Essex County Council

Essex Sector Development Strategy

Targeting a stronger, more inclusive, and more sustainable future economy

Contents

Foreword

I am delighted to introduce Essex County Council's first Sector Development Strategy, setting out our approach to creating high quality jobs within the priority economic sectors, increasing prosperity for all and facilitating growth across the County.

This is a long-term strategy which focuses on futureproofing the Essex economy and embracing the opportunities that the transition to net-zero carbon will offer.

We have been ambitious in our aims and in order to succeed it will require a collective effort in partnership with our Borough, City and District Councils, the private sector and local businesses; however, I am confident that by working alongside my Cabinet colleagues Cllr Tony Ball, Cabinet Member for Educational Excellence, Skills, and Education and Cllr Peter Schwier, Climate Czar and Deputy Cabinet Member to the Leader, we will successfully drive this agenda forwards.

Tony's work with our schools, colleges, universities, and the entire skills sector will be crucial to the success of this strategy, as will the work Peter has done building on the momentum of the Essex Climate Action Commission report to deliver sustainable change in Essex.

This strategy is only the start of our work to deliver a stronger, more inclusive, and more sustainable future economy, and I am excited to see the opportunities that it generates.

Cllr Lesley Wagland, Cabinet Member for Economic Renewal, Infrastructure, and Planning

Executive summary

The Sector Development Strategy will support Essex County Council, public sector partners, and businesses to effectively plan together for the future economy of the county.

The strategy has identified five economic sectors with significant growth potential that could be realised in Essex: Construction and Retrofit; Clean Energy; Advanced Manufacturing and Engineering; Digitech; and Life Sciences (including med-tech and care-tech).

These economic sectors will deliver large numbers of good quality jobs for our residents. Our research shows that Essex has a number of marketable strengths that businesses consider important and will be needed to be successful, but the county is also falling behind the national average in key metrics which we must address.

We are adopting several key principles to support transformational, long-term economic change:

- **Identifying and leveraging the strengths** we have in Essex that gives us a unique opportunity for growth
- **Targeting systemic challenges** such as relatively low numbers of high-level qualifications, low investment in innovation and R&D, and uneven participation across demographics in productive sectors
- Collaborating across the public and private sectors to take a **'whole Essex system'** approach – not only within the county council with strategies and teams working on inward investment, skills, capital investment, sustainable transport, and care – but also with external partners like district councils, universities, the NHS, with businesses and the voluntary and community sector
- **Prioritising where our interventions will have the most impact** within the sectors, on action to address systemic weaknesses and make groundwork-laying investment.

The potential growth of the five sectors is huge – but we must make sure that it is targeted in a way that makes a real difference for our residents:

Strategic goal 1: A thriving economy
using the sectors to market Essex as a centre of innovation and entrepreneurial spirit where the benefits of this growth are felt within the county. In practice that will mean:
- More high quality jobs in the sectors of the future
- More funding for innovation
- Good quality buildings for businesses
- A business community that is ready to take advantage of innovation and technology
- Residents with the skills and confidence to embrace digital services and employment opportunities

Strategic goal 2: An economy for everyone
ensuring every resident of Essex has the opportunity to gain the skills and experience to succeed in the five sectors regardless of their background and identity. To do this we will deliver:
- A skills system that is aligned with the jobs and opportunities of the future
- A collaborative approach between education, businesses, and local government to deliver the skills needed for employment in the five growth sectors
- Clear pathways of employment from traditional sectors into the five growth sectors
- Equality of opportunity in our in growth sectors.

Strategic goal 3: An economy fit for the future
centring green growth as intrinsic to the future growth of the five priority sectors to ensure we meet our target for a net zero county by 2035. Success for this opportunity looks like:
- Reduced emissions in line with our ambition for the County to become net zero
- Progress towards a decentralised and decarbonised energy system
- Sustainable new homes and a thriving retrofit sector to improve existing homes
- Essex at the forefront of low carbon (solar, offshore wind, nuclear and hydrogen) energy development and employment
- Harnessing innovation to reach our net zero ambitions.

