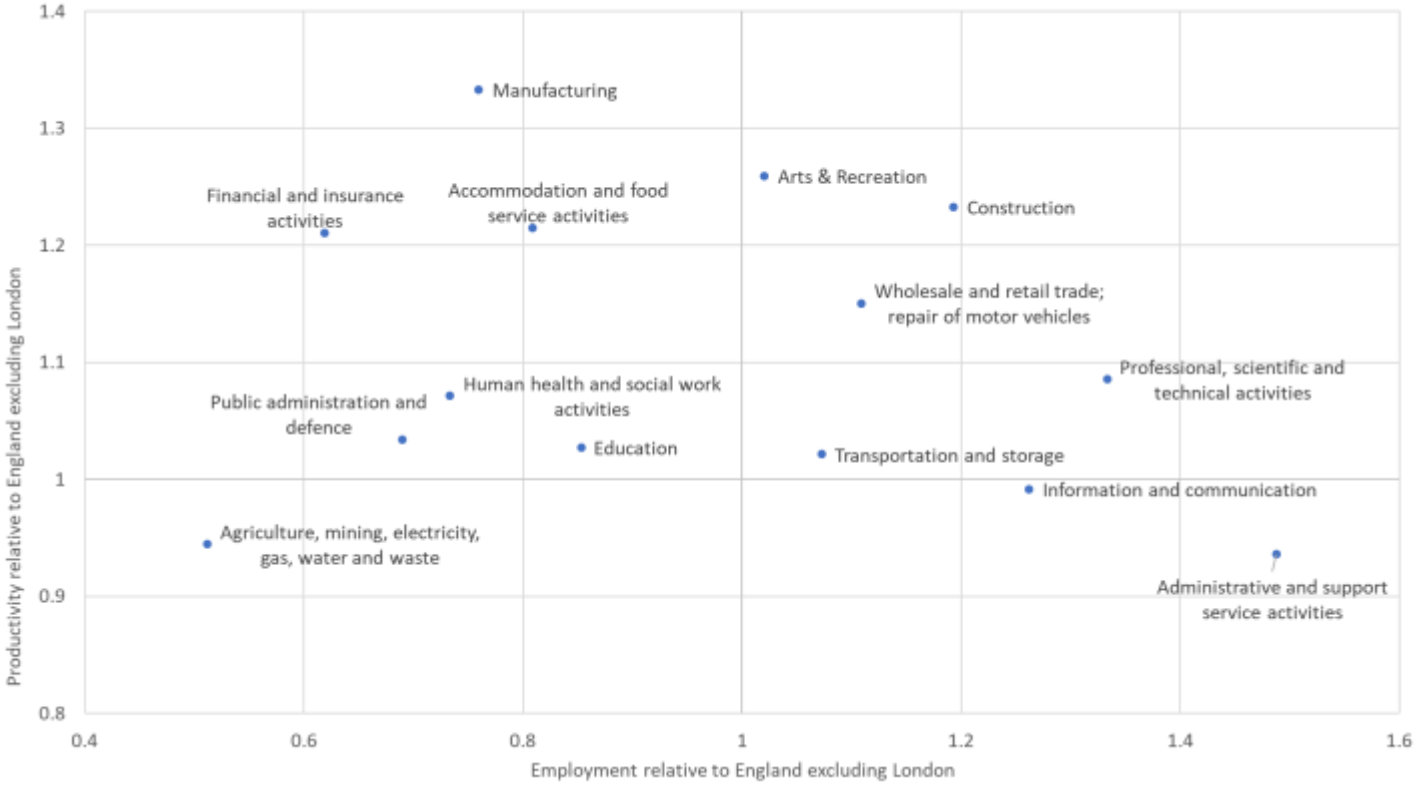
Hertfordshire has strong businesses in the science and technology sectors covering *pharmaceuticals and life sciences*; *agri-tech*; *advanced engineering and manufacturing agri-tech*; *IT/AI data economy*; *creative industries (media/film/TV production)*, and *sustainable construction materials and methods*. This is evidenced by resident businesses already listed above, as well as well as R&D operations in the area, for example, at Stevenage Bioscience Catalyst, Airbus, MBDA, Eisai and Rothamsted Research. In August 2019 it also emerged that the GSK site at Sycamore House, Stevenage had been bought by Dutch company, Kadans Science Partner, who have promised to redevelop and extend Sycamore House into a modern,

vibrant, multi-tenanted R&D facility, with expected an completion date of mid-2021.

There is also R&D and innovation in transport in Bedfordshire, for example, the advanced vehicle testing capacity at Millbrook Innovation Centre in Central Bedfordshire, high-end performance technology such as in Next Generation Transport innovation for freight, and advanced manufacturing technology for food and drink, aerospace and defence, cultural and creative industries.

Much of the business and R&D activity in the area has strong links to economic activity in surrounding areas (for example, with respect to where workers commute across Bedfordshire and Hertfordshire). Looking at productivity and employment in this area, we see in Figure 4.3.7 that the key sectors for which the Hertfordshire and Bedfordshire area outperforms the rest of England (excluding London) are in *Arts and Recreation*, *Construction*, *Wholesale and Retail Trade*, *Professional; Scientific and Technical Activities*, and *Transportation and Storage*.

Figure 4.3.7 Productivity and employment in Bedfordshire and Hertfordshire LEPs area compared to England (excluding London)



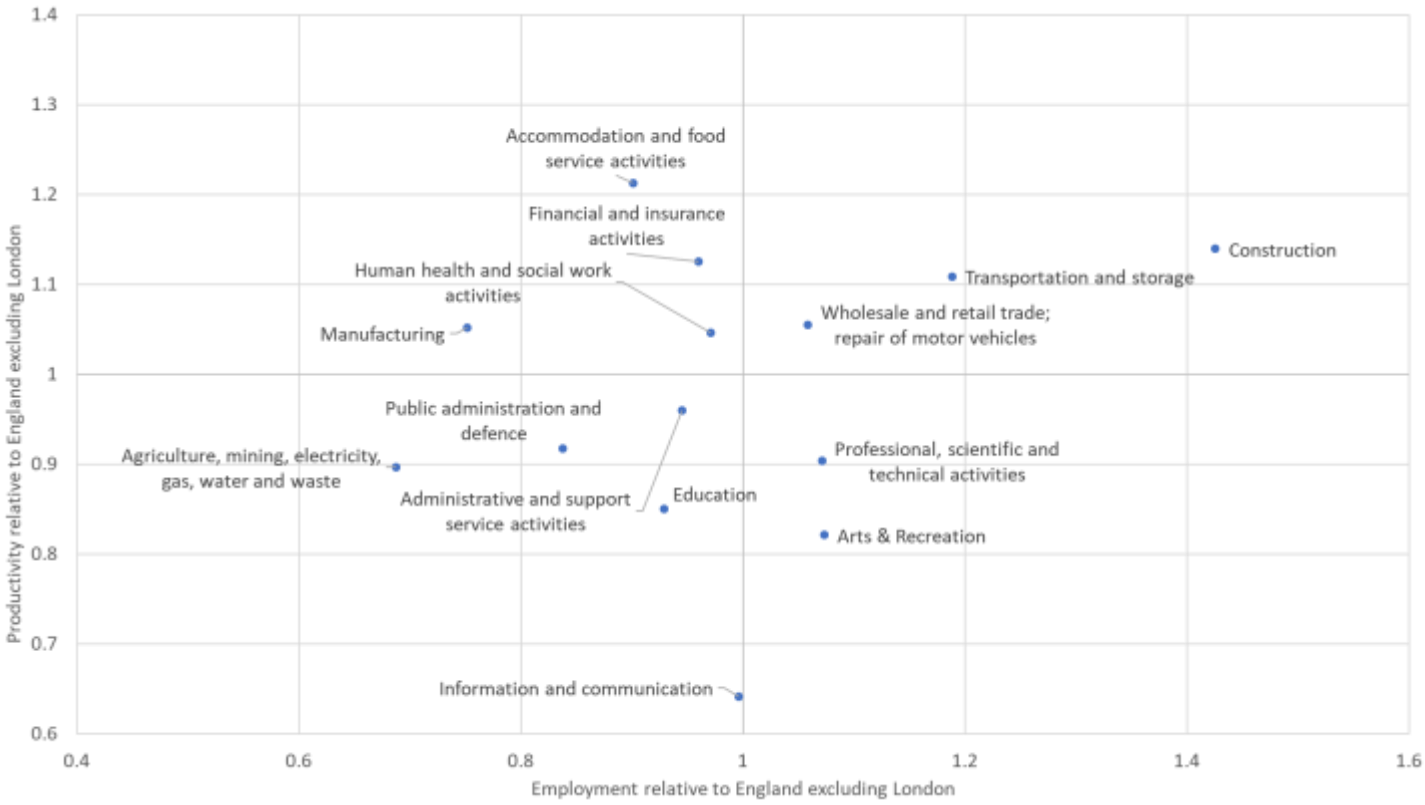
South East LEP (Essex)

The key sectors in the Greater Essex area include *logistics and transport* with expertise facilitated by the presence of major sea ports and two international airports (Stansted and Southend) and *life sciences and health/social care operations* at Chesterton Research Park and at the of county's two main universities. Anglia Ruskin University is developing Med Tech facilities at Harlow and Chelmsford while the University of Essex is undertaking research in healthcare and assisted living at its campus in Colchester.

Other key sectors are *advanced manufacturing in automotive and medical/dental/optical machinery and pharmaceuticals*; *digital and creative services*; *wholesale and retail trade*; and *financial and business services*.

Data from 2017 shows that Essex had productivity levels above the England level excluding London in seven of fourteen broad sectors, according to Figure 4.3.8. These sectoral strengths are quite different to the rest of the region, with less of a focus on hi-tech services, and higher levels of specialisation in *Construction*, *Transportation and Storage*, and *Wholesale and Retail Trade*, for example. In particular, the strength of the *Transport and Storage* sector is linked to Essex being home to major sea ports which handle a substantial amount of the UK's sea traffic, and the presence within the area of both Stansted and Southend airports.

Figure 4.3.8 Productivity and employment in Greater Essex compared to England (excluding London)



Sectoral analysis for the East of England

Within the East of England, almost all sectors are relatively stronger in productivity (i.e. are in the top part of the chart) compared to England excluding London, except for the following three: *Arts and recreation*, *Administrative and support service activities*; and *Information and communication*. The top five sectors in terms of productivity are *Accommodation and food service activities*; *Agriculture*; *Mining, electricity, gas, water and waste*; *Financial and insurance activities*; *Construction*; and *Manufacturing* (see Figure 4.3.9). However, only *Construction* among these five has a relative employment figure higher than that for England excluding London. The region has the highest relative productivity in *Construction* across all regions in England (excluding London) and the second highest in *Manufacturing*, *Professional, scientific and technical activities*, *Accommodation and food service activities*; and *Wholesale and retail trade; repair of motor vehicles* (in most cases lagging behind the South East).

On the other hand, the East of England has a relative productivity deficit in *Arts and recreation*; *Administrative and support service activities*; and *Information and communication* compared to other regions (ranking in the bottom four among all regions in each sector).

Of the sectors in which the East of England is relatively more employment-concentrated (i.e. are in the right side of the chart), the top five in the list are *Construction*, *Administrative and support service activities*, *Professional, scientific and technical activities*; *Information and communication*; and *Transportation and storage*. The region has strongest specialisation among all regions (excluding London) in *Construction* and *Administrative and support services* and second highest in *Professional, scientific and technical activities*; *Wholesale and retail trade; repair of motor vehicles* and *Information and communication*.

Moving to the top left quadrant, whilst relative productivity in *Financial and insurance activities*, *Agriculture, mining, electricity, gas, water and waste*, *Human health and social work activities*, *Public administration and defence* and *Real estate excluding imputed rent* ranks third among all the regions excluding London, employment concentrations in these sectors fall behind most of the regions. The relative employment figures for *Public administration and defence* and *Arts and recreation* are the lowest among all regions, while for *Manufacturing* and *Human health and social work activities* the region ranks second to last.

Interestingly, no sector in the East of England is placed in the bottom left quadrant, implying that there are no sectors having a disadvantage in both employment and productivity relative to England minus London.

Similarly, as shown in Figure 4.3.10, there is no sector that experienced negative growth in both employment and productivity during the period between 1998 and 2017. Out of all sectors, *Information and communication* had the highest productivity growth of just below 3%; however, employment only grew by about 1%. Conversely, *Professional, scientific and technical activities* enjoyed one of the largest growth rates in employment (over 3%) but had below 1% growth in productivity.

Figure 4.3.9 Productivity and employment growth in the East of England

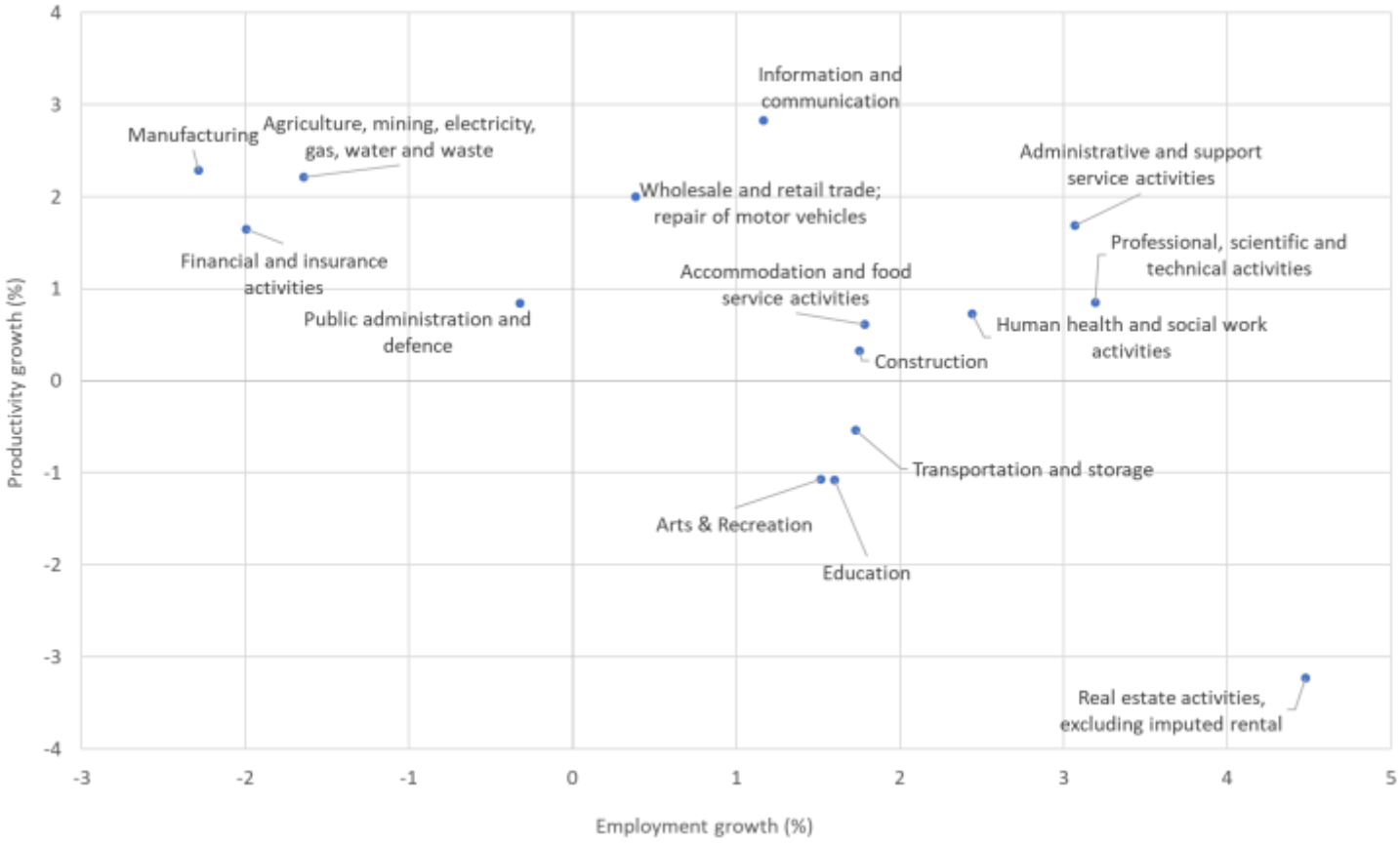
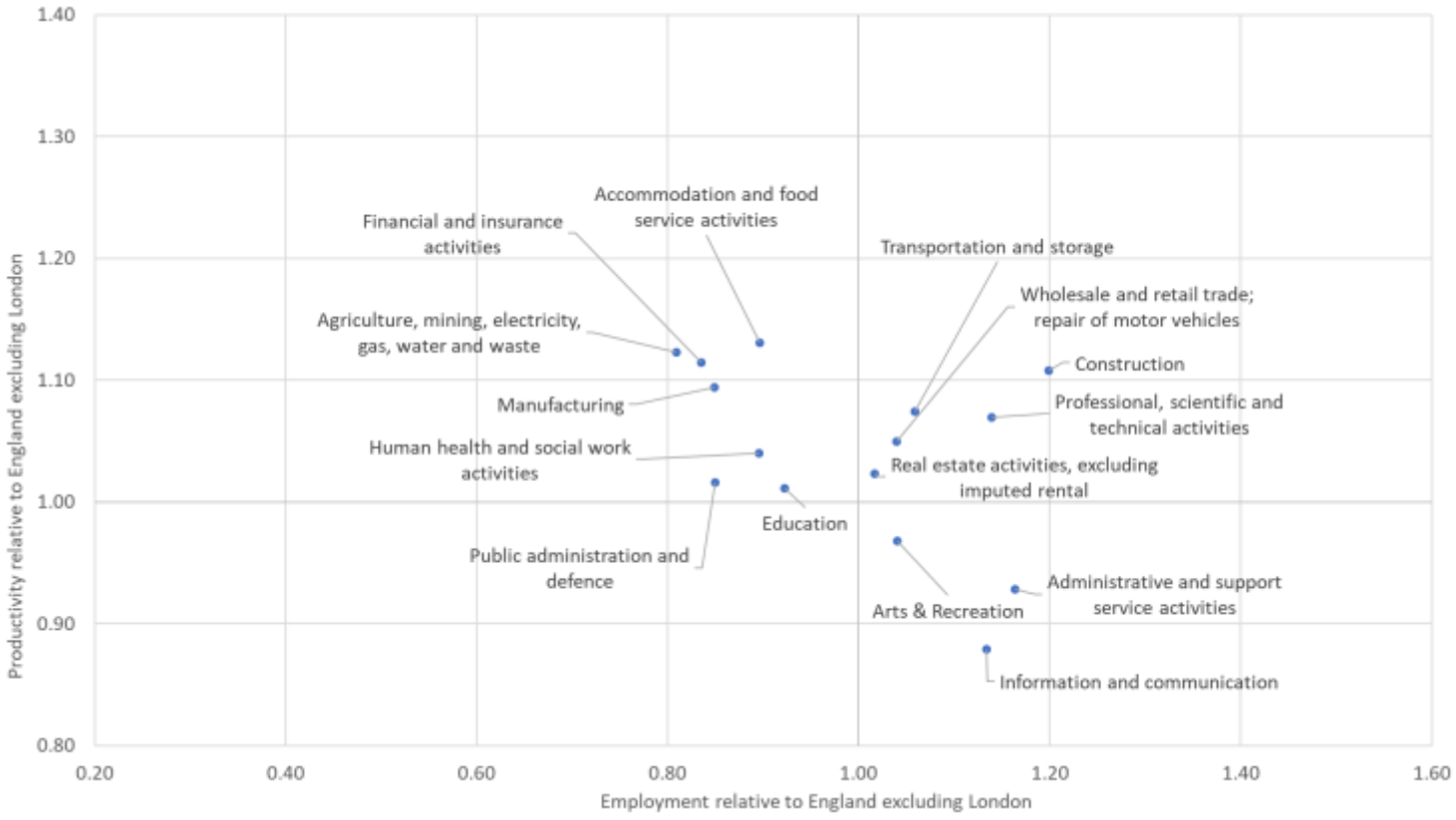


Figure 4.3.10 Productivity and employment in the East of England compared to England (excluding London)



Subsector analysis for the East of England

Manufacturing, *Construction*, *Financial and insurance activities* and *Professional, scientific and technical activities* play a bigger role in driving high productivity growth in the East of England than for the whole of England excluding London, and all other regions within it. We also identified relatively higher employment specialisation in the knowledge-intensive business sectors (KIBS).

Although the East of England does not specialise in manufacturing overall, within the sector the region does have a sizable employment surplus in *Repair of fabricated metal products, machinery and equipment*, *Processing and preserving of meat and production of meat products*, *Manufacture of products of wood, cork, straw and plaiting materials*, and *Manufacture of electronic components and boards*. Areas of manufacturing that have a large employment deficit are the *Motor vehicles or related sectors* and *Metal production sectors*. This combination reflects the area's strong presence in the UK agri-food supply chain, as well as more niche areas of high-value manufacturing.

Of the sectors within KIBS, the East of England has the highest employment surplus in *Research and experimental development on natural sciences and engineering*. Other sub-sectors within the largest ten in surplus include *Activities auxiliary to insurance and pension funding*, *Management consultancy activities*, *Architectural and engineering activities* and related technical consultancy and other media-related sectors like *Publishing and advertising activities*. Furthermore, the East of England has significant employment deficits in *Monetary intermediation*, *Other financial service activities, except insurance and pension funding* and *Other professional, scientific and technical activities n.e.c.*, which are associated with the banking sector and other consultancy-related services.

Summary

The East of England has a combination of physical and institutional assets that compares favourably to any other UK region, putting the region in a prime position to take advantage of emerging opportunities and tackle future challenges. These assets include:

- The presence of a world-leading university and associated globally significant tech clusters in and around Cambridge, the UK's leading hub of innovation and knowledge generation outside of London
- The highest proportion of employment in scientific research and development (1.1% in 2017) of any UK region
- Region-wide specialisations in high-value, knowledge intensive services, particularly in the professional, technical and scientific services and information and communication sectors
- A range of complementary specialisms, most notably in agri-food, offshore renewables, tourism and construction, as well as some niche high value manufacturing
- Close proximity to and high level of integration with London, resulting in numerous business links and commuting movements
- Significant international gateways, including high capacity freight and passenger terminals serving the European mainland, and (in London Stansted) the fourth busiest airport in the UK
- A high quality of life, with a mix of smaller "liveable" cities with significant cultural heritage and peaceful and affluent rural areas

The table below summarises the discussion and analysis of Chapter 4, identifying the East of England's key offer in addressing both the Four Grand Challenges and exploiting the four identified emerging market opportunities.

Table 4.3.3 Future challenges and opportunities, and the East of England offer

Challenge	Description	East of England Offer	Key Clusters/Locations	Key Facts and Figures
Grand Challenges				
Artificial Intelligence and Data	Putting the UK at the forefront of the artificial intelligence and data revolution	The East of England has a rich history and tradition in computer science and information technology in both academia and business, and is currently one of the most dynamic and innovative technology centres globally spurred primarily by the 'Cambridge Phenomenon'	- Cambridge Cluster - Adastral Park - Hertfordshire IT cluster - Cranfield University	- The East of England is 2nd among UK regions in digital tech turnover and 3rd in digital tech business count and employment[94] - Tech concentration in Cambridge is double the UK average[95]
Ageing Society	Harnessing the power of innovation to help meet the needs of an ageing society	The region is home to world-class universities and research institutions in the fields of medicine, pharmaceuticals and biosciences, as well as to some of the most globally important companies in these sectors, thus offering opportunities for collaboration, commercialisation and knowledge exchange	- Cambridge Cluster - Norwich Research Park - Stevenage Bioscience Catalyst - BioPark - GlaxoSmithKline R&D	- Institutions and entities from the East of England accounted for the following shares in UK Research Council funding in 2004-16: 24% in *regenerative medicine*; 20% in *microbiome*; 26% in *personalised medicine*; and 21% in the (much bigger) sphere of *drug discovery*. The shares for EU funding are broadly similar[96] - Only region with specialisation in all four life sciences sectors (*core biopharma*, *biopharma service and supply*, *core medtech*, *medtech service and supply*) relative to the national level[97]

[94] Tech Nation report 2019

[95] Tech Nation report 2018

[96] East of England Science and Innovation Audit (2017)

[97] Ibid.