Introduction

£40b

Essex's annual output

The Essex economy is strong, generating an annual output of **£40 billion,** larger than many city regions. Essex is a substantial, growing, and diverse economy. The county supports **700,000 jobs and 74,000 businesses.** It is home to world leading R&D in quantum technologies, medicine, data science and advanced manufacturing – all underpinned by by growing universities. Our connections to London, Cambridge and the M11 Corridor, East Anglia, and the rest of the world are growing rapidly as more people choose to make Essex their home. Essex is a great place to live, with good schools, a diverse landscape and places to enjoy arts and culture.

The county has significant potential for growth, but it will require a collaborative approach to ensure this latent economic opportunity is realised across the whole county, that better outcomes for all residents are delivered, and that nowhere and no one is left behind. This growth must also embed sustainable practices to support our ambition to reach net zero by 2050.

There is, therefore, a need to establish an approach unique for Essex to proactively drive a sustainable and inclusive economy at the same time as overcoming the barriers to growth for the future.

The strategy has identified future growth sectors that are projected to have strong growth in the county. The five sectors have been chosen for the transformative benefits they can deliver across the whole economy. Building a vibrant economy will boost all of our important wider sectors – therefore all sectors will be supported through increased prosperity and better opportunity to diversify and thrive. Key elements of our sectors are cross-cutting – energy and digital for example. Growing these will mean all sectors can benefit. Other areas such as our cultural and heritage sectors, are key to attracting and keeping businesses and workers and are supported by ECC and partners through bespoke strategic intervention.

440k

Jobs created by 2030, through the government's net zero strategy; Build Back Greener

This strategy is an important part of our Levelling Up goals, and it will deliver five key commitments from Everyone's Essex, our plan for levelling up the county:

- Creating **Good Jobs** for Essex residents
- Addressing the drivers of inequality by **Levelling Up** the economy
- Creating the conditions for **Future Growth and Investment**
- Capturing the benefits to the economy and the environment of **Green Growth**
- Hitting our **Net Zero** targets.

The Strategy will tap into national strategies around sustainable and equal growth. The government's Net Zero Strategy: Build Back Greener, aims to support **440,000 jobs** by 2030, as well as leveraging up to £90 billion of private investment by 2030, and reaching net zero by 2050 (BEIS, 2021). Our Strategy will support the delivery of the UK's national goals and grasp the opportunities from this ambitious agenda.

The government's levelling up agenda is also an important touchstone for this strategy, as a crucial way we can support the creation of a more inclusive economy. Through our strategic goals and delivery plan we will align our activity with the 10 Levelling Up Missions to maximise out ability to tap into future funding opportunities.

Success will require partners across Essex – from local government, business, and education providers – to work together on a collaborative approach and shared vision and goals. This is an ambitious undertaking, requiring the best of partners, businesses, and our communities, and we will continue to test, adapt, and iterate our plans in coordination with all of these groups.

Engagement and strategy development

This strategy will set the direction for the whole Essex system to come towards a brighter economic future. Throughout the development of the strategy we have engaged with partner organisations and local businesses to ground our strategy in the real conditions in Essex today. This engagement formed an important part of identifying the most appropriate growth sectors for Essex. We spoke to:

- Over 600 local businesses
- The 12 Essex District and Borough Councils and our two neighbouring Unitary Councils
- The three Essex Universities
- Business representatives from federated boards and sector specific organisations
- Other key bodies such as local NHS trusts and national partners like Innovate UK
- Peer Local Authorities.

Business view

ECC commissioned both quantitative and qualitative research to understand businesses within the five highlighted growth sectors. Work was carried out by QA Research in partnership with Ortus Economic Research in the period June to August 2021. This research was carried out with over 600 different businesses based and operating in Essex. This has given us an understanding of the issues facing businesses, their future challenges and opportunities (QA Research & Ortus Economic Research, 2021). The key positive elements that come through the responses in our growth sectors:

- Essex is advantageously placed between London and Cambridge
- Essex is seen as a good place to live with relatively low house prices allowing proximity to family, as well as easy access to coast and green spaces
- There is substantial optimism about the future, as the majority of growth businesses expecting increased turnover and staff numbers in the next five years. Most growth sector businesses expect opportunities to come from both diversification and green growth
- Most firms expected to stay in Essex in future.