Clean Growth	Maximising the advantages for the UK industry from the global shift to clean growth	The East of England coastline is a major hub for offshore wind and nuclear power generation, while the region's decades-long history in the oil and gas sectors has endowed it with a developed and experience supply chain	- East of England Energy Group - East of England Energy Zone - OrbisEnergy	- 60% of offshore wind Energy in the UK generated in the East of England[98] - There are currently 986 wind turbines off the region's coast generating 3.75GW of renewable energy, with an additional investment of £50bn over the next ten years to deliver more than 1,000 additional turbines[99]
Future of Mobility	Being a world leader in shaping the future of mobility	The region has several important knowledge and infrastructure assets that can help make significant contributions in shaping the future of mobility	- Aerospace Technology Institute - Millbrook Proving Ground - Nissan Technical Centre Europe - Lotus Cars - Multi-User Environment for Autonomous Vehicle Innovation (MUEAVI), Cranfield University	- Cranfield is UK site of the Nissan Centre of Excellence for design and development of vehicles manufactured in the European plants, employing 900 on site[100] - Lotus will produce the first all-electric hypercar by a British manufacturer[101]

[98] Ibid.

[99] New Anglia LEP (2017a)

[100] Life at Nissan Cranfield.

[101] News announcement by Lotus.

Challenge	Description	East of England Offer	Key Clusters/Locations	Key Facts and Figures
Other Emerging Technologies				
Smart Devices	Staying at the technological frontier by focusing on the most leading-edge fields, such as home and portable entertainment platforms, Internet of Things (IoT), Virtual Reality (VR), Artificial Intelligence (AI), connected systems, sensors, and robotics	Several globally and nationally significant technology clusters are thriving in the area, while leading research universities with specialisations in computer science and engineering are also located in the area and are frequently collaborating with the business sector to produce innovative ideas and products	- Cambridge Cluster - Adastral Park - Hethel Engineering Centre - Hertfordshire IT cluster - Airbus Defence and Space Stevenage - Cranfield University	- Businesses in Cambridge are 4 times more likely to focus on electronics and components than the national average[102] - The East of England has employment specialisations in a number of electronics, materials and engineering subsectors[103]
Future of Agri-Food	Developing specialisations in producing high-quality, healthy, ethical and sustainable food without being unaffordable	The East of England has a unique combination of high-quality farmland and R&D focused on the agri-tech and bioscience sectors, allowing for both cutting edge research and implementation	- National Institute of Agricultural Botany (NIAB) - Rothamsted Research - John Innes Centre - Quadram Institute - Hertfordshire IQ - Agri-Tech East - Eastern Agri-Tech Growth Initiative	- For the period 2004-16, the East of England accounted for 35% of UK Research Council Funding in *plant and crop science*; 24% in *agri-environmental science* and 16% in *food science and nutrition*[104] - The East of England has a total farmed area of 1.4m hectares, accounting for 15.3% of total farmed area in England (second to the South West's 19.3% share). 79% of the farmed area is arable, by far the highest share and largest arable area among English regions[105]

[102] Tech Nation report 2015.

[103] See Chapter 4 of this report.

[104] East of England Science and Innovation Audit (2017).

[105] https://www.gov.uk/government/statistics/agricultural-facts-england-regional-profiles

Future of Construction	Taking the lead in novel construction methods and trends, including offsite construction, build-integrated technology, energy efficiency	The fact that the East of England includes several of the fastest growing housing markets in the UK, combined with its proximity to London, expertise in engineering and innovation and specialisation in construction, put the region in an excellent position to take the future of construction forward	- Hertfordshire IQ - Hethel Engineering Centre - Building Research Establishment (BRE) Watford	- According to ONS data[106], the East of England ranks 3rd among regions in Great Britain in concentration of construction firms, and 4th in concentration of construction-specific employment - Apart from the Cambridgeshire and Peterborough CA, all other LEP areas in the East of England have an employment specialisation in construction[107]
Future of Professional Services	Taking advantage of technological advances that can improve the productivity of the sector, such as new analysis tools, virtual offices, digital platforms, cloud services, sharing of specialist tacit knowledge	The region is well-placed to tackle this challenge due to its diverse mix of local specialisations, knowledge assets, dynamic business environment and technological know-how	- Cambridge Cluster - Adastral Park - Norwich financial services cluster - Ipswich insurance services cluster	- The region has significant employment specialisation in the *professional, scientific and technical activities* and *information and communication* sector[108]

[106] ONS (2018). Construction statistics: Number 19, 2018 edition.

[107] See Chapter 4 of this report.

[108] See Chapter 4 of this report.

5 Regional Constraints and Interventions

5.1 Introduction

Chapter 5 outlines the challenges the region faces, lists the main interventions that the local authorities have planned for the future and identifies some broad potential solutions.

5.2 Constraints

The growth potential of the East of England and the corresponding manifold benefits to the UK economy, society and the environment will not be realised without intervention. There are significant constraints currently holding back the development of the region, which, in order to be lifted, require joined-up local and national government action, as well as coordinated input from businesses. These include:

- Future growth prospects in the Greater Cambridge area are currently severely constrained by its ability to provide realistically affordable housing[109] and commercial space for future firms and employees, and, not least, its ability to efficiently move daily commuters around and between its various employment hubs, many of which are on the urban fringe where they have poor public transport connectivity. Similar issues are also affecting Hertfordshire.[110]
- The northern and eastern fringes of the region (Fenland and areas of Norfolk and Suffolk) suffer from issues associated with rural peripherality, including patchy infrastructure provision, low levels of enterprise and innovation[111], as well as difficulty in attracting young graduates and/or accessing suitably further education skilled local workers[112]. The key here is to better integrate these peripheral areas into the economic market areas of their local employment centres, without compromising the high levels of natural capital that make them unique and attractive areas in their own right.

[109] According to the Cambridgeshire and Peterborough Independent Economic Review (2018), both the house-price-to-earnings ratio and the ratio of private median rents to median income in most Cambridgeshire district council areas are higher than the England average. Cambridge is the least affordable: the average house price is 13 times higher than average earnings (for England it is 7.8), while the median rent is 41% of the median income (the relevant value for England is 27%).

[110] Housing delivery in the post-recession period has consistently lagged behind the planned targets, while the housing affordability ratio has declined for all local authority districts in the county over the period 2013-15 (Hertfordshire LEP, 2017).

[111] 48 businesses created per 10,000 residents compared to the UK average of 72, while only 14% of active enterprises introduced a new or significantly improved process or service between 2010 and 2012, below the UK average of 19% (New Anglia LEP, 2017b).

[112] In 2015, 36.7% of workers in Norfolk and Suffolk had a qualification of the highest level (NQV4 and above; for higher education this implies at least a bachelor's degree), while at the national level the relevant figure was 42.9% (New Anglia LEP, 2017b). Furthermore, over the academic years 2014-15, more students left Norfolk and Suffolk to study elsewhere than those choosing to study in the area (ibid.).

- A challenge facing Essex is to tackle its disadvantaged urban communities in coastal areas.[113] Making better use of coastal assets, including in transport and logistics, offshore renewables and tourism to provide employment opportunities, is key here.
- A pressing issue to the south and west of the region is the availability of employment land and premises.[114] Permitted Development Rights have led to a lot of commercial office space being repurposed as apartments – leading to loss of employment premises, and most notably, of the land they are on for future redevelopment. Therefore, existing employment sites are being encroached by residential use – and become impossible to consolidate and regenerate as fit-for-purpose, campus-style technology parks and business centres.
- Another issue is that the districts bordering the M25 get a lot of low-value activities migrating from London to low-amenity employment sites. Furthermore, there exists a risk that the Oxford to Cambridge greenfield housing and employment sites will further push down market attractiveness of brownfield and (old) new towns in places like Herts and West Essex.
- Despite significant knowledge assets, the region as a whole suffers from low levels of graduate retention.[115] This is partly due to the lack of a single central conurbation with the diverse and exciting entertainment offer available in London or Manchester. The region needs to consider what its unique offer is to attract and retain young workers.
- Finally, there is acknowledged to be a lack of regional coordination across all sectors, technologies, challenges and factors of productivity. The right spatial level for coordination needs to be considered on a case-by-case basis.

5.3 Interventions

This subsection presents a summary of interventions that the relevant authorities (local and national) have planned for the East of England in the near future. It starts by listing the initiatives of the Local Enterprise Partnerships in the region, followed by other local and national projects. The subsection concludes by identifying common themes across the policies of the different LEP areas. A detailed list of interventions is included in Annex C.

[113] Parts of the Tendring District in north East Essex are the most deprived parts in the country, according to the Indices of Multiple Deprivation for England, published by the Department for Communities and Local Governments (South East LEP, 2017). Furthermore, Castle Point in Essex is one of two authority areas in the country with the smallest proportion of over-16s holding advanced qualifications (ibid.).

[114] For example, vacancy rates of commercial property in Norfolk and Suffolk have been dropping throughout 2012-16 (with the exception of Great Yarmouth), while incubation space is oversubscribed (New Anglia LEP, 2017b).

[115] CE analysis of Higher Education Statistics Agency (HESA) data shows that the share of graduates from an East of England institution that are employed in the region stands at 53.3%, one of the lowest retention rates in England (more specifically, only the East Midlands, South East and South West have lower rates). When excluding those that did not live in the region prior to their studies, this figure falls to 10.6% (once again 4th lowest in England).

LEP initiatives

A major funding source for local development projects are the 'Growth Deals'. Growth Deals between the government and the LEPs provide capital funding through the Government's Local Growth Fund for local projects or programmes that promote economic growth and job creation. Three stages of funding have been agreed thus far, with the third round completed in 2017. Another major funding tool is the £730m Growing Places Fund, targeted specifically at infrastructure projects.

New Anglia LEP

Through the three phases of Growth Deals, the New Anglia LEP has been awarded £290.8m, with £69m secured during the third phase. The major ongoing and future projects of the LEP fall under the following categories:

1 Infrastructure: Projects include transport infrastructure improvements and expansions, aimed primarily at alleviating traffic congestion and supporting housing development and key employment sites. Furthermore, significant amounts will be allocated along the coastline in order to improve flood defences (primarily in Great Yarmouth) and to a sandscaping scheme that aims to protect the Bacton Gas Terminal and gas infrastructure from erosion, while also bringing additional benefits to tourism and recreation. Finally, the LEP will commit resources to digital infrastructure, aiming to increase the coverage of superfast broadband in Norfolk and Suffolk.

2 Jobs, education and skills: Here the major initiatives are targeted at improving skills that are important for the key sectors of the local economy (including energy, maritime, information technology, engineering and ICT) by funding specialist skills centres, such as the Energy and Engineering Skills Centre of Excellence on East Coast College's Lowestoft campus. Furthermore, the LEP is developing Sector Skills Plans, which aim to identify the skills needs of the most important sectors of the local economy and develop plans to ensure these needs are met. [116]

3 Enterprise: Measures here include a new angel investment programme to support innovative start-ups, a new business park (Atex Business Park) on brownfield land and the expansion of the Great Yarmouth Energy Park.

Cambridgeshire and Peterborough CA

For the Greater Cambridge Greater Peterborough area, local authorities have secured funds of £146.7m to be spent between 2015 and 2021 through the Growth Deal, of which £98m has already been committed to projects. The allocation of the remaining funds is still under consideration, with the call for major projects closing in November 2018. For Greater Cambridge and Greater Peterborough, the main themes for the third stage are: housing delivery; transport; innovation and business growth; skills infrastructure and Enterprise Zones.

The emerging themes from the ongoing or planned projects are:

1 Transport: Road infrastructure improvements to tackle traffic congestion and stimulate economic and housing development in Whittlesey and Wisbech, as well as a rail study for the latter area.

2 Innovation: Funding for the new Haverhill Innovation Centre, as well as the Eastern Agri-Tech Growth Initiative aimed at facilitating innovation in the food, drink and horticulture sectors.

[116] https://newanglia.co.uk/sector-skills-plans/

3 Enterprise: Projects to unlock commercial land and/or jobs.

4 Housing: Funding for housing development projects in East Cambridgeshire, Ely and Peterborough, aiming to increase the supply of affordable housing.

Hertfordshire LEP

The main planned strategic projects for the Hertfordshire LEP are listed below:

1 Town centre improvements: Funding of projects that aim to improve the attractiveness of various towns in the LEP area (Stevenage, Bishop's Stortford, Hatfield, South Oxhey) through the development of new streets, housing, public places and office space.

2 Garden towns: Support for the development of the garden towns of Hemel and Harlow & Gilston, targeting to boost job and new housing creation.

3 Road infrastructure: Projects to improve traffic conditions and flood defences close to important residential and employment sites.

4 Innovation and skills: Funding support for new the new multi-site Enterprise Zone Hertfordshire Innovation Quarter (IQ), as well as a number of specialist research and skills centres and business parks (see Annex C for more details).

South East LEP (Essex)

The main upcoming and ongoing South East LEP projects for Essex aim to support important employment and population hubs. The main areas of focus are:

1 Infrastructure: Improvement and expansion of the road network to increase safety and reduce journey times in key spots of the network, including separate transport packages for the cities of Colchester and Basildon. It is expected that these projects will boost employment and housing construction, as well as provide better access to the Stansted Airport. Furthermore, there are plans to fund the development of a new multi-modal interchange and new station buildings to support transportation from and to the port of London Gateway/Stanford le Hope.

2 City improvements: Redevelopment of town centres by providing new public spaces, commercial property and road capacity improvements, as well as a major new railway station in Chelmsford. These are expected to aid housing development in the designated areas.

South East Midlands LEP – SEMLEP (Bedfordshire)

The main SEMLEP projects in the Bedfordshire area include:

1 Road infrastructure: The most important projects aim to improve access to Luton Airport, as well as alleviate traffic congestion in the town of Bedford with a view to increasing business productivity. These projects are also expected to help create new jobs and houses in the designated areas.

2 City improvements: Funding for the Luton Hat District to create a network of creative and digital industry workspaces in Luton. The projected outputs include new jobs, usable floor space and creation of new start-ups and more new opportunities for skills-based learning.

3 Skills: Funding support for the Business, Skills and Innovation Centre in Luton and the STEM Teaching Block Provision project in Bedford.

4 Technology: The key project is the Variable Temperature Emissions Chamber for HGVs in Millbrook, which will be important for testing fuel emissions and the performance of electric vehicles.

Other initiatives

City Deals

City Deals are agreements negotiated between the central government and local bodies (local authorities, LEPs, other entities) that grant the latter decision-making powers and funding to form and implement locally focussed growth plans. Four such deals have been agreed in the East of England:

- Greater Cambridge City Deal: the Deal primarily focuses on investment in infrastructure, housing development and improving the local skills supply (including creating a locally responsive skills system). The anticipated benefits of the Growth Deal include the establishment of an infrastructure investment fund, the accelerated delivery of more than 30,000 homes and the development of 1,000 new ones, the creation of 45,000 jobs and 400 apprenticeships.
- Greater Ipswich City Deal: the main focus of the Greater Ipswich City Deal is to tackle youth unemployment and to enhance the level of skills in the local economy. It includes the development of a locally responsive skills system and programmes to support unemployed people aged 16-24 years old and to maximise employer investment in skills, complemented by a business support package. The Deal is estimated to deliver new jobs and apprenticeships for young people and additional private and local public investment in skills.
- Greater Norwich City Deal: the Deal is structured in three strands: supporting businesses through enterprise and innovation initiatives; developing essential infrastructure and housing; and creating a locally-responsive skills system to maximise employer involvement and investment. The City Deal is predicted to help create more than 19,000 jobs (among which are 3,000 high-value jobs in the Norwich Research Park) speed up housing delivery and create 3,000 additional houses in the North East Norwich Growth Triangle.
- Southend-on-Sea City Deal: the main aim of the £6m City Deal is to support business creation and growth.

National projects

Two major infrastructure projects of national significance in the East of England area include the Cambridge-Oxford Expressway and East-West Rail. These projects share the main target of improving connectivity along the Cambridge-Milton Keynes-Oxford Corridor, an area with major hubs of research, innovation, technology, entrepreneurship and advanced manufacturing.

Furthermore, Highways England has planned a number of major projects in critical road arteries along the East of England. A full list is provided in Annex C.

East of England summary

A cross-cutting theme across the LEPs is that investment in transport infrastructure (in particular the road network), is the area of largest expenditure. This underlines the importance that the LEPs place on connectivity between and within regions and places, as well as the strain that population growth has placed on current infrastructure. This is further reflected in the SEPs, in which transport strategy is typically given a prominent position. While each LEP identifies the strategic corridors that are the most significant for economic growth, there are some common denominators: the London-Stansted-Cambridge Corridor and the Cambridge-Milton Keynes-Oxford Arc, both of which have major technological, research and innovation assets. Within the LEP areas, transport initiatives are aimed at improving productivity and living conditions in the major urban centres by reducing traffic congestion. Furthermore, a number of transport initiatives are designed to support Enterprise Zones, innovation parks and new housing development outside the large population centres.

Affordable housing is a major policy area for the LEPs in the East of England. Apart from improving transport infrastructure, the LEPs have also planned several initiatives to directly boost the provision of new homes and transform cities and towns. Such measures include city regeneration schemes, support for the creation of Garden Towns and Villages and grants and loans for housing development.

Another emerging theme from the Strategic Economic Plans (SEPs) is the acknowledgment of skills shortages and mismatches with local employer needs as significant challenges, compounded by the demands of technological progress. Hence, another major strand of LEP investment is directed towards programmes and projects that aim to increase the level of skills and knowledge stock in the local economies, particularly in Science, Technology, Engineering and Mathematics (STEM) subjects. These include the construction of new facilities or the upgrading of old ones within higher education institutions and the establishment of new skills and research centres.

Skills-supporting initiatives are also linked with promoting innovation, which is a further shared target among the LEPs. To this end, the LEPs have committed significant resources to creating innovation centres connected to business hubs or research institutions, as well as financing smaller schemes aimed at supporting business R&D.

An important part of the SEPs is to promote business creation and growth, as well as the development of regional networks and clusters. A major obstacle is the loss of employment space to housing development, which is contributing to the increasing cost of business premises in the East of England. Hence, significant investment is directed towards the establishment and support of Enterprise Zones, business incubators and business parks, as well as the regional Growth Hubs. Expansion and improvement of digital infrastructure, a measure that would help improve business competitiveness and innovation, is also a target shared among many of the LEPs.

5.4 Potential solutions

One of the region's biggest challenges, shared across all local jurisdictions, is that several areas have a severe shortage of housing and employment space provision, while other areas struggle to attract and keep residents and businesses.[117] Improvement and expansion of the regional transport network, especially close to and between employment centres, is crucial in alleviating the pressure in the high-demand areas around the region, while also helping boost productivity and enhancing knowledge exchange and strategic connections both within the region and with neighbouring regions. Transport infrastructure improvements would also help the more peripheral areas improve their offer to potential new residents and businesses, as well as unlock new spaces for commercial and housing development.

The problem of attracting and retaining employees, particularly when it comes to young graduates, could be further improved through creative place-making and diversification of the entertainment options available.

Another important, and linked, intervention would be to facilitate the diffusion of knowledge and employment opportunities within the region, as there are large disparities between urban and rural areas, and to a lesser degree, between some of the different urban centres as well. Supporting further and in-work education provisions across the region could be helpful in this regard, as well as providing incentives for business creation in disadvantaged areas and collaboration of the commercial, research and public sectors across the region.

Even though the East of England is at the forefront of technological progress[118], not all firms in the region have taken advantage of this. A programme designed to encourage and facilitate the adoption of new technology and procedures across all sectors would see better use made of the region's considerable knowledge assets.

Finally, in order to effectively address the problems holding back the region's potential, better coordination of the regional authorities is key. Unlike the 'Powerhouse' in the North and the 'Engine' in the Midlands, the East of England does not currently have a unified strategy representing the region as a whole. Nevertheless, it is evident that the areas making up the East of England face several issues that are of similar nature or are, in a way, complementary. Hence, it is important that the regional and local authorities coordinate and collaborate in planning for the future development of the East of England, so as to avoid contradictory policies, spot and solve problems faster and more efficiently, and fully unlock the region's potential.

[117] In the New Anglia LEP area, the figure of people per job ranges from 1.56 in Norwich and 1.8 is St. Edmundsbury to 2.85 in Waveney and 3.17 in North Norfolk (New Anglia LEP 2017a; 2017b). Furthermore, in the Cambridgeshire and Peterborough Combined Authority area, there is evidence that housing completions in more rural districts have fallen in recent years, while in the cities of Cambridge and Peterborough housing delivery has accelerated (CPIER, 2017).

[118] UK Innovation Survey data for 2014-16 show that the East of England is the 2nd most innovative English region (narrowly behind the South East), with more than half of the businesses in the survey being innovation active (The UK Innovation Survey: Headline Finding 2014 to 2016, 2018). Furthermore, as of 2017, the East of England is 2nd with 19.7% of total UK business R&D spend, with the South East being 1st with 20.5%. (Department for Business, Energy & Industrial Strategy, 2017).

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Annex A: Literature overview

Table A1 lists the literature reviewed so far and provides a brief overview of contents in the form of a chapter list.