However, the research also showed:

- Barriers identified were ‘workforce and skills’, ‘Covid and the Pandemic’, ‘access to markets and sales opportunities and ‘the finances of the business’

- Just under a quarter of growth sector businesses had ‘sought information, support or advice for the business’ in the last two years. Mentioned most frequently was a ‘business consultancy/consultant’ (23 per cent), ‘Essex County Council’ (16 per cent) or ‘accountants/solicitors’ (15 per cent – excluding statutory/regulatory purposes)

- Firms were confused about where to get support: many struggled to identify where to go – a question was included to explore where businesses would go for support if specifically looking to diversify – with 31 per cent saying they ‘don’t know’. No single resource for this was top-of-mind, as a wide range of different potential providers were mentioned.

- Many firms reported immediate recruitment issues. Skills would need to change to meet the future needs of their business. We have incorporated this feedback into our strategic goals and recommendations – in particular our geographic position as an asset in growing the life sciences sector.

Local government view

We have gained a number of important insights from discussion with local government partners. These have been integrated within the strategy and, form part of our **whole Essex system** approach.

- The work for sector development must include interventions at a wider regional level on major national projects requiring close collaboration with the adjacent local authorities; and areas closest to the Thames.

- The importance of continuity and dialogue with partners was highlighted – recognising the strengths and experiences to create projects alongside a long-term action plan. This joined up approach will be crucial, especially on large nationally significant projects which have potential to create thousands of new jobs and which will require the effective planning for housing, transport, and education of those who will fill these roles.

- A **delivery plan**, which will form the next part of our work, will take these points on board and will provide the impetus for this ambitious undertaking.

Our assets and strengths

This strategy builds upon strengths and assets in Essex that support the development of future growth sectors:

- Essex generates **£40 billion in Gross Value Added** (GVA) per annum for the country, larger than many UK Local Enterprise Partnership (LEP) Regions such as Liverpool City (£32 billion); Coventry and Warwickshire (£26 billion); York, North Yorkshire and East Riding (£25 billion) (ONS, 2017)

- By 2040 Essex is likely to increase by 13 per cent, or 192,000 people, to **1.65 million** – allowing for significant economic growth (ONS, 2020)

- Business stock in Essex increased by **17 per cent** (2014-2018) and Essex businesses have higher survivability rates than the national average

- Proximity to **UK's two largest container ports** and direct links to Europe and global trade (Felixstowe/Harwich and Thames DP World – which will soon become the location for two Freeports)

- Key role in the **UK's strategic road infrastructure** with M11, M25, A12, A13, Dartford Crossing, and forthcoming Lower Thames Crossing all within Greater Essex

- **Three leading universities:** The University of Essex, Anglia Ruskin University, and Writtle University College, as well as a thriving school system with many rated good or outstanding.