Table A1: Literature on Local Enterprise Partnerships (New Anglia LEP, Greater Cambridge-Greater Peterborough CA, Hertfordshire LEP, and part of South East LEP, SE Midlands LEP); LADs and cities; and non-governmental entities (e.g. CNTC, CamKOx, LSCC Growth Commission)

Literature and author	Chapter list
Economic Strategy Evidence Report (New Anglia LEP, 2017)	1. Economic profile at a glance, 2. Executive summary 3. People, demography and skills 4. Employment, jobs and earnings 5. Economic growth, productivity and living standards 6. Our business base and its characteristics 7. Enterprise, innovation and competition 8. Trade, investment and overseas capital 9. Land use, housing and infrastructure 10. Sectors and supply chains 11. Glossary and compendium of data sources
Norfolk and Suffolk Economic Strategy (New Anglia, 2017)	1. Foreword 2. Norfolk and Suffolk 2017 3. Our Sectors 4. Our Ambitions 5. Priority Themes and Places 6. Making it Happen
New Anglia LEP developing a LIS for Norfolk and Suffolk (links to a website) Site with infrastructure-related material	1. Material which might be informative for this project
Interactive investment map of Norfolk and Suffolk (New Anglia LEP, 2018)	Map has information on Enterprise Zone sites
Cambridgeshire and Peterborough Strategic Bus Review (CPCA, 2019)	1. Interventions in the cities' networks 2. Rural and inter-urban bus services 3. Delivering modern public transport 4. Implementation and transition plan
Cambridgeshire and Peterborough Independent Economic Review (CPCA, 2018)	1. Overview of area (historical, economic growth/geography, market towns, natural assets) 2. The future of CP 3. Business 4. Housing 5. Infrastructure

	6. Health and well-being 7. Early Years, education, and skills 8. Market towns 9. Governance
Cambridgeshire and Peterborough Strategic Spatial Framework (CPCA, 2018)	1. About Cambridgeshire and Peterborough 2. Strategic spatial issues 3. Supporting delivery of the development strategy in local plans to 2036 4. Inclusive growth 5. Wider spatial context and working with neighbouring areas 6. Next steps: opportunities for developing the strategic spatial framework to 2050
Strategic Economic Plan: 2017-2030 (Hertfordshire LEP, 2017)	1. Understanding Hertfordshire's economic engine 2. wilder trends and drivers 3. our strategy 4. priorities (maintaining global excellence in science and tech, harnessing our relationship with London and elsewhere, re-invigorating our places for the 21st century, foundations for growth) 5. delivering 'perfectly placed for business' 6. measuring success
Brexit & Hertfordshire: Understanding the risks and potential impacts (Hertfordshire LEP, 2018)	1. Exec summary 2. understanding Brexit 3. estimating potential Brexit risks for Hertfordshire 4. Brexit impact studies 5. Additional data used to assess Herts' Brexit risks
Building our Industrial Strategy – Our response to the UK Government Industrial Strategy (Hertfordshire LEP, 2018)	1. Intro (the case for a modern industrial strategy) 2. Challenge 1: building on our strengths and extending our excellence into the future 3. Challenge 2: Ensuring that every place meets its potential by working to close the gap between our best performing companies, industries, place and people and those which are less productive 4. Challenge 3: Making the UK one of the most competitive places in the world to start or grow a business 5. Conclusion: Delivering a modern Industrial Strategy and Herts LEP's agenda for action

Grand Challenges for Hertfordshire: Towards our LIS (Hertfordshire LEP, 2018) More Hertfordshire documents	1. AI and Data Economy 2. Clean growth 3. Future mobility 4. Ageing society
South East Midlands (SEMLEP) Strategic Economic Plan (SE Midlands LEP, 2017)	1. Priorities 2. Overview: mission, geography, economy, growth strategy, implementing 3. Growing business (innovation and showcase sectors, employment land; exports and investment, business support and representation) 4. Growing people (meeting employers' needs, helping people to progress) 5. Growing place (strategic transport infrastructure, housing, other infrastructure) 6. Cross-cutting themes (social inclusion and the VCS sector, the rural economy, the natural environment and sustainable growth)
SE Midlands LEP LIS - Emerging policy themes and propositions (SEMLEP, 2018)	1. Emerging themes presentation
South East Midlands LEP Local Industrial Strategy - Evidence Base (SEMLEP, 2018) Bedford, Central Bedfordshire, Luton	1. Over-arching economic and demographic evidence 2. Key sectors and sub-sectors (high performance tech, manufacturing and advanced tech, logistics, creative and cultural, science and innovation assets) 3. Current business constraints (skills, suitable premises, energy capacity, international trade & Brexit, scale-up, transport, digital connectivity, the rural economy) 4. Future trends and projections (demographic trends, economic growth trends, automation and future trends for showcase sectors, next generation transport and electric vehicles, green energy, natural capital 5. SEMLEP and the growth corridor (clusters, commercialization and connectivity, housing)

South East LEP Strategic Economic Plan – Evidence Base[119] (SELEP 2017)	1. Scope of evidence base 2. Why addressing productivity is more important than ever before 3. Other structural issues that could further impact on our future productivity 4. The UK Govt's strategy for tackling these issues and our low productivity 5. The characteristics of the SE LEP economy 6. Cultivating world-leading sectors 7. Developing skills, employability & business capabilities 8. Science; research and innovation, business start-up and growth 9. Encouraging trade and inward investment 10. Infrastructure 11. Conclusion
Local Energy East Strategy – An Energy Strategy for the Tri-LEP Area (Cambridge and Peterborough CA-Hertfordshire, New Anglia LEPs, 2018)	1. Objectives – themes (clean economic growth, housing growth and commercial site infrastructure, secure; local; affordable; low-carbon consumption, clean transport networks) 2. Context (global energy, policy, Industrial Strategy, UK clean growth strategy, the local energy East strategy, Energy networks: challenges and opportunities) 3. Clean economic growth 4. Housing growth and commercial site infrastructure 5. Secure; affordable; low-carbon consumption 6. Clean transport networks 7. Future work
There are 47 LADs in the East of England, most of which have working *Local Plans* (often coordinated with LAD groups and County Councils)	LAD Local Plans set out the area's economic development strategy setting out the vision, policies and proposals for the future. These plans cover areas on spatial planning, housing provision, business support and employment growth, transport and other infrastructure provision
Economic Growth Potential of the Cambridge Norwich Technology Corridor (Cambridge Econometrics for Breckland Distict Council, 2017)	1. Introduction (background and corridor definition) 2. Context (local, regional and national) 3. Ambition 1: Cluster development

[119] Included because scope document refers to '…and part of SE LEP'. This publication also refers to material on Essex and other East of England geographies which lie within the project focus area.

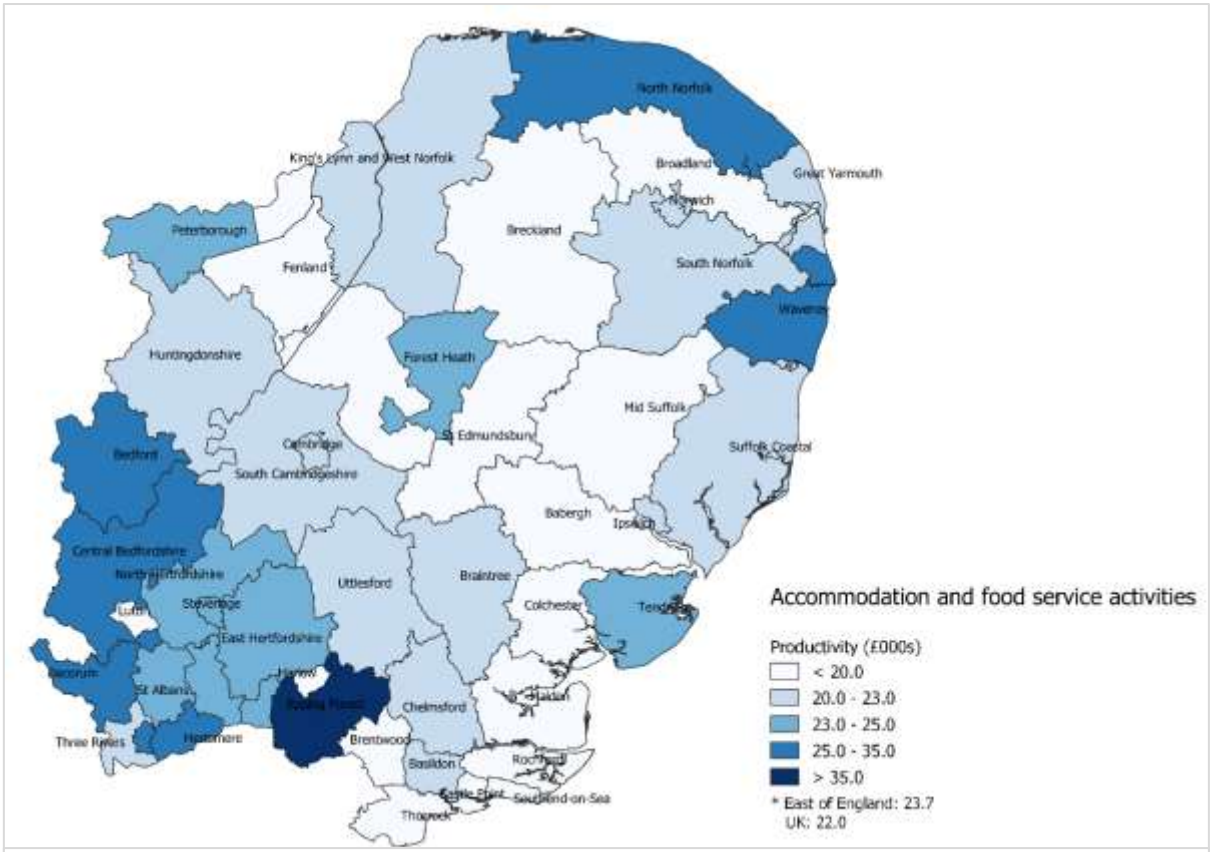
	4. Ambition 2: Accommodating the spatial expansion of the major city regions 5. Ambition 3: Ensuring inclusive growth 6. Conclusions
London Stansted Cambridge Growth Corridor (LSCC Growth Commission, 2016)	1. Economic performance 2. Business, innovation and industry 3. People 4. Place 5. Travel to work and transport 6. Findings from existing local evidence
The next global knowledge region: setting the ambitions and delivering the vision (LSCC Growth Commission, 2016)	1. Findings from evidence and inquiry events 2. Ambition: our vision for the London-Stansted-Cambridge corridor 3. Delivery: cooperation and collaboration can deliver a step-change
Growth in the East of England and the Role of Stansted – an economic review (Volterra, 2017)	1. East of England economic context 2. Future growth in the East of England (projections, challenges and opportunities for future growth, growth scenarios, infrastructure costs of growth) 3. The importance of Stansted to the region (Stansted current economic importance, the case for expansion at Stansted) 4. The need for a long-term vision
East of England science and innovation audit, 2017	1. Introduction to the East of England Science and Innovation area 2. Strengths in science and innovation 3. Theme 1: Life sciences 4. Theme 2: Agri-tech 5. Theme 3: Advanced material and manufacturing 6. Theme 4: ICT 7. Conclusion 8. Annexes A-E on i) how the East of England's science and innovation audit was developed, ii) high level business cases for priority interventions iii) LEPs' commitment to science and innovation in their SEPs iv) list of stakeholders who contributed to the SIA v) maps from chapter 1 9. Appendices 1-4 containing theme reports/evidence on life sciences, agri-tech, advanced materials and manufacturing, and ICT

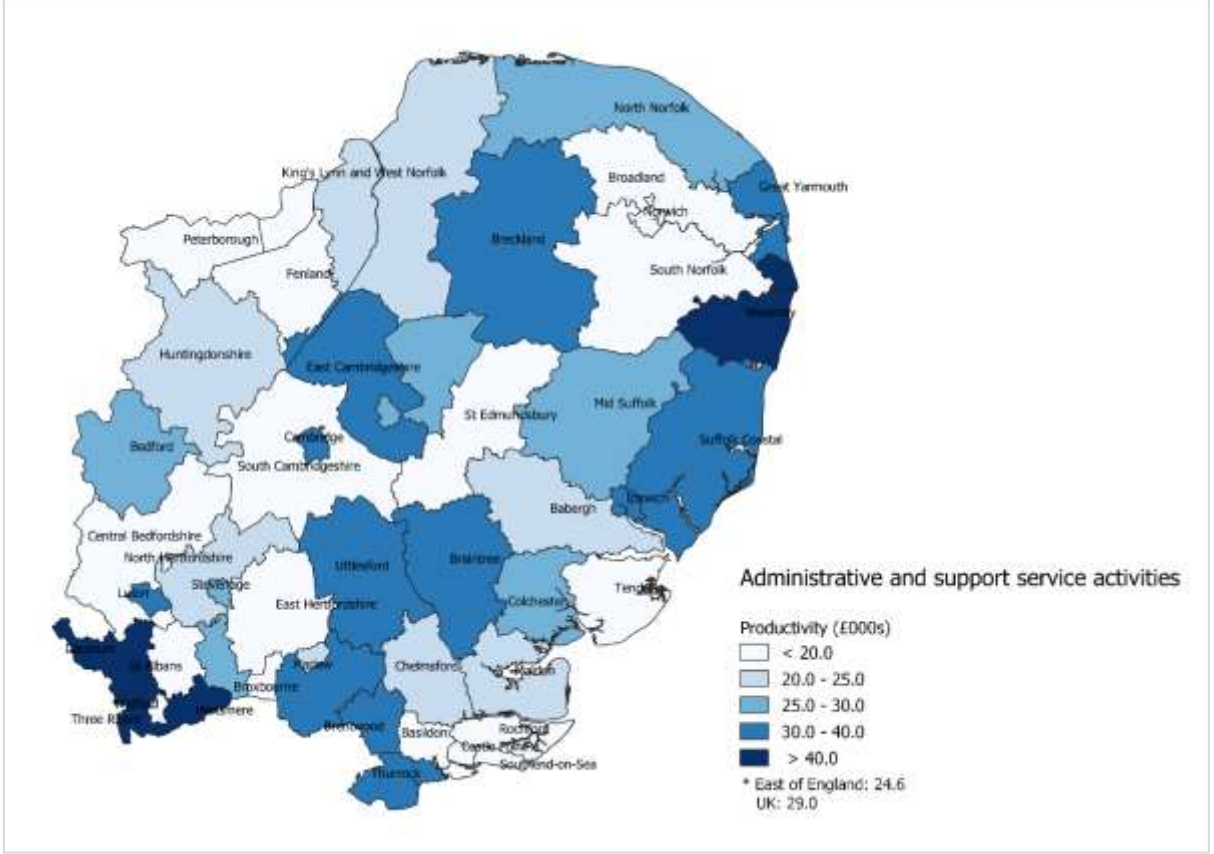
Growing together – cities and regions collaborating on shared priorities. This report is an agenda for growing together, and a statement of intent by four business groups (London first, North West Business Leadership Team, the Northern Powerhouse Partnership, and Business North)	1. Growing together for national prosperity 2. Mapping economic activity in UK 3. The North: capabilities and potential 4. The UK's economically significant clusters 5. A shared agenda for growth Recommendations: growing together to compete in the global economy

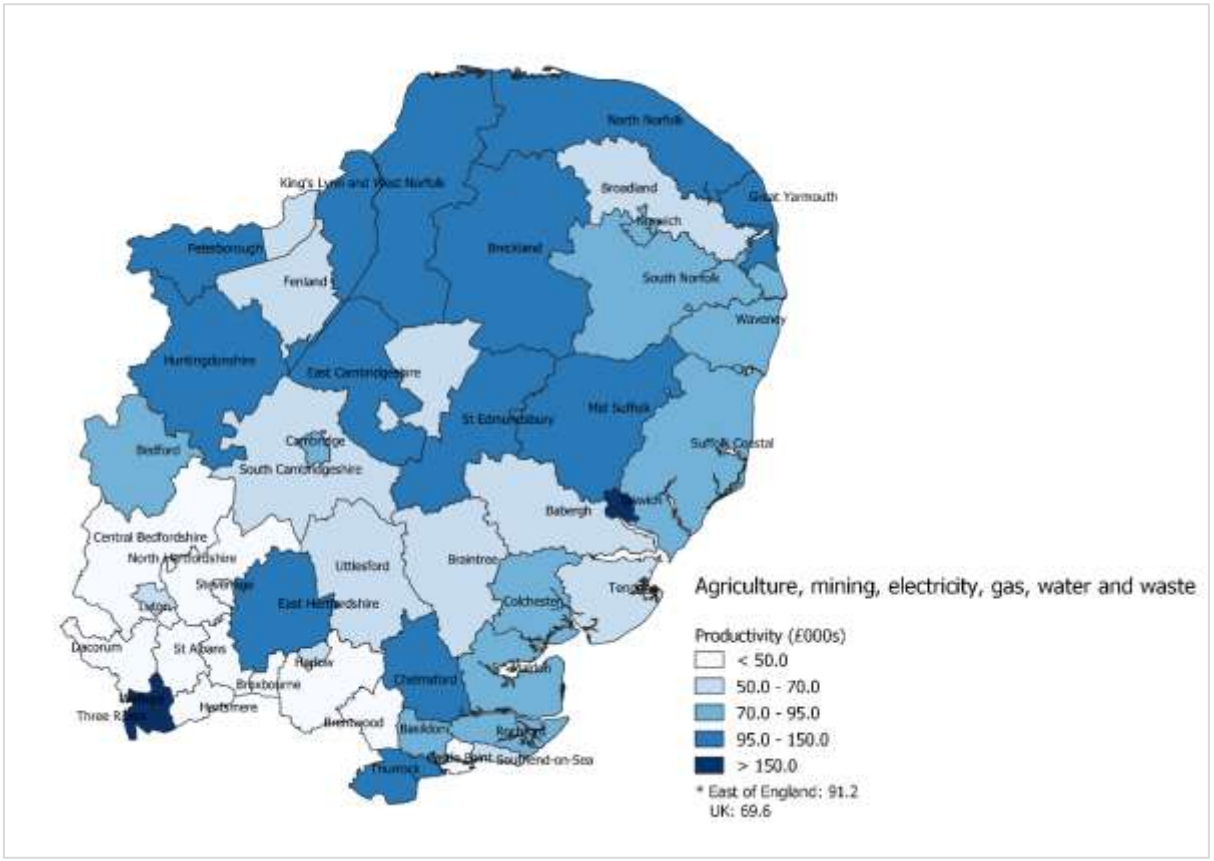
Notes: Note: CPCA's SEP is from 2014 under GCGP. CNTC refers to the Cambridge-Norwich Technology Corridor.
Source: Cambridge Econometrics.

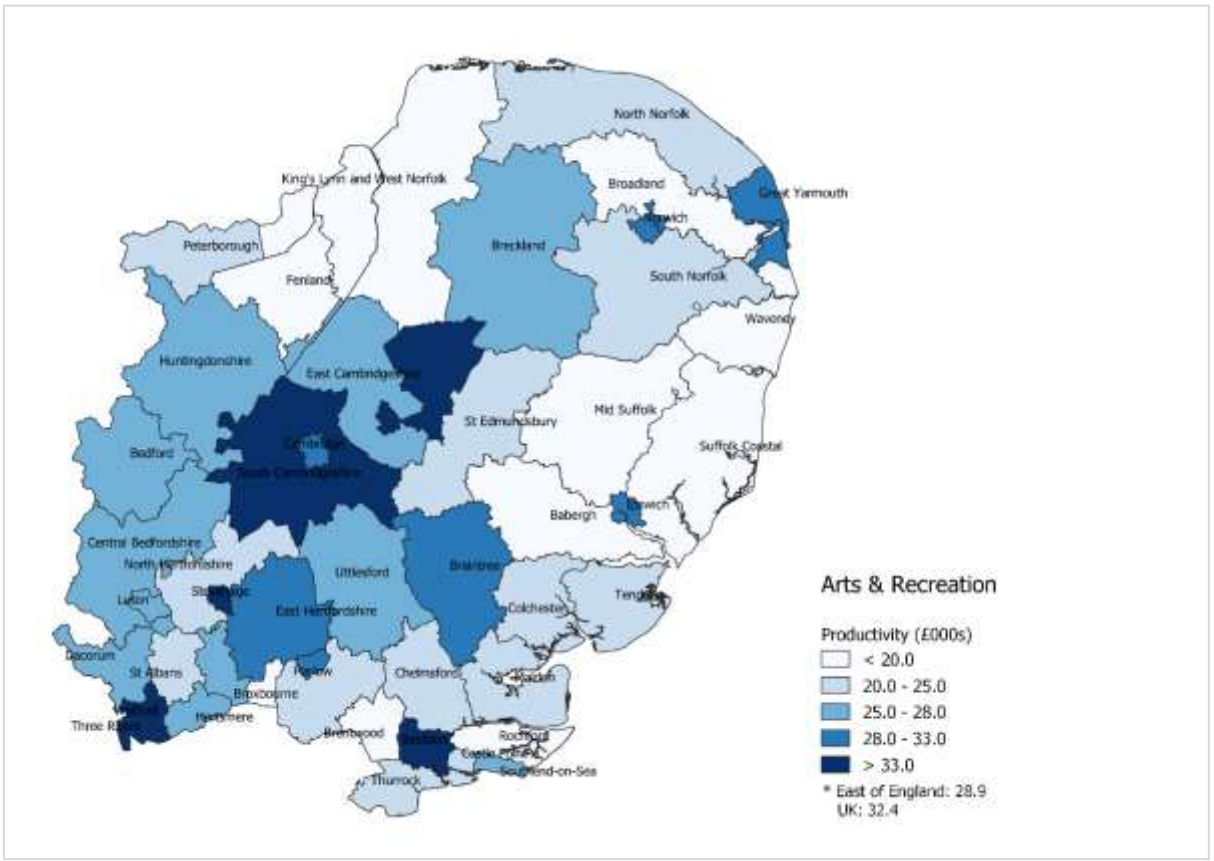
Annex B: Productivity and Employment Density by Local Authority

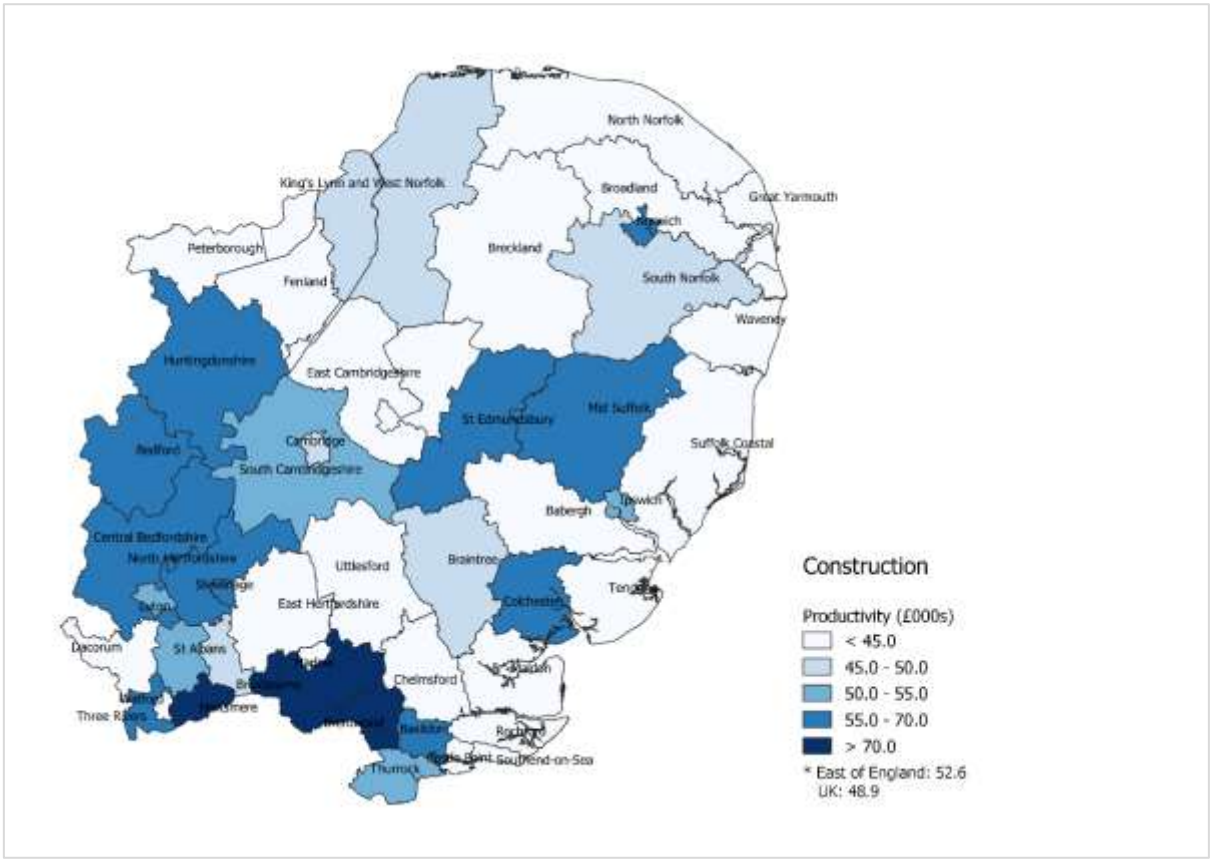
A.1 Productivity

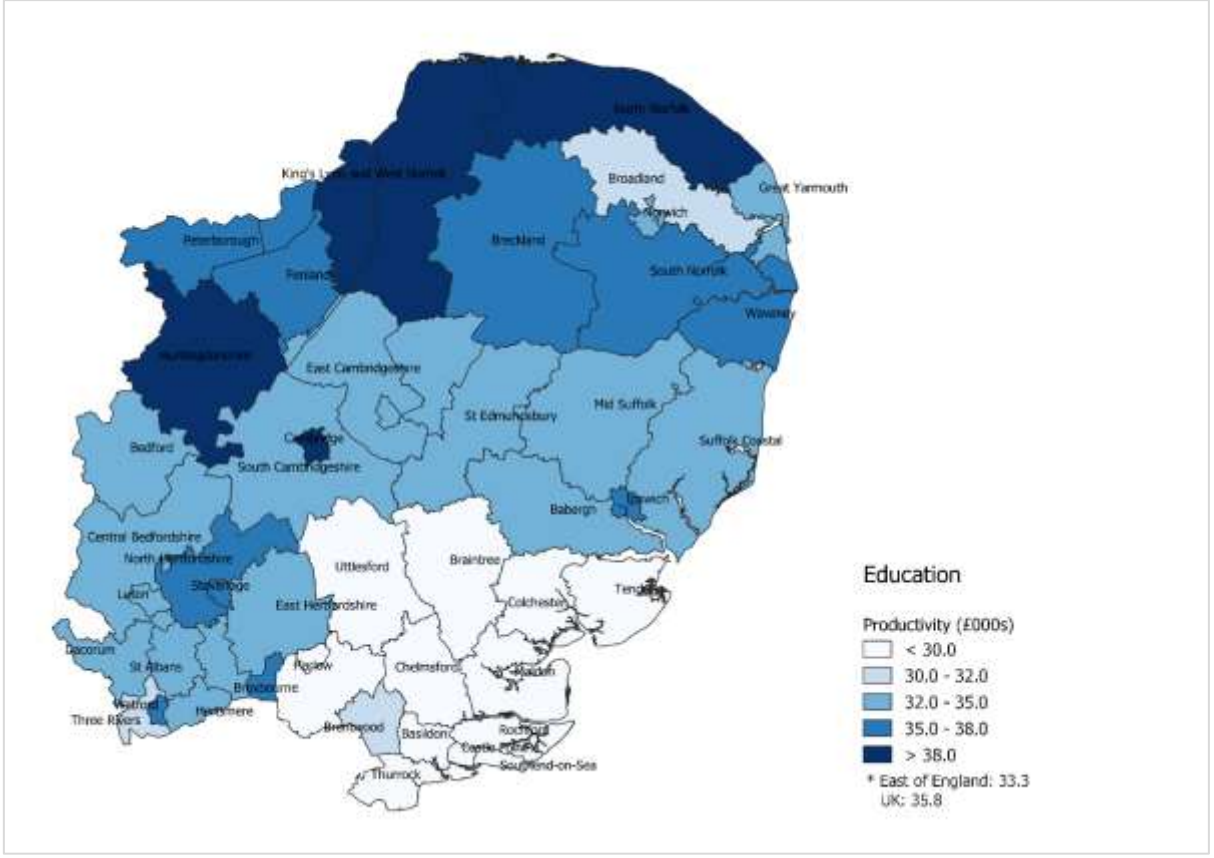


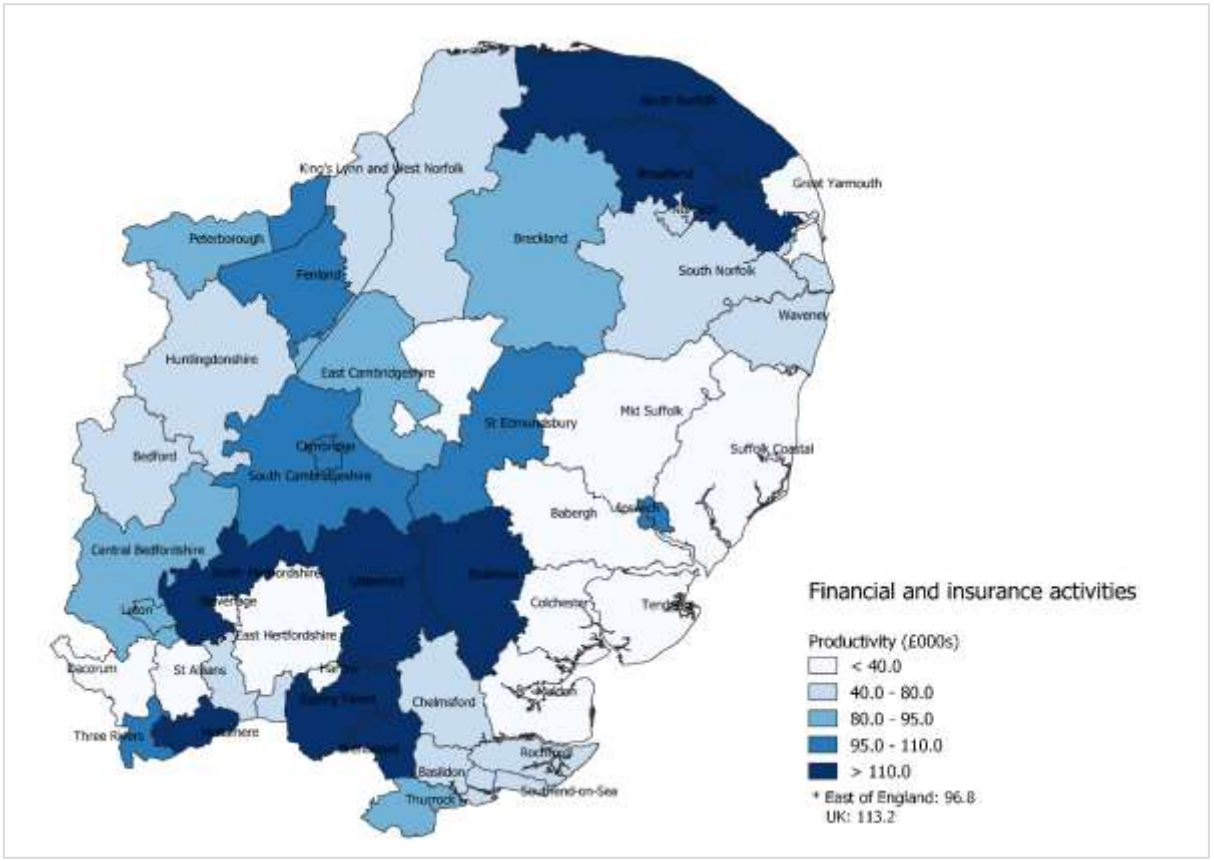


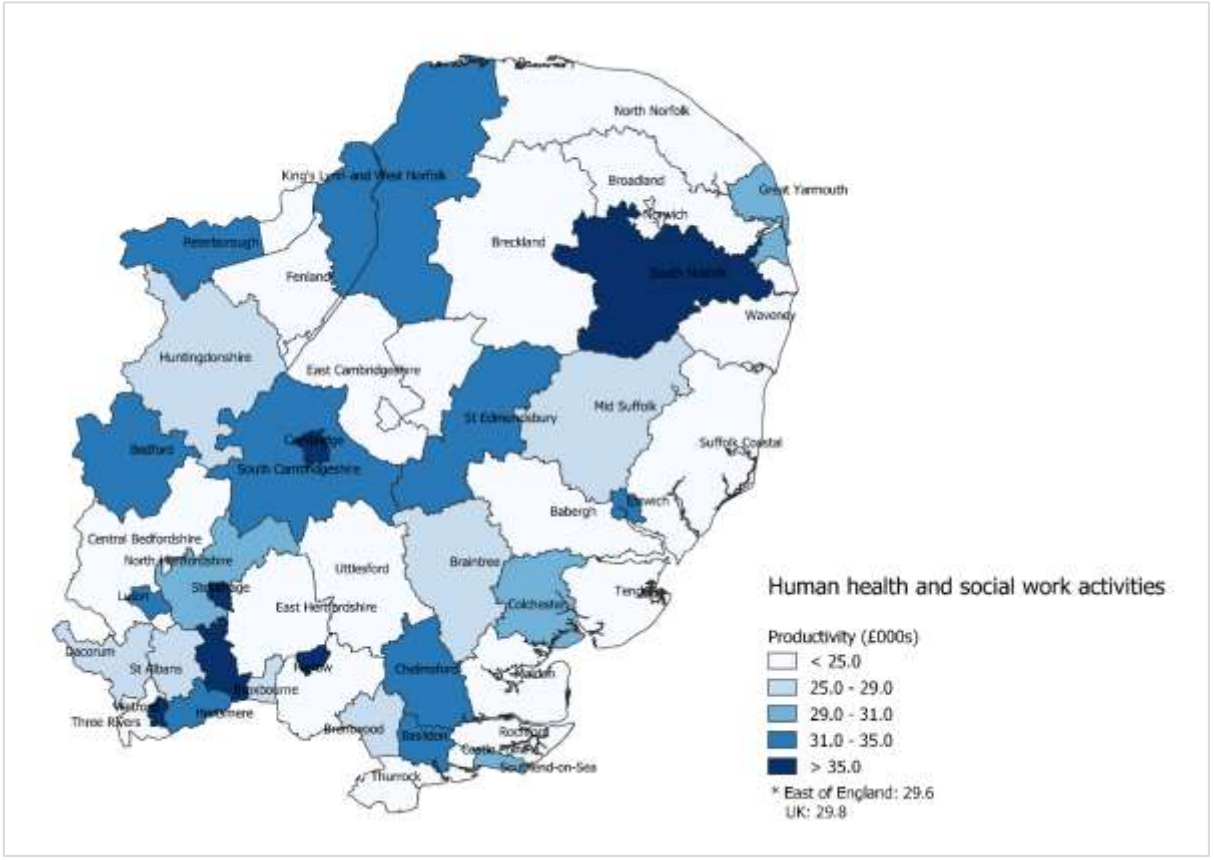

North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
Norwich
Peterborough
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Suffolk Coastal
Bedford
Cambridge
South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
Stevenage
Tendring
Hitchin
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Brentwood
Basildon
Rochford
Thurrock
Southend-on-Sea
Agriculture, mining, electricity, gas, water and waste
Productivity (£000s)
< 50.0
50.0 - 70.0
70.0 - 95.0
95.0 - 150.0
> 150.0
* East of England: 91.2
UK: 69.6

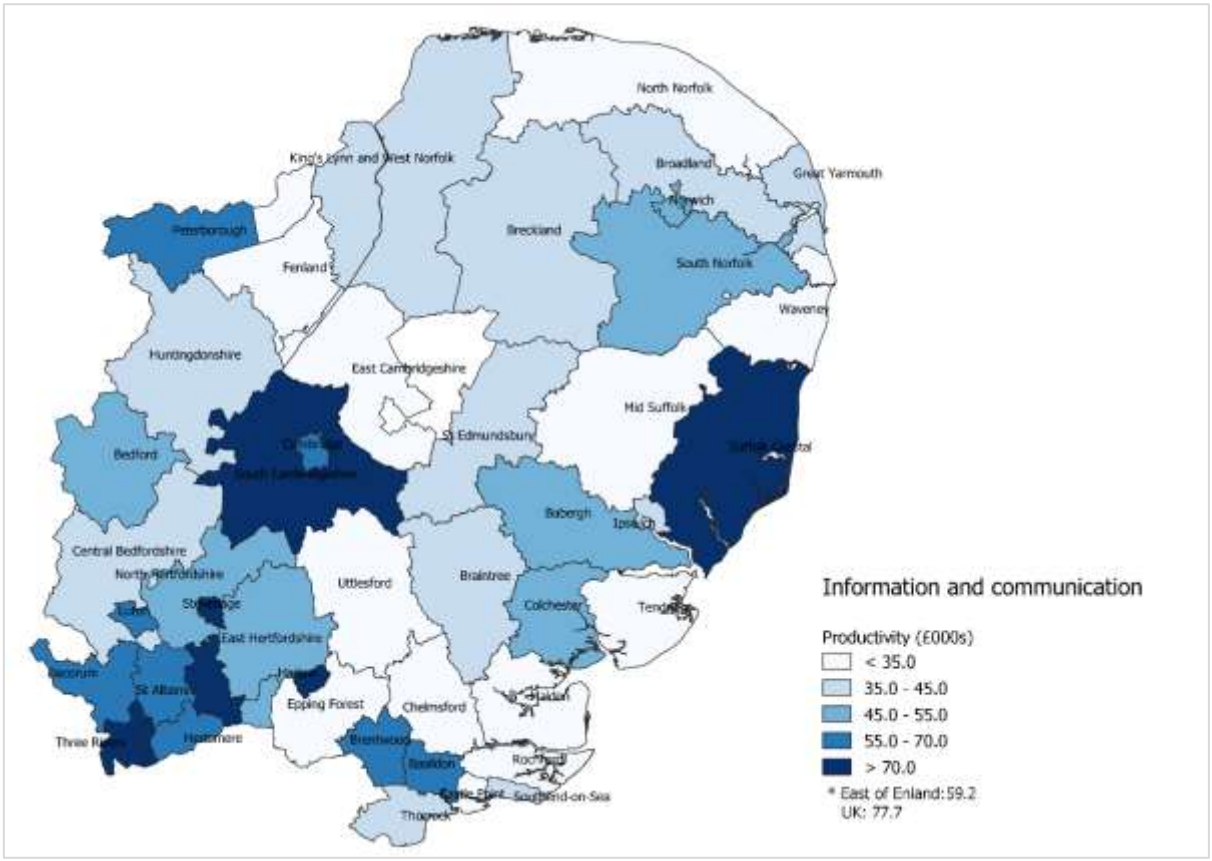

North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
Norwich
Peterborough
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Suffolk Coastal
Bedford
Babergh
Central Bedfordshire
Uttlesford
Braintree
Tendring
Colchester
East Hertfordshire
St Albans
Chelmsford
Brentwood
Rochford
Thurrock
Southend-on-Sea
Arts & Recreation
Productivity (£000s)
< 20.0
20.0 - 25.0
25.0 - 28.0
28.0 - 33.0
> 33.0
* East of England: 28.9
UK: 32.4


North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
Peterborough
Fenland
Breckland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
St Edmundsbury
Mid Suffolk
Cambridge
Suffolk Coastal
South Cambridgeshire
Babergh
Central Bedfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Three Rivers
Thurrock
Southend-on-Sea
Construction
Productivity (£000s)
< 45.0
45.0 - 50.0
50.0 - 55.0
55.0 - 70.0
> 70.0
* East of England: 52.6
UK: 48.9


Broadland
Great Yarmouth
Peterborough
Breckland
South Norfolk
Waveney
East Cambridgeshire
St Edmundsbury
Mid Suffolk
Suffolk Coastal
South Cambridgeshire
Babergh
Central Bedfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Three Rivers
Basildon
Thurrock
Southend-on-Sea
Education
Productivity (£000s)
< 30.0
30.0 - 32.0
32.0 - 35.0
35.0 - 38.0
> 38.0
* East of England: 33.3
UK: 35.8


King's Lynn and West Norfolk
Great Yarmouth
Peterborough
Fenland
Breckland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Suffolk Coastal
Bedford
South Cambridgeshire
Babergh
Central Bedfordshire
Colchester
Luton
East Hertfordshire
Dacorum
St Albans
Chelmsford
Three Rivers
Basildon
Rochford
Thurrock
Southend-on-Sea
Financial and insurance activities
Productivity (£000s)
< 40.0
40.0 - 80.0
80.0 - 95.0
95.0 - 110.0
> 110.0
* East of England: 96.8
UK: 113.2


North Norfolk
Broadland
Great Yarmouth
Peterborough
Breckland
Fenland
Waveney
Huntingdonshire
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Suffolk Coastal
Bedford
South Cambridgeshire
Babergh
Central Bedfordshire
Braintree
Littlesford
Colchester
East Hertfordshire
Dacorum
St Albans
Chelmsford
Three Rivers
Basildon
Thurrock
Human health and social work activities
Productivity (£000s)
< 25.0
25.0 - 29.0
29.0 - 31.0
31.0 - 35.0
> 35.0
* East of England: 29.6
UK: 29.8


North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
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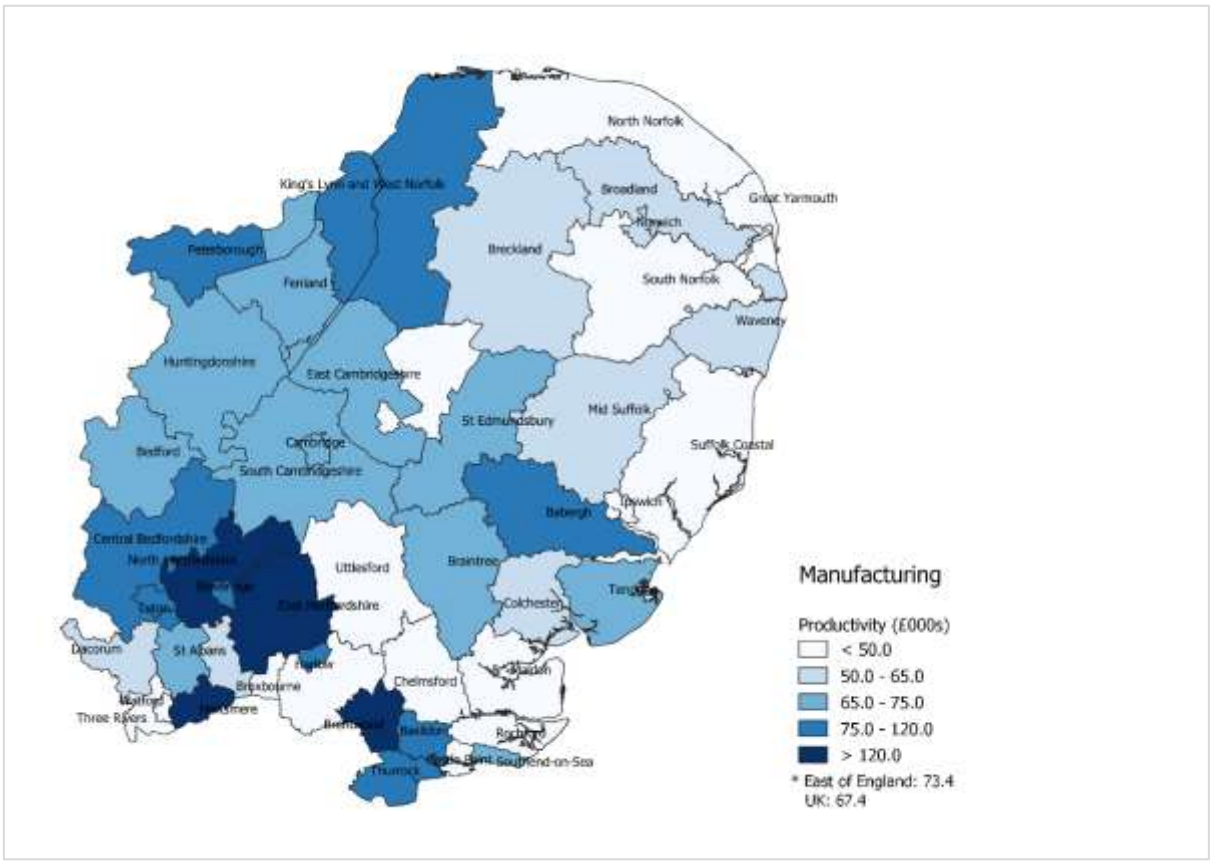
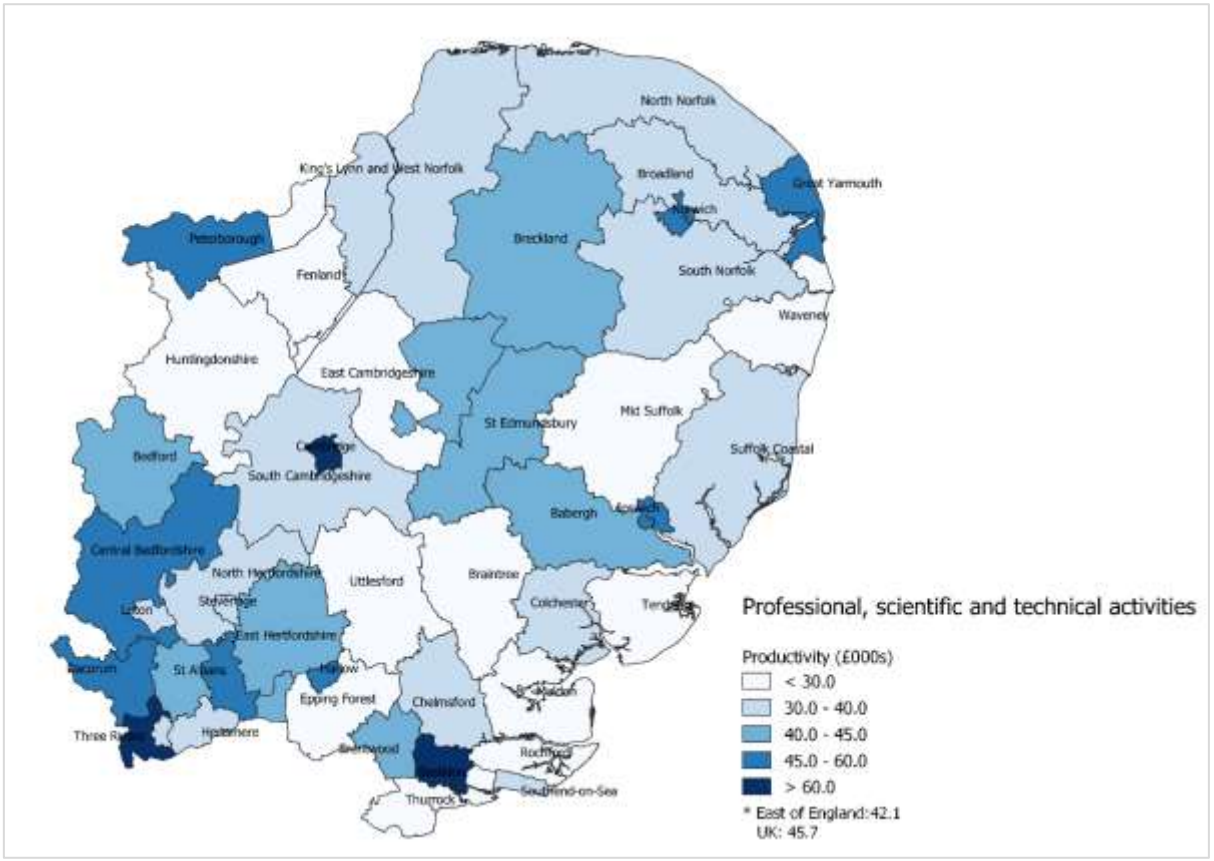
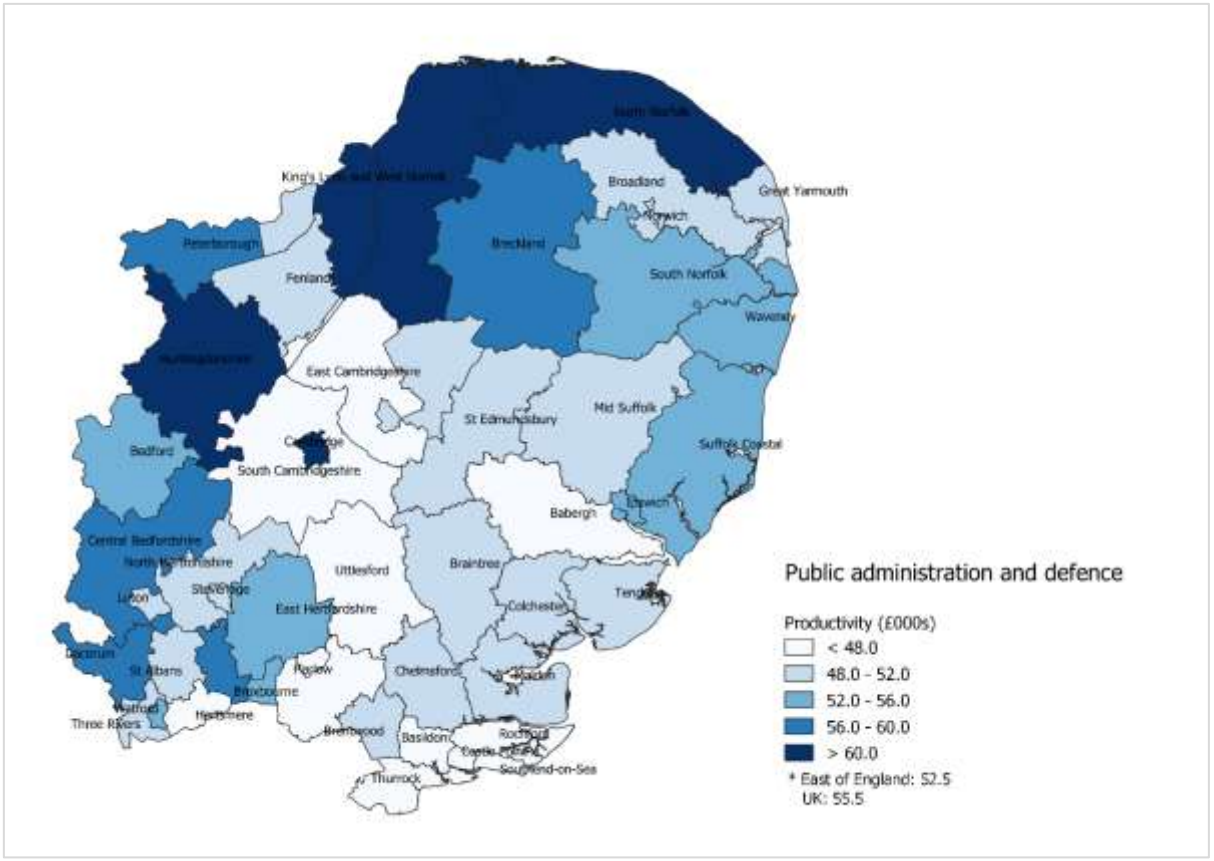
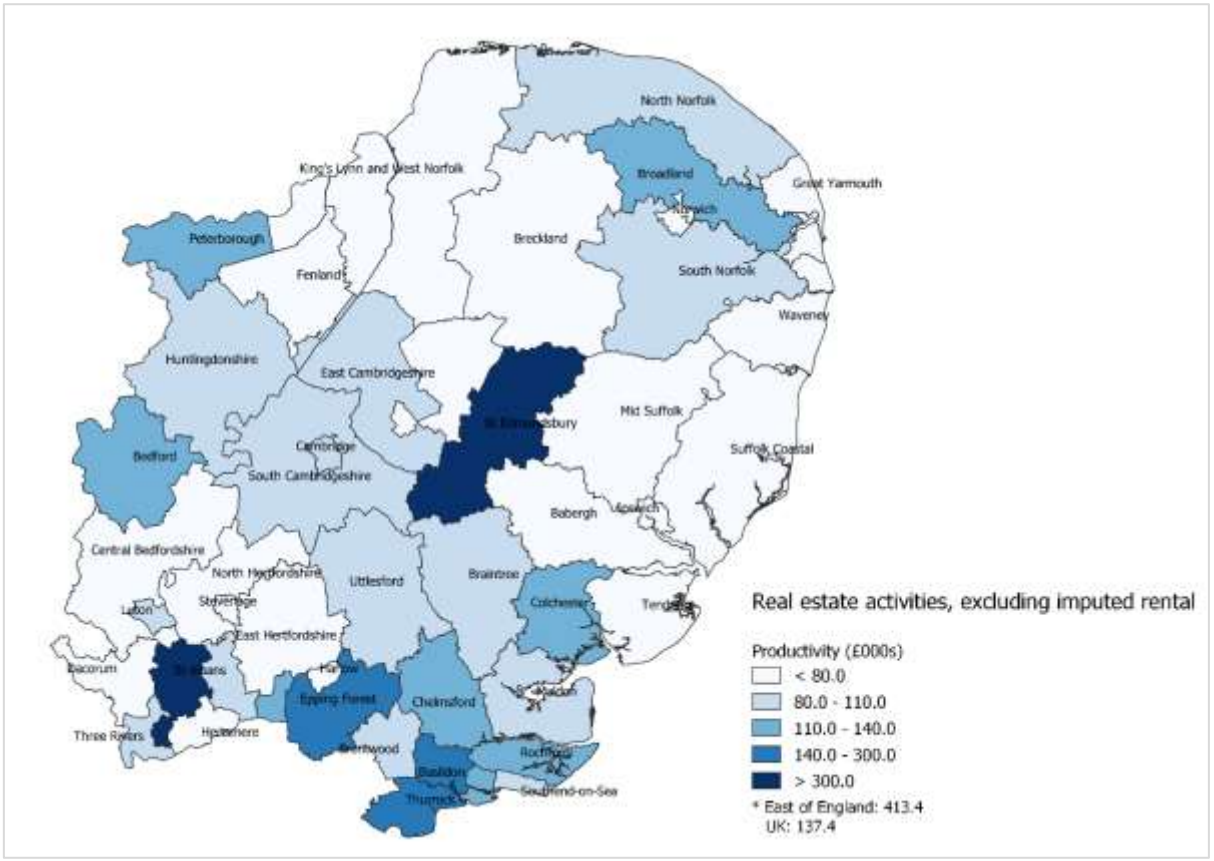
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Bedford
Babergh
Ipswich
Central Bedfordshire
Uttlesford
Braintree
Colchester
Tendring
East Hertfordshire
St Albans
Epping Forest
Chelmsford
Brentwood
Basildon
Rochford
Southend-on-Sea
Thurrock
Information and communication
Productivity (£000s)
< 35.0
35.0 - 45.0
45.0 - 55.0
55.0 - 70.0
> 70.0
* East of Enland: 59.2
UK: 77.7


North Norfolk
Broadland
Great Yarmouth
Norwich
Breckland
South Norfolk
Waveney
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Suffolk Coastal
Babergh
Uttlesford
Braintree
Colchester
St Albans
Chelmsford
Basildon
Southend-on-Sea
Manufacturing
Productivity (£000s)
< 50.0
50.0 - 65.0
65.0 - 75.0
75.0 - 120.0
> 120.0
* East of England: 73.4
UK: 67.4


North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
Norwich
Peterborough
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Suffolk Coastal
Bedford
South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
Stevenage
Colchester
Luton
East Hertfordshire
St Albans
Harlow
Epping Forest
Chelmsford
Three Rivers
Hertsmere
Rochford
Thurrock
Southend-on-Sea
Professional, scientific and technical activities
Productivity (£000s)
< 30.0
30.0 - 40.0
40.0 - 45.0
45.0 - 60.0
> 60.0
* East of England:42.1
UK: 45.7


Broadland
Great Yarmouth
Norwich
Peterborough
Breckland
Fenland
South Norfolk
Waveney
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Suffolk Coastal
Bedford
South Cambridgeshire
Babergh
Uttlesford
Braintree
Stevenage
Colchester
East Hertfordshire
St Albans
Harlow
Chelmsford
Three Rivers
Hertsmere
Basildon
Thurrock
Public administration and defence
Productivity (£000s)
< 48.0
48.0 - 52.0
52.0 - 56.0
56.0 - 60.0
> 60.0
* East of England: 52.5
UK: 55.5


North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
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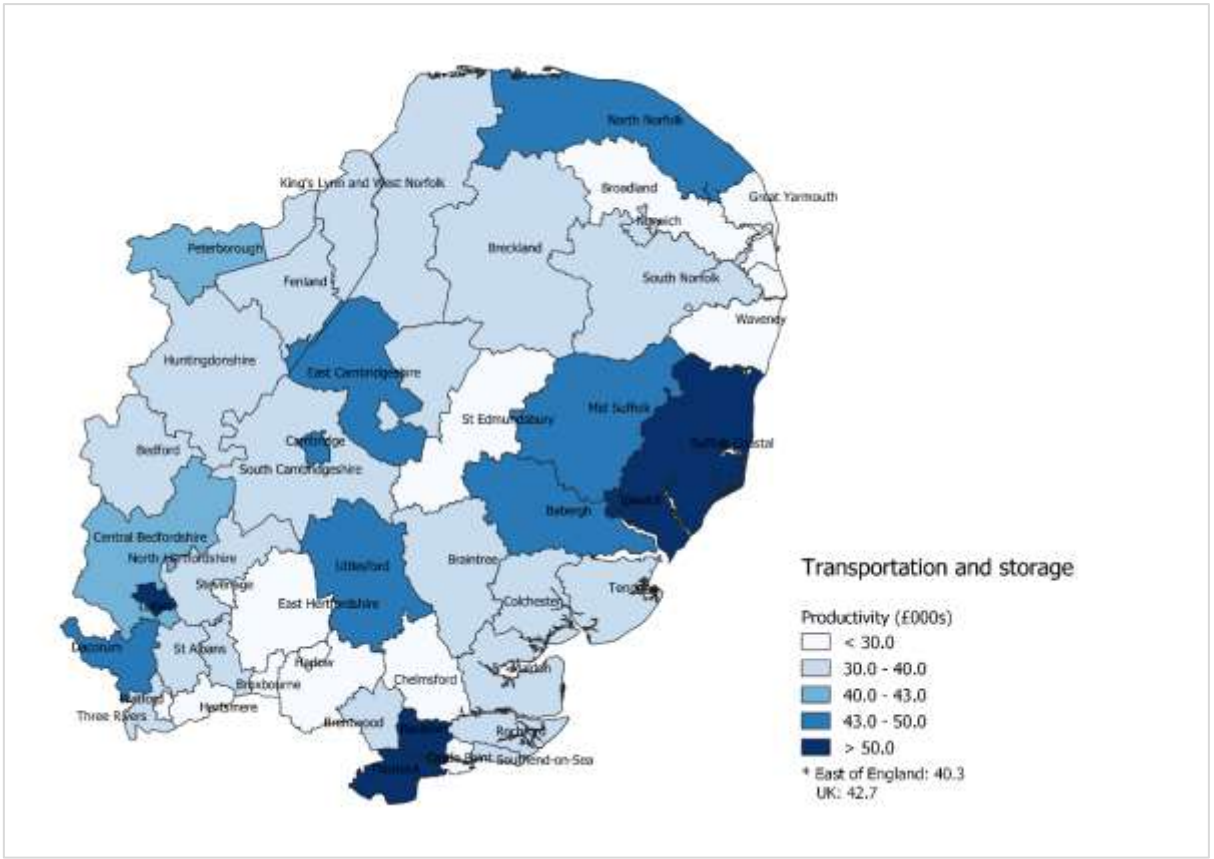
Peterborough
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Suffolk Coastal
Bedford
Cambridge
South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Littlestone
Braintree
Stevenage
Colchester
Tendring
East Hertfordshire
Epping Forest
Chelmsford
Three Rivers
Hertsmere
Brentwood
Rochford
Basildon
Thurrock
Southend-on-Sea
Real estate activities, excluding imputed rental
Productivity (£000s)
< 80.0
80.0 - 110.0
110.0 - 140.0
140.0 - 300.0
> 300.0
* East of England: 413.4
UK: 137.4


North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
Norwich
Peterborough
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
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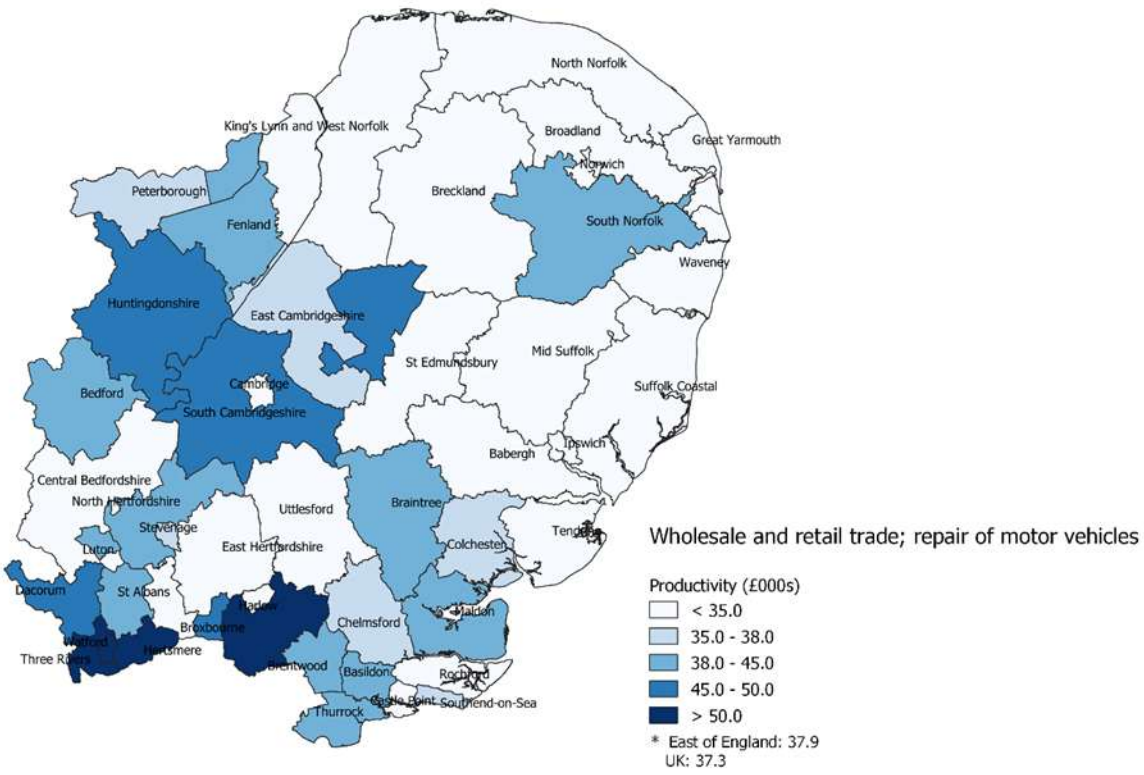
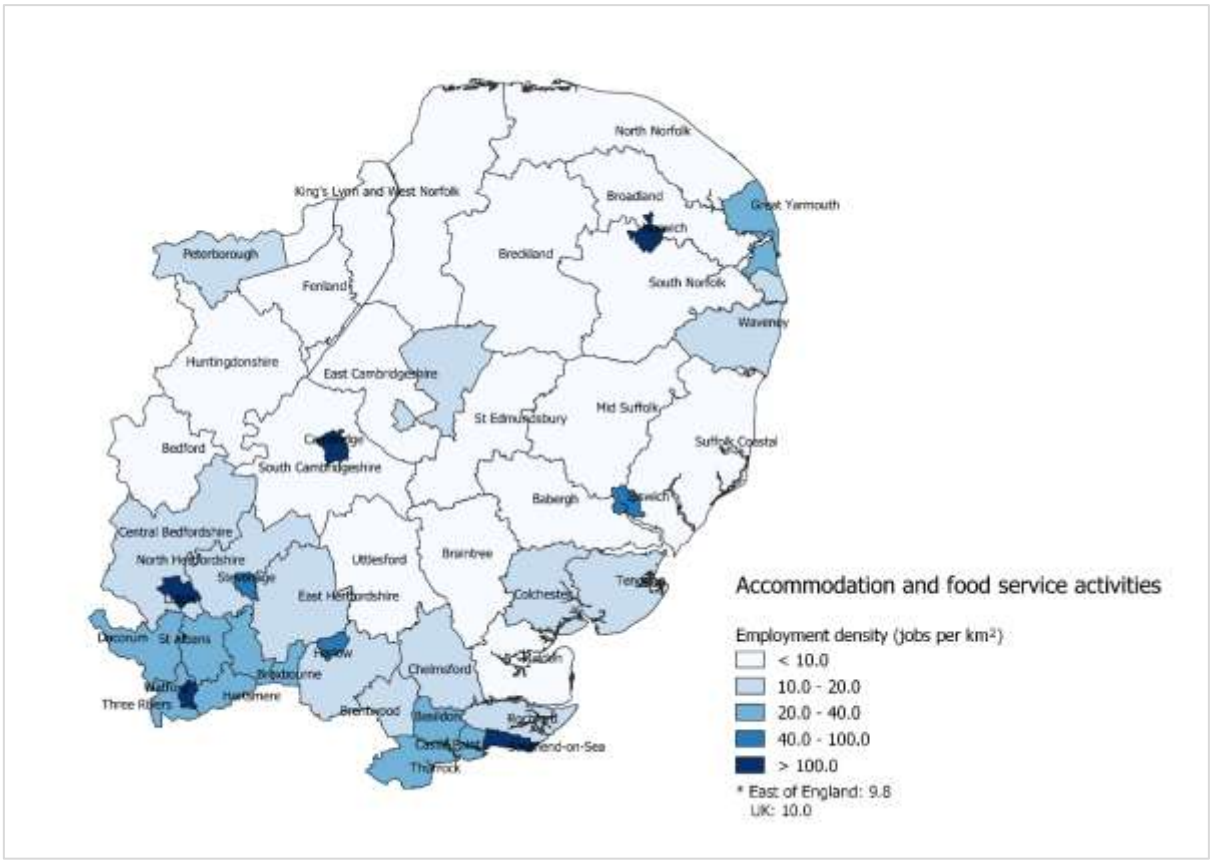
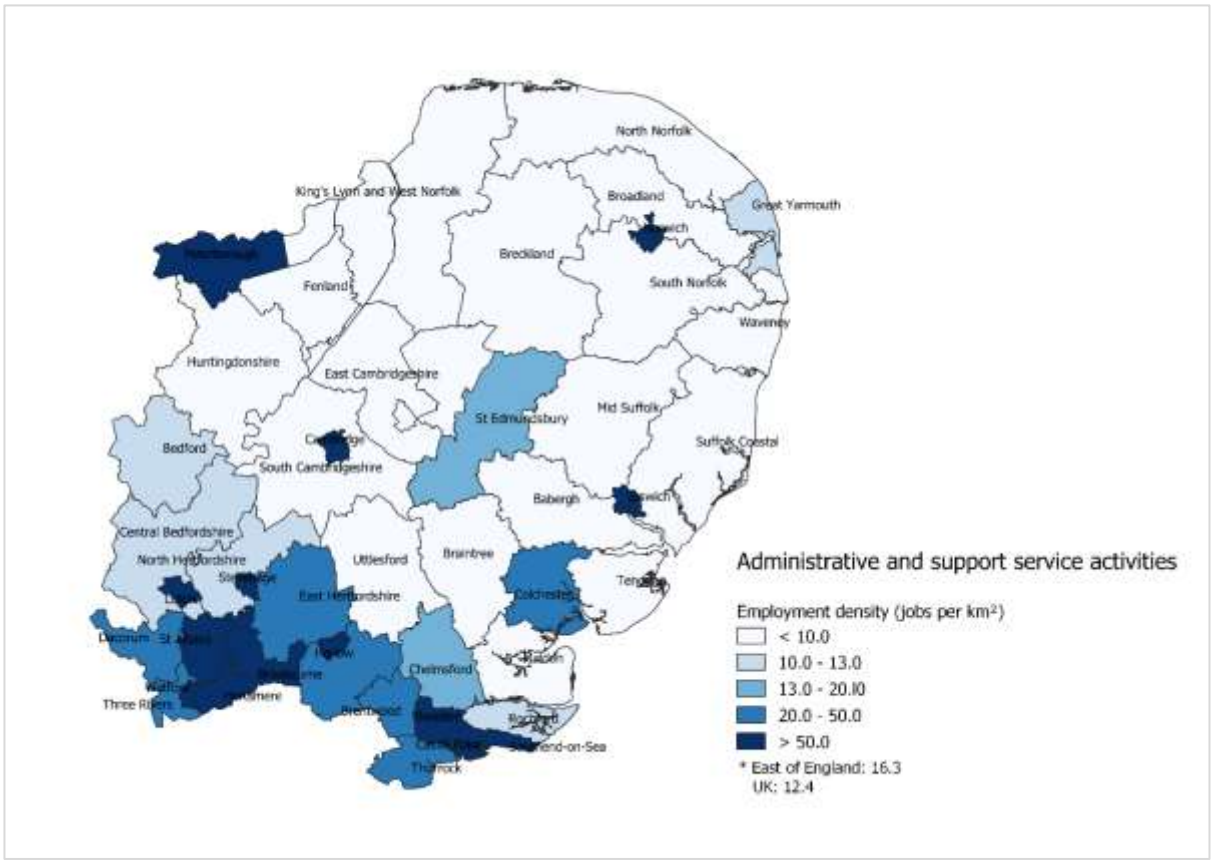
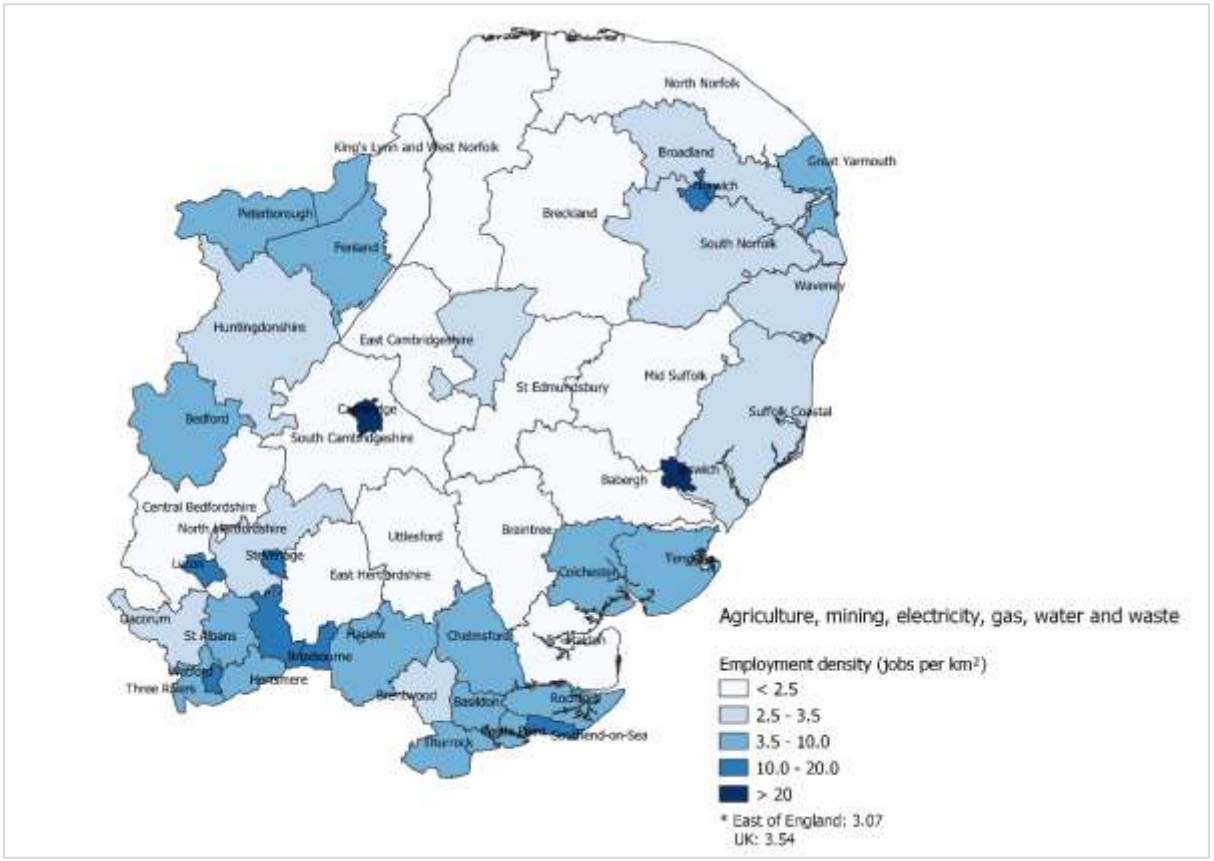
St Edmundsbury
Mid Suffolk
Bedford
Cambridge
South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Braintree
Stevenage
Colchester
East Hertfordshire
St Albans
Chelmsford
Three Rivers
Hertsmere
Brentwood
Southend-on-Sea
Transportation and storage
Productivity (£000s)
< 30.0
30.0 - 40.0
40.0 - 43.0
43.0 - 50.0
> 50.0
* East of England: 40.3
UK: 42.7

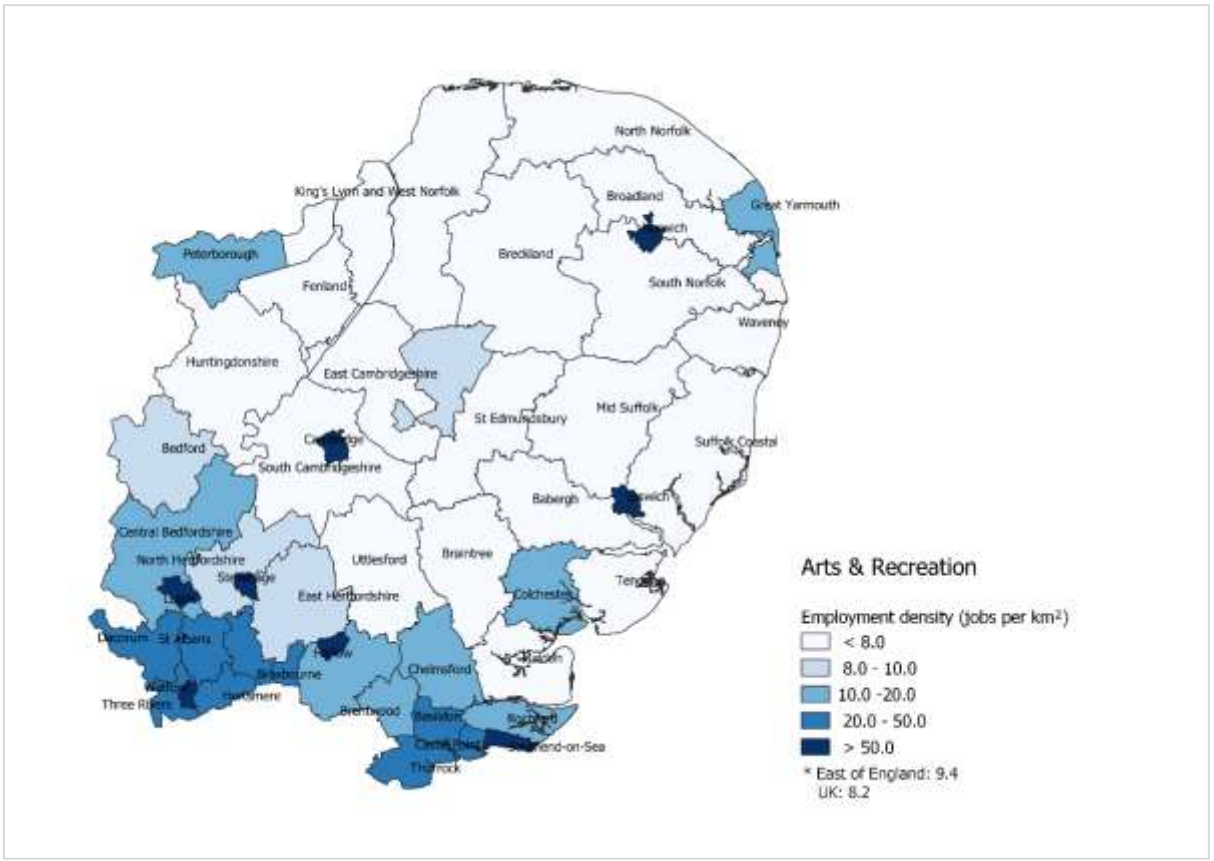

North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
Norwich
Peterborough
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
Mid Suffolk
St Edmundsbury
Cambridge
Bedford
Suffolk Coastal
South Cambridgeshire
Ipswich
Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
Stevenage
Tendring
Luton
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Broxbourne
Three Rivers
Brentwood
Basildon
Rochford
Thurrock
Southend-on-Sea
Wholesale and retail trade; repair of motor vehicles
Productivity (£000s)
< 35.0
35.0 - 38.0
38.0 - 45.0
45.0 - 50.0
> 50.0
* East of England: 37.9
UK: 37.3

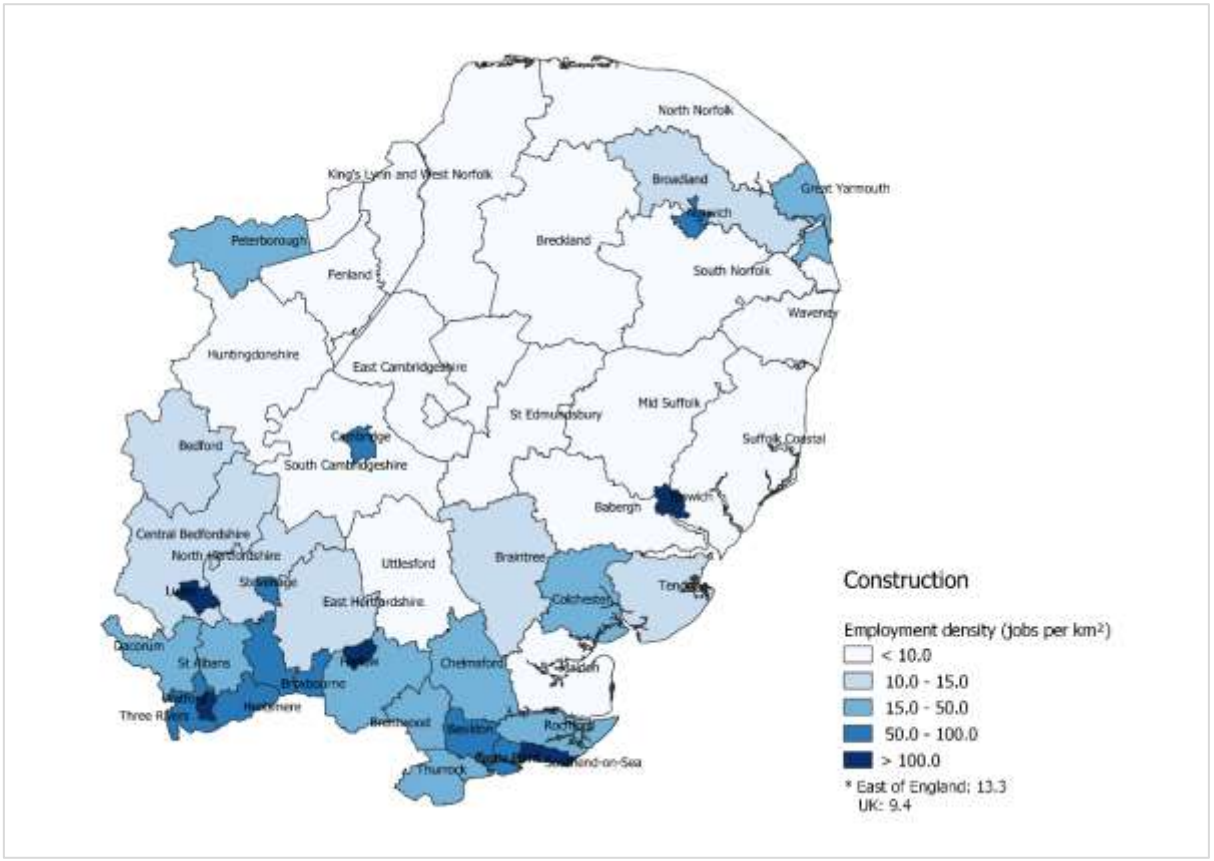
A.2 Employment Density






North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
Peterborough
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
St Edmundsbury
Mid Suffolk
Bedford
Suffolk Coastal
South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
St Albans
Chelmsford
Three Rivers
Brentwood
Basildon
Rochford
Thurrock
Southend-on-Sea
Agriculture, mining, electricity, gas, water and waste
Employment density (jobs per km²)
< 2.5
2.5 - 3.5
3.5 - 10.0
10.0 - 20.0
> 20
* East of England: 3.07
UK: 3.54


North Norfolk
King's Lynn and West Norfolk
Broadland
Great Yarmouth
Peterborough
Breckland
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
St Edmundsbury
Mid Suffolk
Bedford
Suffolk Coastal
South Cambridgeshire
Babergh
Central Bedfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
St Albans
Chelmsford
Three Rivers
Brentwood
Thurrock
Arts & Recreation
Employment density (jobs per km²)
< 8.0
8.0 - 10.0
10.0 -20.0
20.0 - 50.0
> 50.0
* East of England: 9.4
UK: 8.2


North Norfolk
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Fenland
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Huntingdonshire
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Mid Suffolk
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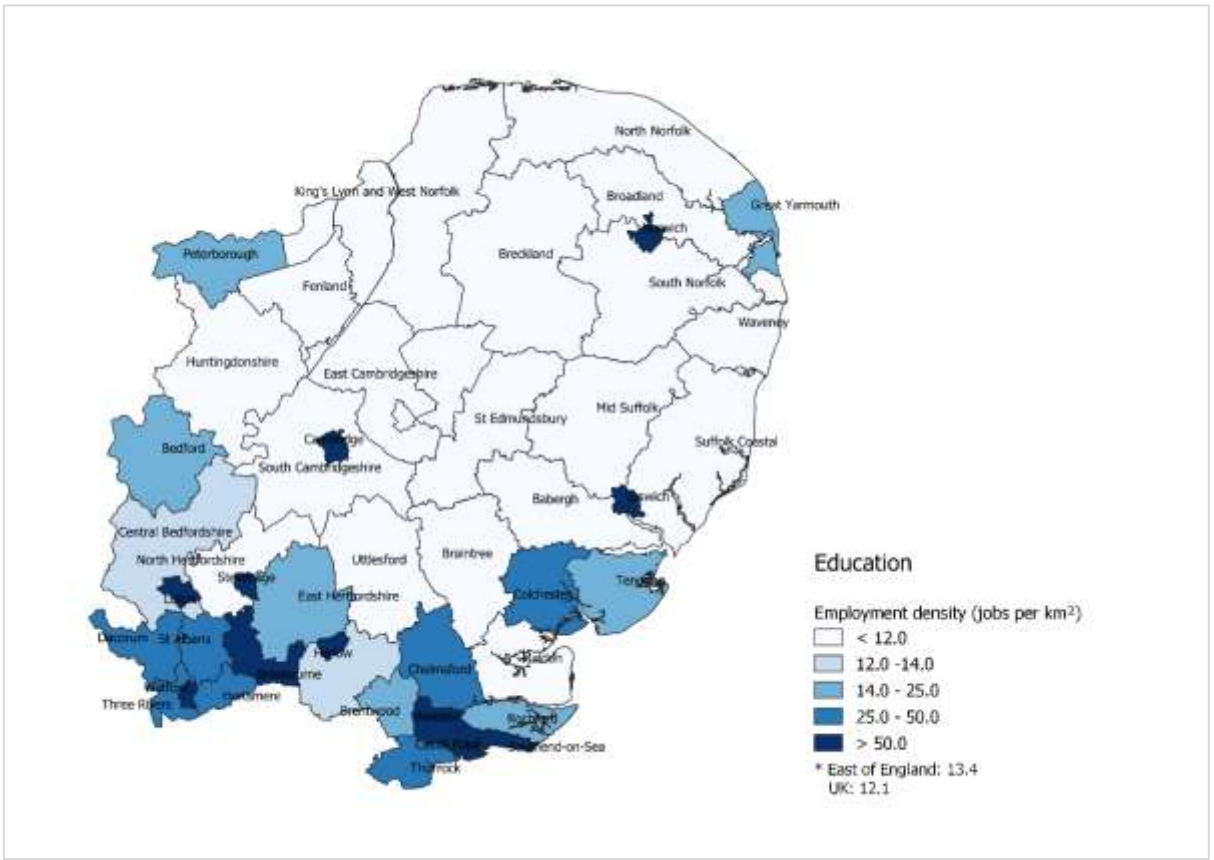
Suffolk Coastal
South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Three Rivers
Brentwood
Rochford
Thurrock
Construction
Employment density (jobs per km²)
< 10.0
10.0 - 15.0
15.0 - 50.0
50.0 - 100.0
> 100.0
* East of England: 13.3
UK: 9.4


North Norfolk
King's Lynn and West Norfolk
Broadland
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Fenland
South Norfolk
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Huntingdonshire
East Cambridgeshire
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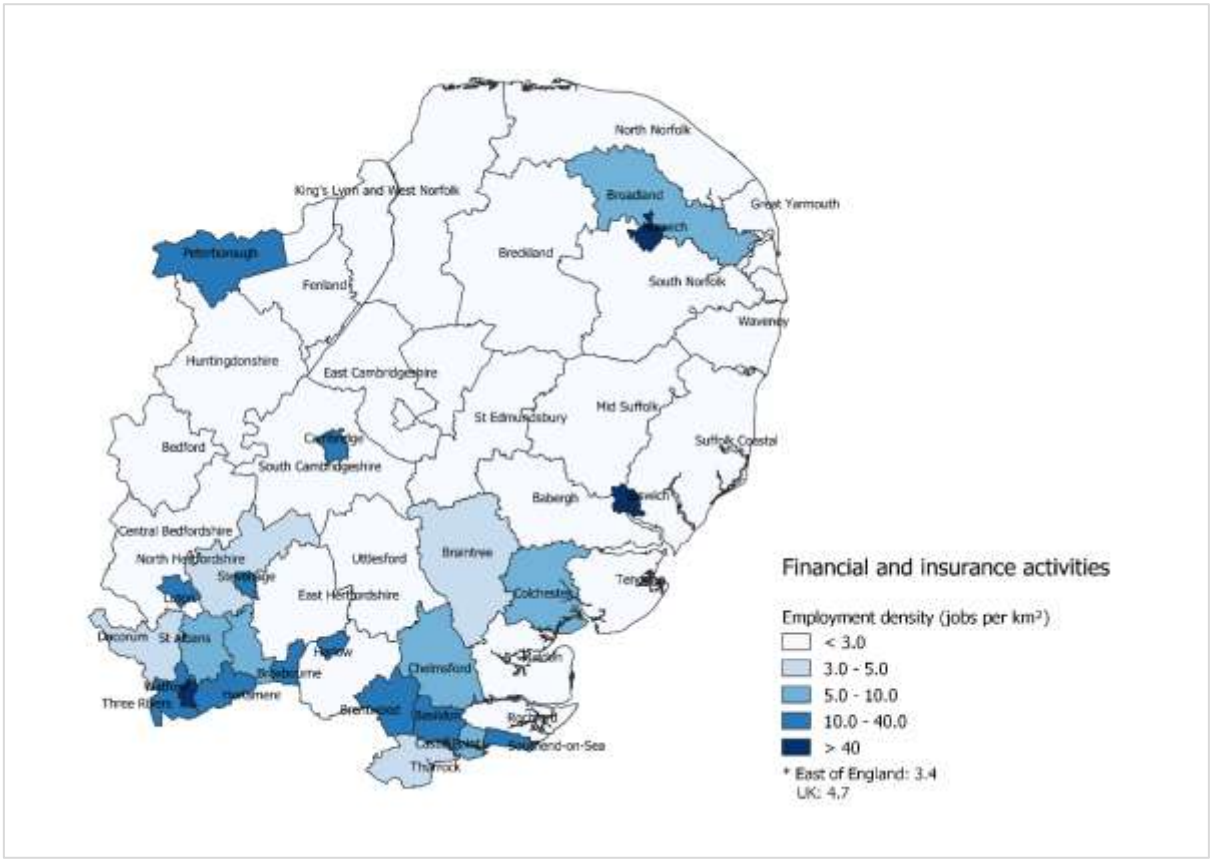
Suffolk Coastal
South Cambridgeshire
Babergh
Central Bedfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
Chelmsford
Brentwood
Thurrock
Education
Employment density (jobs per km²)
< 12.0
12.0 -14.0
14.0 - 25.0
25.0 - 50.0
> 50.0
* East of England: 13.4
UK: 12.1


North Norfolk
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Breckland
Fenland
South Norfolk
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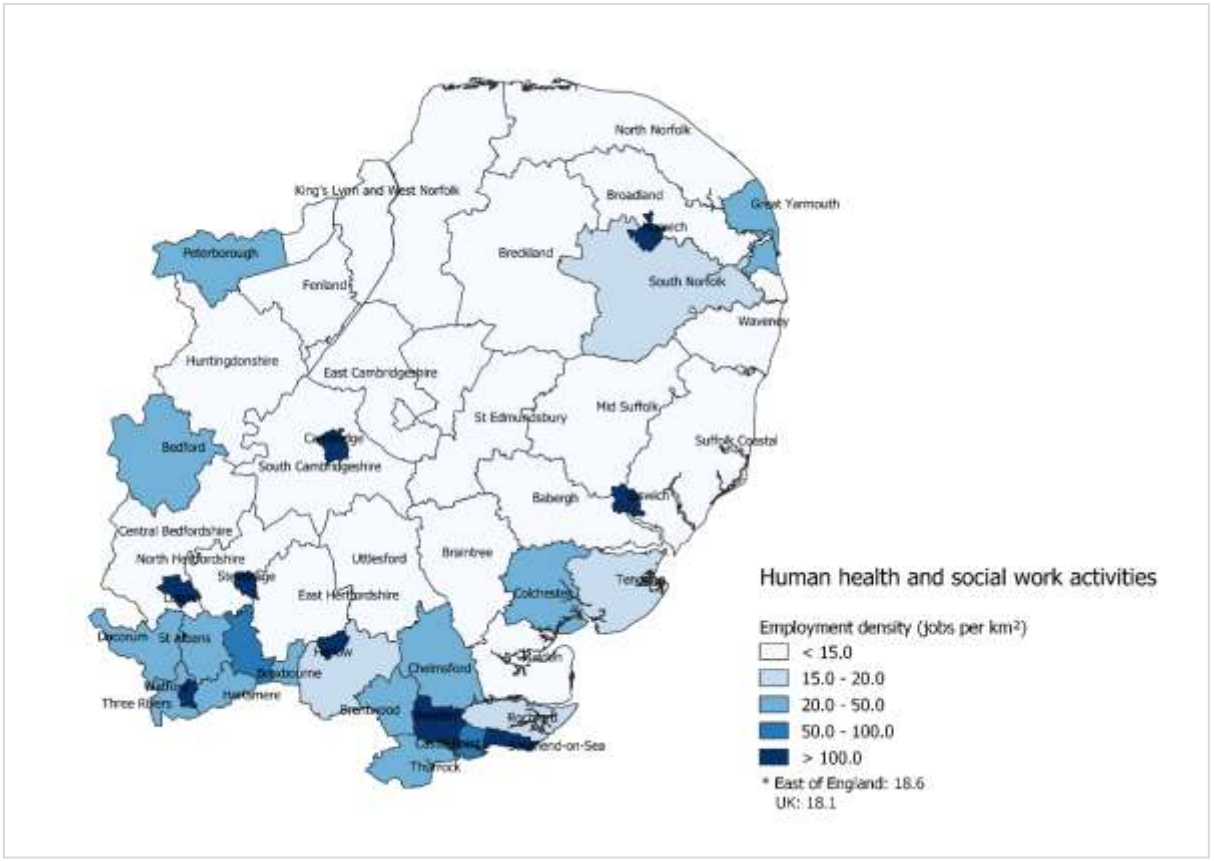
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Three Rivers
Brentwood
Southend-on-Sea
Thurrock
Financial and insurance activities
Employment density (jobs per km²)
< 3.0
3.0 - 5.0
5.0 - 10.0
10.0 - 40.0
> 40
* East of England: 3.4
UK: 4.7


North Norfolk
King's Lynn and West Norfolk
Broadland
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Peterborough
Breckland
Fenland
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East Cambridgeshire
Mid Suffolk
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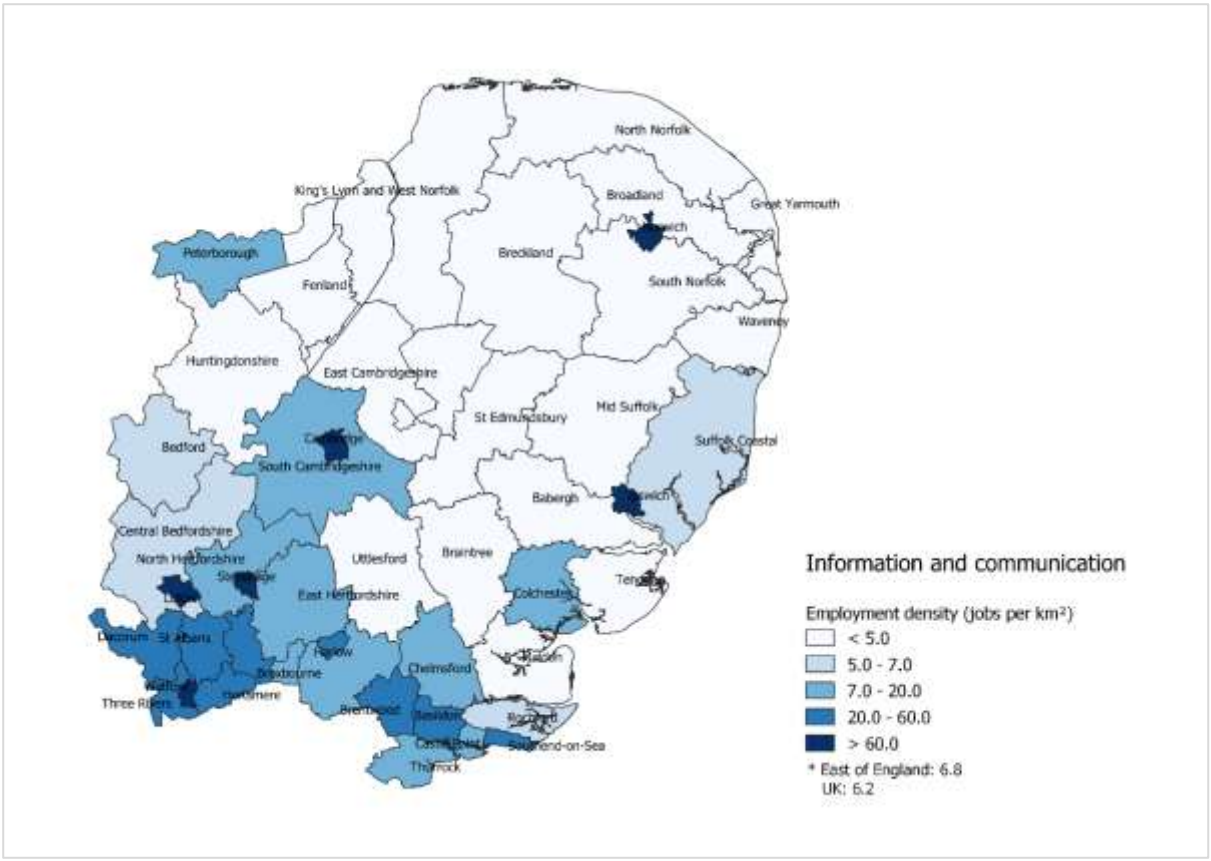
Babergh
Central Bedfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Three Rivers
Brentwood
Southend-on-Sea
Thurrock
Human health and social work activities
Employment density (jobs per km²)
< 15.0
15.0 - 20.0
20.0 - 50.0
50.0 - 100.0
> 100.0
* East of England: 18.6
UK: 18.1


North Norfolk
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Fenland
South Norfolk
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Huntingdonshire
East Cambridgeshire
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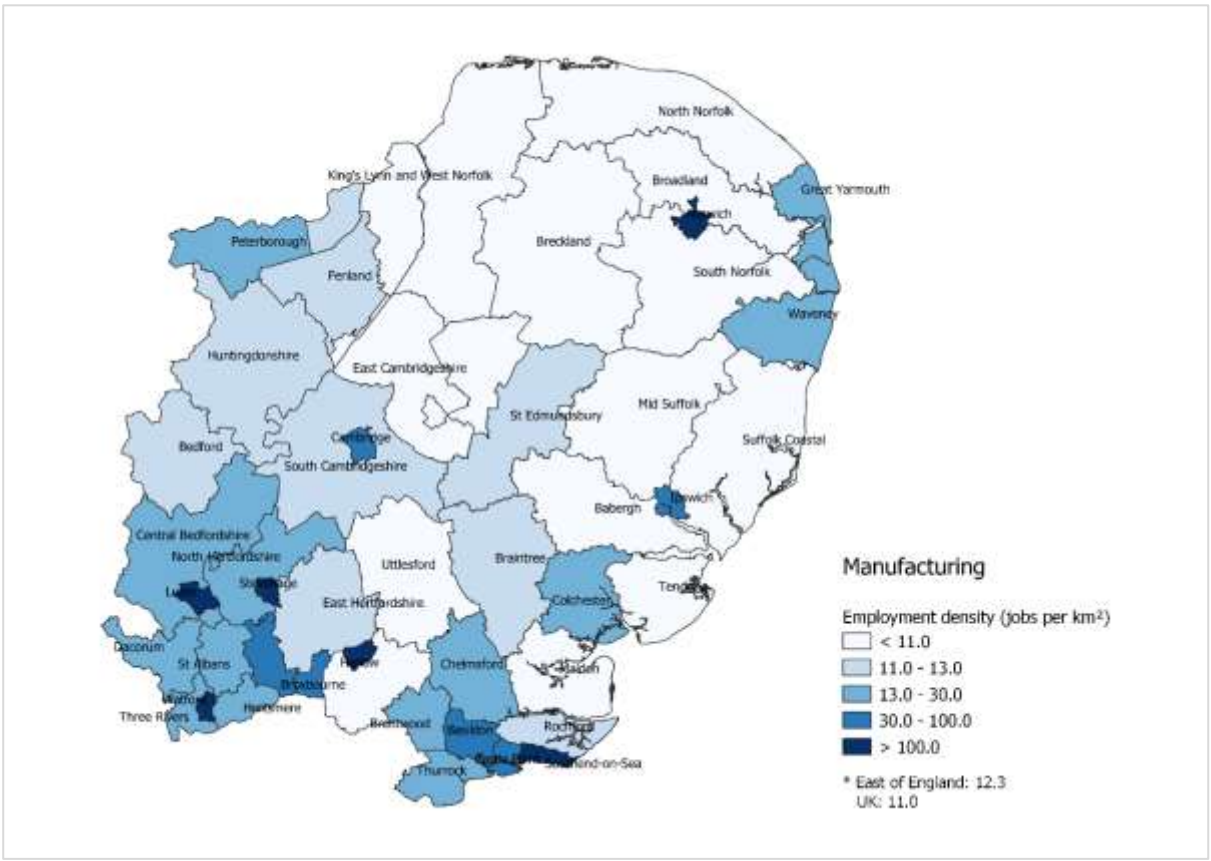
Bedford
South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
St Albans
Chelmsford
Three Rivers
Southend-on-Sea
Thurrock
Information and communication
Employment density (jobs per km²)
< 5.0
5.0 - 7.0
7.0 - 20.0
20.0 - 60.0
> 60.0
* East of England: 6.8
UK: 6.2


North Norfolk
King's Lynn and West Norfolk
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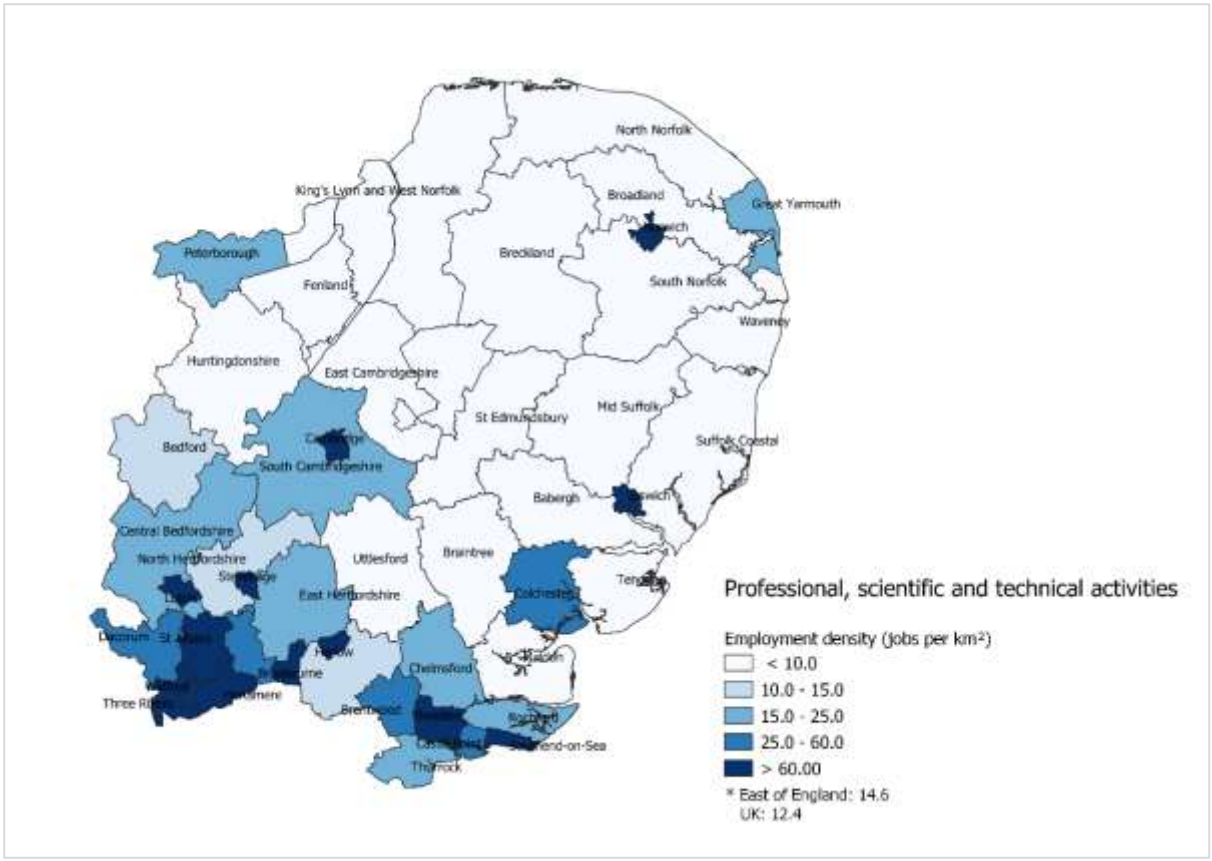
Fenland
South Norfolk
Waveney
Huntingdonshire
East Cambridgeshire
St Edmundsbury
Mid Suffolk
Suffolk Coastal
Bedford
South Cambridgeshire
Babergh
Central Bedfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
St Albans
Chelmsford
Three Rivers
Thurrock
Manufacturing
Employment density (jobs per km²)
< 11.0
11.0 - 13.0
13.0 - 30.0
30.0 - 100.0
> 100.0
* East of England: 12.3
UK: 11.0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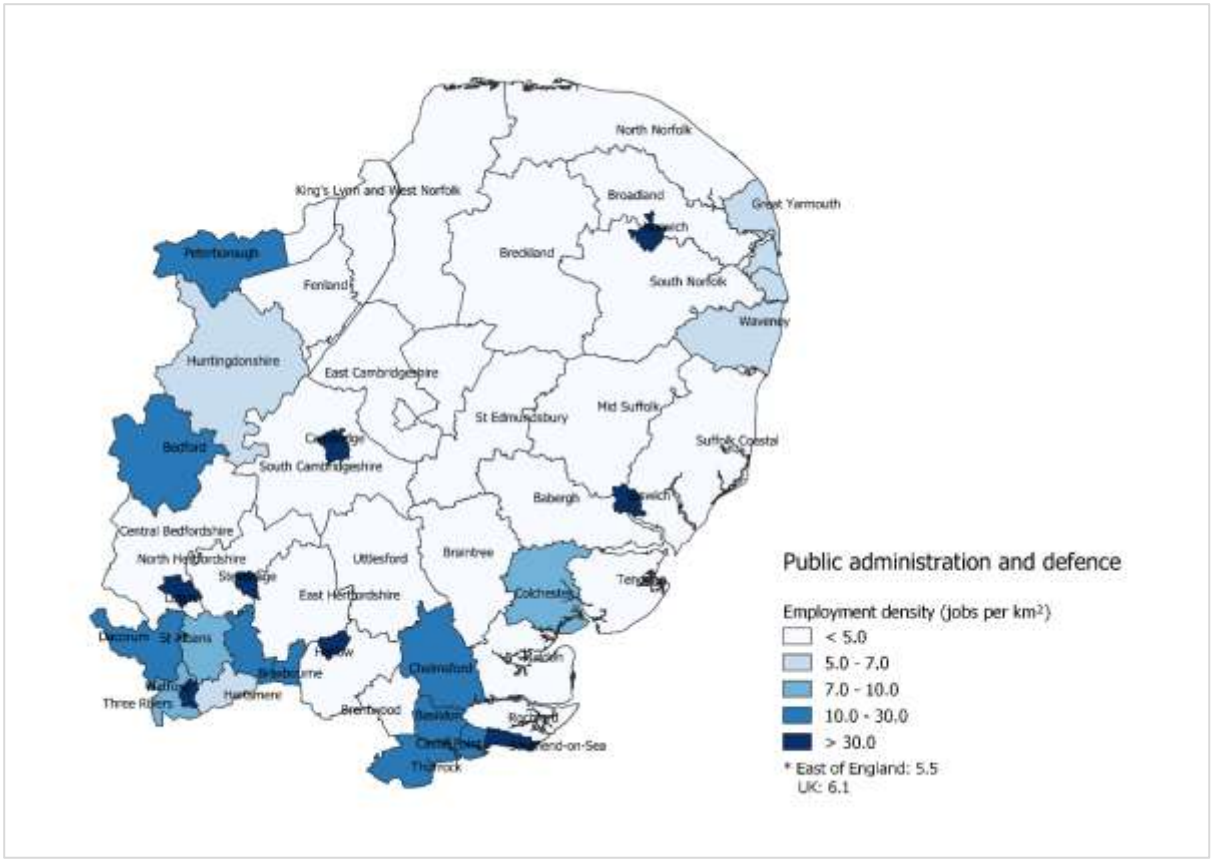
South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
Chelmsford
Three Rivers
Brentwood
Thurrock
Professional, scientific and technical activities
Employment density (jobs per km²)
< 10.0
10.0 - 15.0
15.0 - 25.0
25.0 - 60.0
> 60.00
* East of England: 14.6
UK: 12.4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South Cambridgeshire
Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
St Albans
Chelmsford
Three Rivers
Hertsmere
Brentwood
Thurrock
Public administration and defence
Employment density (jobs per km²)
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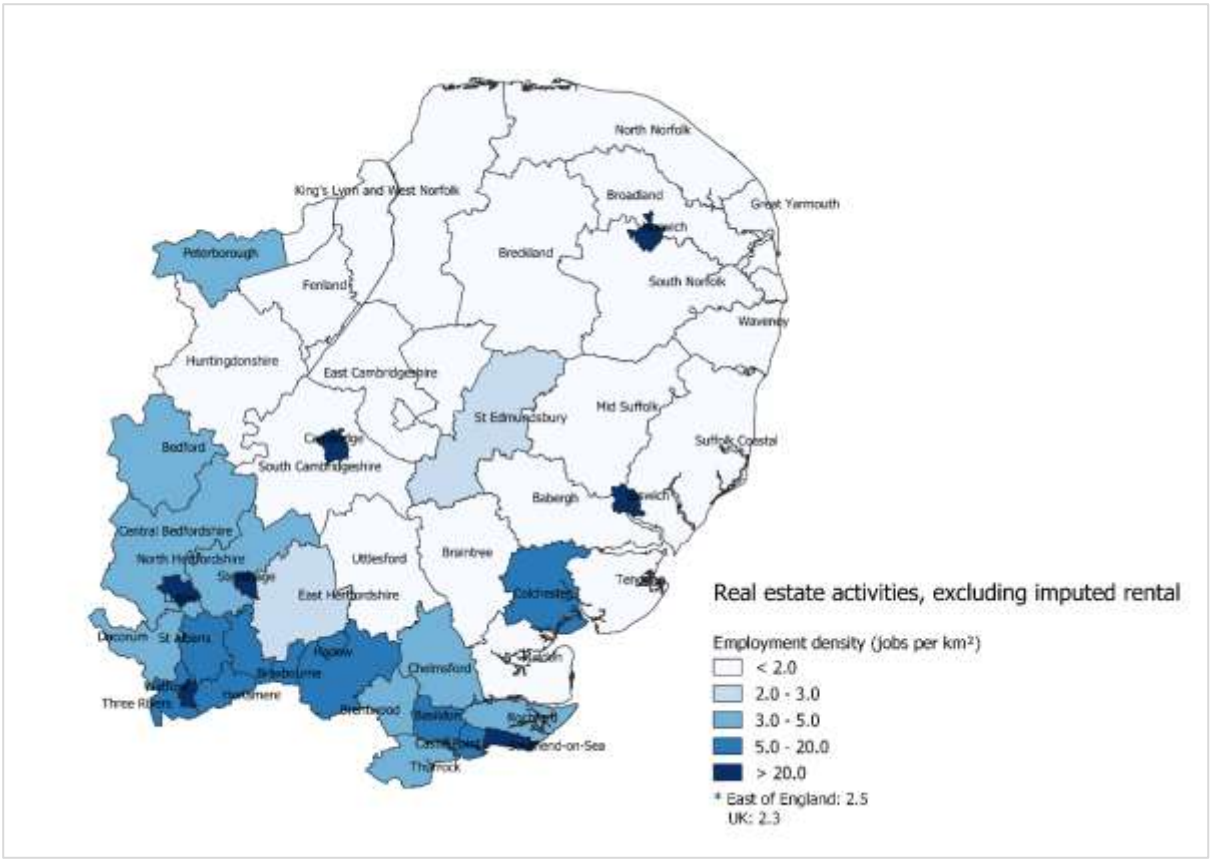
7.0 - 10.0
10.0 - 30.0
> 30.0
* East of England: 5.5
UK: 6.1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Braintree
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Three Rivers
Brentwood
Basildon
Southend-on-Sea
Thurrock
Real estate activities, excluding imputed rental
Employment density (jobs per km²)
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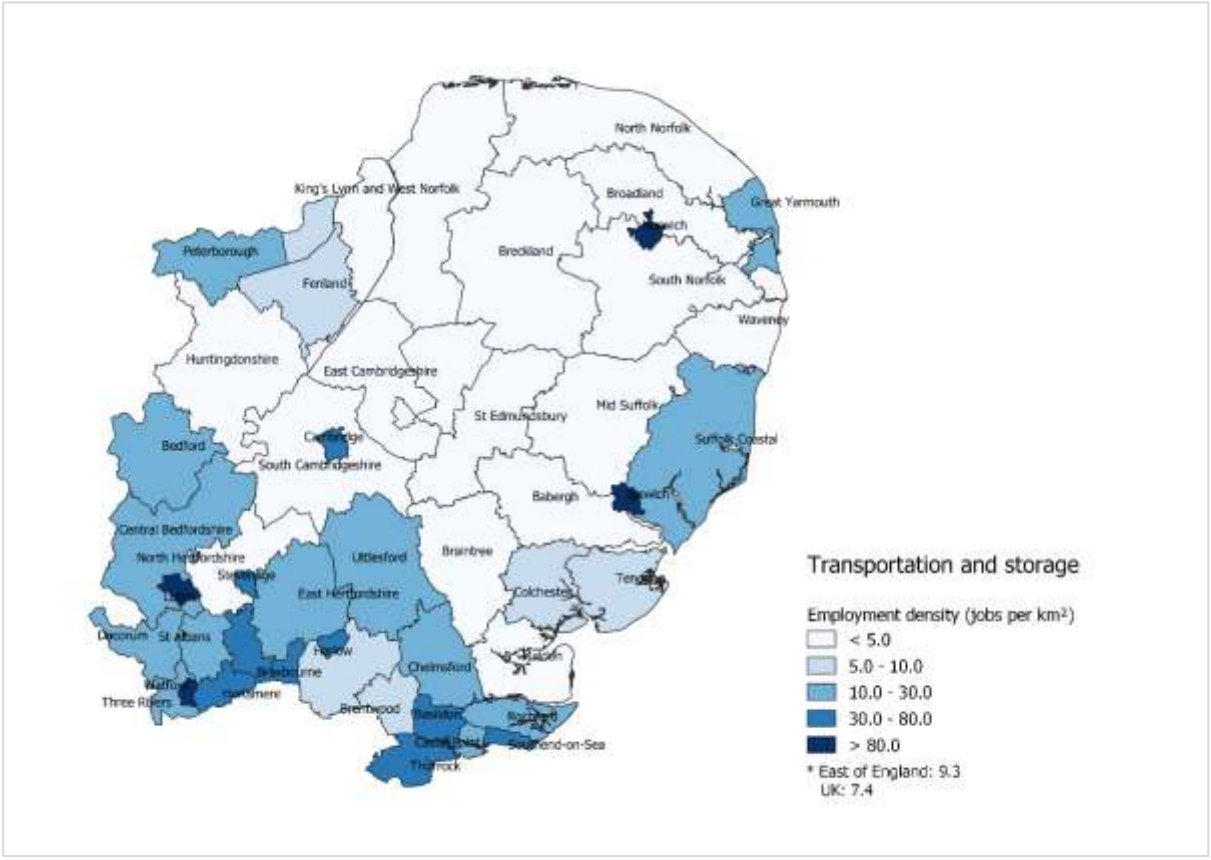
2.0 - 3.0
3.0 - 5.0
5.0 - 20.0
> 20.0
* East of England: 2.5
UK: 2.3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Braintree
East Hertfordshire
Colchester
Dacorum
St Albans
Chelmsford
Three Rivers
Brentwood
Basildon
Southend-on-Sea
Thurrock
Transportation and storage
Employment density (jobs per km²)
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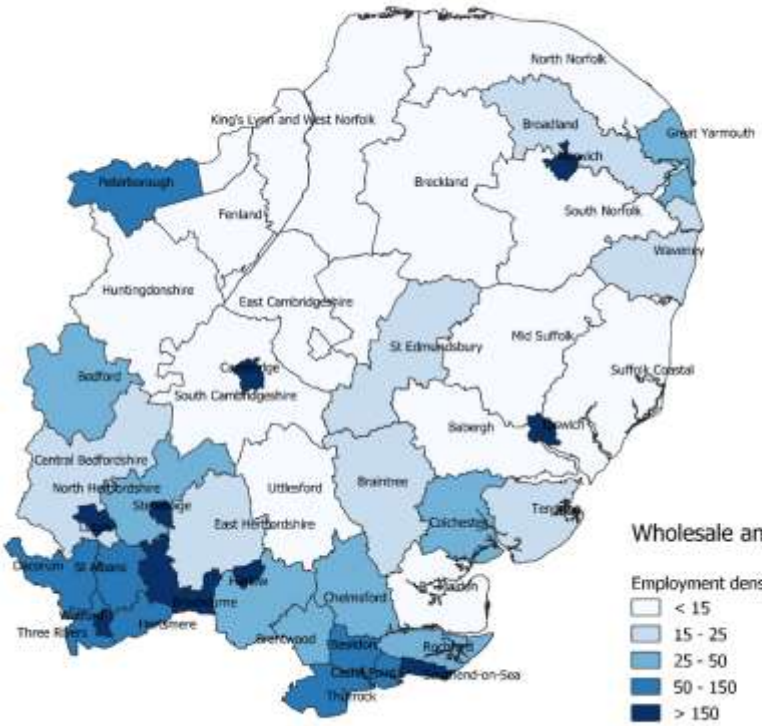
10.0 - 30.0
30.0 - 80.0
> 80.0
* East of England: 9.3
UK: 7.4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Suffolk Coastal
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Babergh
Central Bedfordshire
North Hertfordshire
Uttlesford
Braintree
East Hertfordshire
Colchester
Chelmsford
Three Rivers
Rochford
Thurrock
Wholesale and retail trade; repair of motor vehicles
Employment density (jobs per km²)
< 15
15 - 25
25 - 50
50 - 150
> 150
* East of England: 25.8
UK: 20.5

Annex C: Detailed Interventions

LEP initiatives

A major funding source for local development projects are the 'Growth Deals'. Growth Deals between the Government and the LEPs provide capital funding through the Government's Local Growth Fund for local projects or programmes that promote economic growth and job creation. Three stages of funding have been agreed thus far, with the third round completed in 2017. Another major funding tool is the £730m Growing Places Fund, targeted specifically at infrastructure projects.

New Anglia LEP

The New Anglia LEP has identified the following areas as "Priority Places" based on the opportunities they provide for continued growth:

- Ipswich and the surrounding area
- Norwich and the Greater Norwich area
- The Norfolk and Suffolk Energy Coast, including Bacton, Great Yarmouth, Lowestoft and Sizewell, with assets on and offshore
- The Cambridge-Norwich growth corridor – connecting two global centres of research
- The east-west growth corridors along the A47 from Lowestoft and Great Yarmouth to King's Lynn, plus the A14 from Felixstowe through Ipswich, Stowmarket, Bury St Edmunds, Newmarket and Haverhill to Cambridge and Peterborough
- King's Lynn - and the A10 and rail corridor to Cambridge

Through the three phases of Growth Deals, the New Anglia LEP has been awarded £290.8m, with £69m secured during the third phase. Some of the major ongoing projects that have received support from Growth Deal funds include:

1 Infrastructure

- Transport:
  - Third River Crossing in Great Yarmouth (£120m; £2m from New Anglia LEP), aimed to support Great Yarmouth as centre for both offshore renewable energy and the offshore oil and gas industry, as well as improving access and strategic connectivity to the port
  - Eye Airfield Link Road (£5.4m; £1.46m from New Anglia LEP), which will improve journey time reliability and road safety and support the Eye Airfield Development Area, including the delivery of 600 new homes and 2,000 new jobs
  - Hempnall Roundabout (£4.4m; £0.651m from New Anglia LEP), was completed in November 2019 and is expected to help improve congestion and safety at the junction, as well as contribute to the delivery of 1,800 homes and 9.5 acres of employment space
  - Transport packages to improve traffic conditions and accessibility for Thetford (£2.386m), Ipswich (£3.5m), Great Yarmouth (£8.875m), Attleborough (£4.621) and Norwich (£7.35m for the city centre and

£3.825m for other areas). Furthermore, the transport packages are expected to support the creation of new jobs and housing development

- Digital: Better Broadband for Suffolk and Better Broadband for Norfolk programmes (£5m each) to extend the coverage of superfast broadband
- Other:
  - Flood defences in Great Yarmouth (£39m; £8.2m from New Anglia LEP) and Lowestoft (£69m; £10m from New Anglia LEP) to protect existing homes and businesses from flooding in the and to enable investment and economic growth in the area by protecting existing jobs and providing new employment opportunities
  - Bacton to Walcott Coastal Management: a sandscaping scheme that was completed in Summer 2019 to protect the Bacton Gas Terminal and gas infrastructure from erosion, while also bringing additional benefits to tourism and recreation (£17-22m; £1.08m from New Anglia LEP)

2 Jobs, education and skills

- The Energy and Engineering Skills Centre of Excellence on East Coast College's Lowestoft campus, an £11.3m project (with £10m funding from the New Anglia LEP) that opened in November 2019 .The Centre will boost the development of technical skills and professional expertise in the sectors of energy, maritime and engineering.
- The LEP has awarded £14.6m in capital funding for four new projects that will improve the digital and information technology skills of the workforce and boost innovation:
  - Digital Skills & Innovation Accelerator at the University of Suffolk (£6.5m): an Information and Communication Technology (ICT) research centre, aiming to "enhance productivity in sectors which use ICT as a key enabler".
  - Digi-Tech Factory at City College Norwich (£6.1m): a building to host innovative IT workshops and facilities.
  - Digital & Technology Skills Hub at Suffolk New College (£1.6m): the Hub will offer courses and support for individuals to progress into higher education and higher-level apprenticeships.
  - Norfolk & Suffolk Innovation Network (£0.4m): a network to promote Internet of Things (IoT) technology in Norfolk and Suffolk.
- The New Anglia LEP received resources from a £5m national fund to deliver the New Anglia Careers Hub, one of 20 Career Hubs around England. The Hub is made up of 32 local schools and colleges in Ipswich, Norwich and along the A140 corridor, working together with universities, training providers, employers and career professionals to improve careers education. The Hub also works closely with the schools and boards of the Ipswich and Norwich Opportunity Areas and the New Anglia Enterprise Adviser Network.

3 Enterprise

- New Anglia Capital is an angel investment programme co-funded by the New Anglia LEP and the Anglia Capital Group that supports innovative start-ups and high-growth firms in Norfolk and Suffolk. About £3.5m has

been invested since the inception of the programme in 2014 to May 2018, with the New Anglia LEP pledging a further £1m in mid-2018.

- A new business park, the Atex Business Park, is currently being constructed on brownfield land close to the A14, supported by the New Anglia LEP through loan funding of £0.63m.
- Brineflow Properties and Handling Ltd has made a £4m investment (with support from the New Anglia LEP) in the Great Yarmouth Energy Park, constructing "modern liquid fertiliser tanks, storage vessels and manufacturing and processing equipment, supported by new underground pipework to carry the imported fertiliser from ship tankers in the river port".

Cambridgeshire and Peterborough CA

Some of the major ongoing projects in Greater Cambridge and Greater Peterborough are listed below:

1 Transport

- New King's Dyke level crossing: this project will tackle the current congestion at the level crossing and provide future economic expansion and housing stimulation within the Whittlesey area. The CA will provide funding contribution of up to £16.4 million over the original £13.6 million allocation to enable the scheme to progress to construction. Work is due to begin in late 2020 and the project is scheduled to complete by the end of 2022.
- Wisbech road improvements and Wisbech rail study: The Cambridgeshire & Peterborough CA allocated £10.5 million to a package of improvements to the road system around Wisbech. The highway improvements will stimulate housing, economic and jobs growth in the town, with the funding coming via the Government's Growth Deal package. A budget of £1.5 million was also approved to fund a detailed study into delivering a rail link between Wisbech and March. The study will satisfy the requirements of what is known as the GRIP 3b stage – part of Network Rail's wider eight-stage process for bringing rail infrastructure projects to completion.

2 Innovation

- Haverhill Innovation Centre: A new Innovation Centre located on Haverhill Research Park, part of the Cambridge Compass Enterprise Zone. The Centre is due to be completed in September 2020.
- Eastern Agri-Tech Growth Initiative: The Eastern Agri-Tech Growth Initiative provides a boost to the food, drink and horticulture sectors by supporting businesses looking to invest in specialist equipment, new market and supply chain development, ways to improve productivity and efficiency, and the application and commercialisation of Research and Development. The initiative is run by the CA with support from New Anglia LEP, Norfolk County Council, and the local authorities covering the two LEP areas. In 2018, the CA agreed to extend the project to 2021, with a further £4 million available to businesses.

3 Enterprise

- Growing Places Fund Extension: A £16.6m project as a successor to the Growing Places Fund, primarily focused on projects which will unlock commercial land and/or jobs. Investments are a mixture of grants and loans.

4 Housing

- The CA has agreed to fund housing projects in East Cambridgeshire, Ely and Peterborough through loans or grants of total value up to £32.6m.

For the Greater Cambridge Greater Peterborough area, local authorities have secured funds of £146.7m to be spent between 2015 and 2021 through the Growth Deal, of which £98m has already been committed to projects. The allocation of the remaining funds is still under consideration, with the call for major projects closed in November 2018. All programmes other than the call for major projects opened for new application 22 July 2019. For Greater Cambridge and Greater Peterborough, the main themes for the third stage are: housing delivery; transport; innovation and business growth; skills infrastructure and Enterprise Zones.

The Cambridgeshire and Peterborough CA published its new Local Transport Plan (LTP)[120] for the area in June 2019. The Transport Delivery Plan (2019 to 2035) contained within the LTP includes commitments to taking forward a number of major infrastructure projects, including the dualling of the A10 road between Cambridge and Ely, the development of a metro system for Greater Cambridge (the Cambridgeshire Autonomous Metro – CAM), the improvement of the A47 corridor and new rail stations in Soham and Cambridge South as well as a new rail link to Wisbech. The LTP also commits to implementing recommendations from the Strategic Bus Review within Greater Cambridge, to ensure a more reliable, better quality and more attractive bus network for passengers.

A longstanding target of local authorities and stakeholders has been the establishment of an independent university in Peterborough. The new University of Peterborough is due to open in 2022, with building work on the site due to commence by October 2020. The CA has committed £12.6m to the project so far.

Further investment in affordable housing has been planned as well. The CA is providing £170m in grants, loans, guarantees and joint ventures towards the development of 2,500 new affordable homes between 2017 and 2022.

Hertfordshire LEP

The main planned strategic infrastructure projects for the Hertfordshire LEP are listed below:

1 Town centre improvements

- Stevenage Town Centre transformation: the project is part of 20-year regeneration programme of Stevenage, with work on the first phase

[120] The Transport Act 2000 requires local authorities to publish a Local Transport Plan (LTP) outlining their policies regarding transport infrastructure, while the Transport Act 2009 added an additional requirement that 'proposals for the implementation of those policies' must be specified as well. These proposals are sometimes contained in a separate document, the Long-Term Transport Strategy (LTTS).

commencing in 2020. The gross development value of the project is estimated at £350m, with funding from several partners, including Hertfordshire LEP (£34m), Stevenage Borough Council, Hertfordshire County Council and Hertfordshire Chamber of Commerce. The plan includes the development of new streets, housing, public places and a public services hub.

- Bishop's Stortford town centre regeneration: as part of a multi-million project to revitalise the town centre, the Hertfordshire LEP will provide £9.6m in grant and loan funding towards building a new leisure quarter with commercial space, a new arts and public services hub, a car park, a new public square, green and office space.
- Hatfield town centre regeneration: a £6m investment will help transform the town centre of Hatfield, with £4.8m allocated to residential and retail developments and £1.2m to the redesign of the White Lion Square.
- South Oxhey regeneration: the Hertfordshire LEP will contribute £2.25m to the £150m plan to provide high-quality homes and retail space in the town of South Oxhey.

2 Housing

- Garden towns: The Harlow & Gilston Garden Town will receive £0.7m from the government in order to accelerate its development, while Hemel Garden Communities was announced as one of five new garden towns that will receive funding from the Ministry of Housing, Communities & Local Government. The former is expected to deliver up to 24,000 new homes and the latter up to 11,000, while both are expected to boost job creation in the local area.

3 Road infrastructure

- A120 bypass (Little Hadham) and flood alleviation scheme: the aim of the £30m project is to alleviate congestion lose to the village of Little Hadham and to reduce the risk of flooding. The Hertfordshire LEP invested £8.26m and helped secure funding from the Department of Transport (£27.4m) as part of a wider funding package, with the Environment Agency and Hertfordshire County Council. Construction began in July 2019 and is expected to be completed by the end on 2020.
- New River bridge on Essex Road, Hoddesdon: the project will improve access and safety conditions for commercial and leisure vehicles, as well as cyclists and pedestrians entering and exiting the Hoddesdon Business Park. The Hertfordshire LEP will provide £6.5m for the project, with Hertfordshire Country Council and Broxbourne Borough Council contributing. Work to prepare the site for construction began in October 2019, and construction will begin in early 2020.

4 Innovation and skills

- Hertfordshire Innovation Quarter (IQ): Hertfordshire IQ is a multi-site Enterprise Zone that is being developed by a partnership led by the Hertfordshire LEP and including the Hertfordshire County Council, St Albans City and District Council and Dacorum Borough Council. It is

expected to deliver 8,000 new jobs and space for 800 businesses upon completion.

- Vaccinology & Cell Therapy Hub: The Hertfordshire LEP awarded the Royal Veterinary College with £7m to support the development of a Veterinary Vaccinology & Cell Therapy Hub on its Hawkshead campus in Hatfield. The Hub will contain specialist facilities, including laboratories, housing for animals and an incubator for small businesses and will aim to develop vaccines and cell therapies that will fight key animal infections and protect human health. Delivery is planned for 2020.

In the March 21st Hertfordshire LEP Board Meeting, it was decided that capital funding will be provided to the following projects:

- North Hertfordshire College Hitchin Campus redevelopment (£3.7m)
- University Campus St Albans redevelopment (£5m)
- Cell & Gene Therapy Catapult Fit Out (£2.9m)
- Watford Business Park Phase II (£5m)
- Watford Infill Sites (£1.4m)
- University of Hertfordshire Sports Science Fit Out (£3.9m)
- HatTech Beaconsfield Court (£0.75m)

Furthermore, the Growing Business Fund (£2.8m from EU grant funds and £3.5m from the LEP SME loan fund) will become available to support SMEs after the appointment of a fund manager.

In the June 20th Hertfordshire LEP Board Meeting, it was decided that capital funding will be provided to the following projects:

- M1 Junction 8 and associated roadways (£3m) – subject to a number of conditions
- Stevenage Bioscience Catalyst (£1.2m) – based on a number of conditions
- Stevenage North Block (£1.5m) – based on the condition that any revenue surplus would be shared on an equal basis between the applicant the LEP
- Watford Clarendon Road Expansion and Watford Junction Improvements (£0.3m)
- Essex Road (New River Bridge) (£2.5m) – based on the condition that the applicant will confirm the date for completion of the land sale

In the September 19th Hertfordshire LEP Board Meeting, it was decided that capital funding will be provided to the following projects:

- Stevenage Bus station relocation (£9.6m) – subject to the scheme obtaining planning permission and meeting BEIS requirements for the Stevenage related GD3 allocation
- Russell Building scheme upgrade (£1.7m)

In the December 12th Hertfordshire LEP Board Meeting, it was decided that LGF capital funding will be provided to the following projects:

- Hertfordshire Living Lab (£0.7m)
- Royal Veterinary College Cardiovascular Imaging Centre for Excellence (£2.8m) – subject to the project achieving planning permission+

South East LEP (Essex)

The main upcoming and ongoing South East LEP projects for Essex include:

1 Road infrastructure

- A127/A130 Fairglen Interchange new link road: The scheme includes building new roads and widening existing ones to help reduce journey times and increase safety. In addition to the improvements for motorists, a new walking and cycling bridge is planned which aims to offer significant benefits for sustainable transport users. The South East LEP will contribute £6.235m and the Essex County Council £3.6m, with the delivery date set in Autumn 2022.
- A13 corridor widening: The Strategic Economic Plan 2014 of the South East LEP identified the A13 corridor in Thurrock as "the largest single growth opportunity in the area", estimating that the A13 widening and other planned transport investments will "directly enable the creation of 4,045 jobs and 3,340 new homes by 2021, and facilitate 43,610 jobs and 11,000 homes in the corridor". The scheme, due to be completed in Winter 2020/21, will be funded by the South East LEP through the Local Growth Fund with contributions from London Gateway Port. The provisional allocation for the project included £5m as a capital grant and up to a further £75m for construction.
- A131 Braintree to Sudbury: A transport package with safety and highways improvements to key junctions along the A131 corridor, together with enhancements to cycling and pedestrian crossing provision. The total project was expected to cost is £3.6m, with the South East LEP funding half and the Essex County Council funding half. The project is on hold after Essex County Council undertook a comprehensive review of their Capital Programme, with a view to reduce capital spending. As part of the review the Council took the decision to withdraw their £1.8m funding.
- A131 Chelmsford to Braintree: The scheme includes a number of capacity, passenger transport and safety improvements. It is due to be completed in 2020, with the overall project cost at £7.3m (£3.66m from the South East LEP).
- A133 Colchester to Clacton: The purpose of this projects is to deliver capacity, cycling and safety improvements along the A133 route connecting Chelmsford with the seaside resort of Clacton. The expected completion date is Spring 2020 and the cost is set at about £2.9m, with a £2.7m contribution from the South East LEP.
- Gilden Way Upgrading, Harlow: The scheme consists of widening and improvements to 1.8 kms of the existing two-way, two lane, Gilden Road, Harlow to provide access for the new housing development at Harlowbury and to provide a link to the proposed new Junction 7a on the M11. The South East LEP will contribute £5m towards the total project cost of £18.1m, while the delivery date is set to be in Winter 2021/22.
- M11 Junction 8 Improvements: The project includes three schemes involving changes to M11 Junction 8 in order to improve traffic flow across the junction, improve access to Stansted Airport, the Services area and between the M11 and the A120. It is due to be completed in Spring 2021

and its total cost is £18.6m, with the South East LEP providing funding of £2.7m.

2 City transport packages

- Basildon Integrated Transport Package: The aim of the package is to deliver traffic management and sustainable travel infrastructure improvements in Basildon. The objectives include supporting housing and job growth, reducing congestion and promoting sustainability and environmental improvements. The project cost is estimated at £9.845m, with the South East LEP providing £6.586m in capital funding. The completion date is set in Spring 2021.
- Colchester Integrated Transport Package: The schemes associated with the Colchester Integrated Transport Package (ITP) focus on traffic and congestion reduction, traffic management measures, and replacement of highway infrastructure, to improve the economic vitality of the town centre while delivering operational improvements across the wider town centre area. The South East LEP will provide capital funding of £5m, with the total project cost set at £12m. The expected completion date is Spring 2021.

3 City improvements

- Grays South: the project includes the provision of a new quarter within the town centre, creating a high-quality arrival point including a new pedestrian crossing for the railway and new public spaces defined by new commercial developments. The South East LEP will contribute £10.8m, while the total cost is expected to be £28.7m. The expected delivery date is 2024.
- Chelmsford City Growth Area Scheme: A package of schemes running to Spring 2021 with the aim of providing additional transportation capacity through enhanced sustainable transport, highways capacity improvements and key safety and technology upgrades for the City of Chelmsford. The total project cost is £15m, with a £10m contribution from the South East LEP.
- Purfleet Centre Project: The Purfleet Centre project includes the comprehensive redevelopment of a 140-acre site to provide a new town centre for Purfleet featuring; 2,500 new homes, and a 600,000 sq ft film and television studio complex, as well as supporting infrastructure. In total it is anticipated that the development will create around 2,700 new jobs (direct and indirect but excluding construction jobs). The expected completion date is Winter 2029/30 and the total project cost is £122m (£5m from the South East LEP).

4 Other transport infrastructure

- London Gateway/Stanford le Hope: London Gateway is a technologically advanced deep-sea container port catering for global shipping. This project, due to be delivered in Autumn 2020, includes the development of a new multi-modal interchange and new station buildings to support transportation from and to the port. £7.5m of the total £15.1m project cost will be provided by the South East LEP.
- Beaulieu Park station in Chelmsford: the South East LEP will support the creation of a new railway station in the northern part of Chelmsford with £12m. This is expected to aid the development of 4,000 new homes in the

area. The total project cost is set at £157m and it is expected to be completed by Winter 2025.

South East Midlands LEP – SEMLEP (Bedfordshire)

The main SEMLEP projects in the Bedfordshire area include:

1 Road infrastructure

- Improved highway access for Luton Airport: a number of junction improvements near the airport to increase road capacity, expected to create 750 new jobs and aid the development of 800 new homes The £6.2m project is due to be complete in March 2020, with £1.2m funding from the SEMLEP.
- M1-A6 Link Road: a new road to create a northern Luton bypass. This will support the creation of 2,000 new jobs and 4,000 new homes, as well as improve access to Luton Airport and relieve congestion. The project cost is £60m, with the SEMLEP contributing £32.75m. The road is due to open in 2022.
- Transporting Bedford 2020: an £18.6m scheme to tackle traffic congestion in the Bedford city centre and improve business productivity, including smart traffic control and traffic signal technology. The SEMLEP is the major contributor in the project with funding of £15.5m. The expected completion date is 2021. The scheme is expected to result in eight junctions with improvements to physical capacity, and a 10% increase in town centre footfall compared to 2019 data.
- A421 upgrade: this project will see dual carriageway built from J13 on the M1 to Milton Keynes opening up more land for employment with access to the motorway network. It is expected to ease congestion and improve access to planned housing developments in the area. The scheme cost is projected at £29m (£23.5m from the SEMLEP) with a delivery date of December 2020.

2 Skills

- Luton Hat District: four buildings are in development to create a network of creative and digital industry workspaces in the Cultural Quarter, located between Luton Station and Luton Town Centre. The projected outputs include 133 new jobs, 2400m² of usable floor space developed, 11 new start-ups per annum and more than 1,700 new opportunities for skills-based learning. The SEMLEP will contribute £3.96m towards the total cost of £9.4m, with the project completion date set as 2021.

3 Technology

- Variable Temperature Emissions Chamber for HGVs in Millbrook: the new facility will be used primarily to test buses, trucks and off-highway vehicles for emissions, fuel and lubricant performance and climatic performance. It is also designed to test electric vehicles to determine energy consumption, range and energy efficiency and to test vehicles using alternative fuels such as hydrogen, LNG and CNG for range, emissions and fuel consumption over a drive cycle. The total project cost is £9.5m with a £2.4m contribution from the SEMLEP. Expected completion date is Autumn 2020.

The new bidding round for capital funding through Growth Deal resources closed in 2018 and in the SEMLEP Board approved 16 projects to go forward for due diligence. Final funding decisions on the following were made at the SEMLEP Board meeting on 22 May 2019:

- Business, Skills and Innovation Centre currently known as K Block in Luton (£3m)
- STEM Teaching Block Provision, Bedford (£1.27m)

The following were also approved at the SEMLEP Board meeting on 25 September 2019:

- Houghton Brook Flood Storage Area scheme (£1m)
- Dunstable High Street Regeneration Phase 2 project (£2.5m)

Other initiatives

City Deals

City Deals are agreements negotiated between the central government and local bodies (local authorities, LEPs, other entities) that grant the latter decision-making powers and funding to form and implement locally focussed growth plans. Four such deals have been agreed in the East of England:

- Greater Cambridge City Deal: the Deal primarily focuses on investment in infrastructure, housing development and improving the local skills supply (including the a locally-responsive skills system). The central government will contribute up to £500m over a 20-25-year horizon and the Greater Cambridge authorities will contribute a further £500m. This is expected to help unlock a further £4bn in private investment. The anticipated benefits of the Growth Deal include the establishment of an infrastructure investment fund, the accelerated delivery of more than 30,000 homes and the development of 1,000 new ones, the creation of 45,000 jobs and 400 apprenticeships.
- Greater Ipswich City Deal: the main focus of the Greater Ipswich City Deal is to tackle youth unemployment and to enhance the level of skills in the local economy. It includes the development of a locally responsive skills system and programmes to support unemployed people aged 16-24 years old and to maximise employer investment in skills, complimented by a business support package. The Deal is estimated to deliver:
  - Over 3,500 young people supported into work, including 2,200 into sustained work
  - 5,000 new apprenticeships over the next five years
  - £10m additional private and local public investment in skills
  - 3,000 additional high value jobs and 400 new businesses; sector investment of £100m across the LEP by 2016
  - A 5% increase in VAT registered businesses by 2019
- Greater Norwich City Deal: the Deal is structured in three strands: supporting businesses through enterprise and innovation initiatives; developing essential infrastructure and housing; and creating a locally-responsive skills system to maximise employer involvement and investment. The City Deal is predicted to help create more than 19,000 jobs (among which 3,000 high-value jobs in the Norwich Research Park)

speed up housing delivery and create 3,000 additional houses in the North East Norwich Growth Triangle area.

- Southend-on-Sea City Deal: the main aim of the £6m City Deal is to support business creation and growth.

National projects

Two major infrastructure projects of national significance in the East of England area include the Cambridge-Oxford Expressway and the East-West Rail. These projects share the main target of improving connectivity along the Cambridge-Milton Keynes-Oxford Corridor, an area with major hubs of research, innovation, technology, entrepreneurship and advanced manufacturing.

Further major road projects by Highways England in the East of England include:

- A14 Cambridge to Huntingdon improvement scheme (£1.5bn)
- A1(M) junction 6 to junction 8 smart motorway (£110m-156m)
- A12 Chelmsford to A120 widening scheme (cost pending)
- A428 Black Cat to Caxton Gibbet (£800m-£1.4bn)
- A47 Blofield to North Burlingham (£50m-100m)
- A47 Great Yarmouth junctions improvements (£25m-50m)
- A47 Guyhirn junction (up to £25m)
- A47 North Tuddenham to Easton improvement (£100m-250m)
- A47 Thickthorn junction (cost pending)
- A47 Wansford to Sutton dualling (£50m-100m)
- M1 junction 13 to junction 16: smart motorway (£373m)
- A major project currently under review is the Lower Thames Crossing, which is expected to benefit the areas around Kent, Thurrock and Essex by reducing congestion and travel times.

The East of England as a whole is not represented by a single Sub-national Transport Body. Norfolk, Suffolk and Essex are represented by Transport East, while Bedfordshire, Hertfordshire, Cambridgeshire and Peterborough are represented by England's Economic Heartland.