Figure 1: Map of Essex highlighting key assets

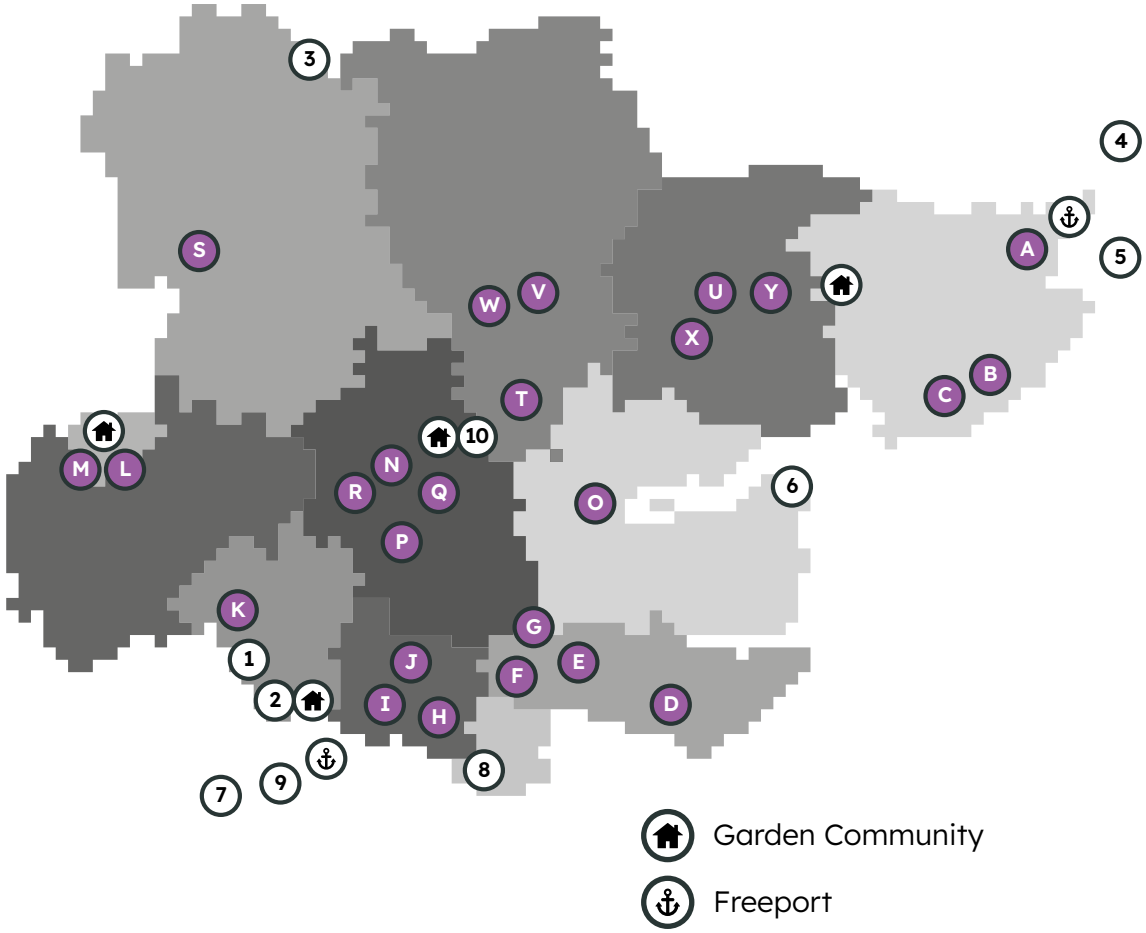
When these assets are overlayed onto a map of the county, alongside future proposed development a picture emerges of real on-the-ground strengths of Essex that this strategy can build upon:

Higher education centres:

- **A** Harwich Energy Skills Centre
- **B** Colchester Institute Clacton
- **C** ACL Clacton
- **D** South Essex College Southend Campus
- **E** South Essex College Stephenson Road Campus
- **F** USP College
- **G** ACL Rayleigh
- **H** ACL Basildon
- **I** South Essex College Centre for Digital Technologies
- **J** South Essex College Luckyn Lane Campus
- **K** ACL Brentwood
- **L** ACL Harlow
- **M** Harlow College
- **N** ACL Chelmsford
- **O** ACL Maldon
- **P** Chelmsford College
- **Q** Anglia Ruskin University
- **R** Writtle University College
- **S** Stansted Airport College
- **T** ACL Witham
- **U** ACL Colchester
- **V** Colchester Institute Braintree
- **W** STEM Centre
- **X** Colchester Institute
- **Y** University of Essex

Proposed NSIPs:

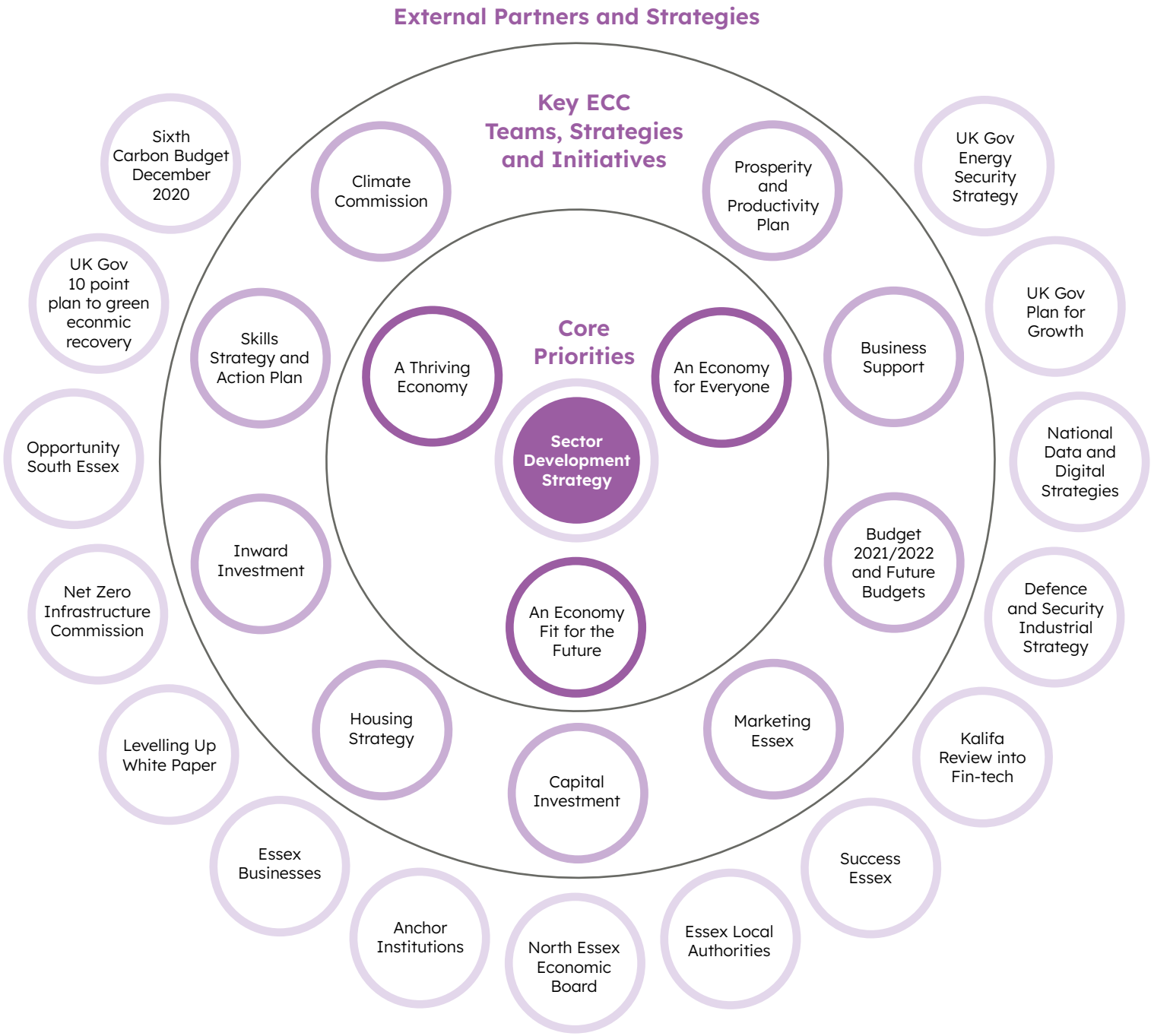
- **1** M25 J28
- **2** Lower Thames Crossing
- **3** Bramford to Twinstead
- **4** North Falls Wind Farm
- **5** Five Estuaries Wind Farm
- **6** Bradwell B
- **7** The London Resort
- **8** Oikos
- **9** Thurrock FGP
- **10** Longfield Solar Farm



Economic growth: Medium term

Alongside these tangible economic strengths, we are also developing a separate but connected strategy which will leverage our strong cultural sector and visitor economy, building the profile of Essex as an attractive place to live, visit, work and also invest. This work will come through our Visit Essex, Marketing Essex, and cultural programmes, alongside our work on inward investment. So whilst the cultural element is not included within the Sector Development Strategy explicitly, there is a crucial dependency on it to help us build a vibrant, healthy economy to support these sectors. We will continue to work closely with both internal and external partners to align the recommendations and work of the strategy with dependencies such as this.

Figure 2:
Strategic context for Sector Development



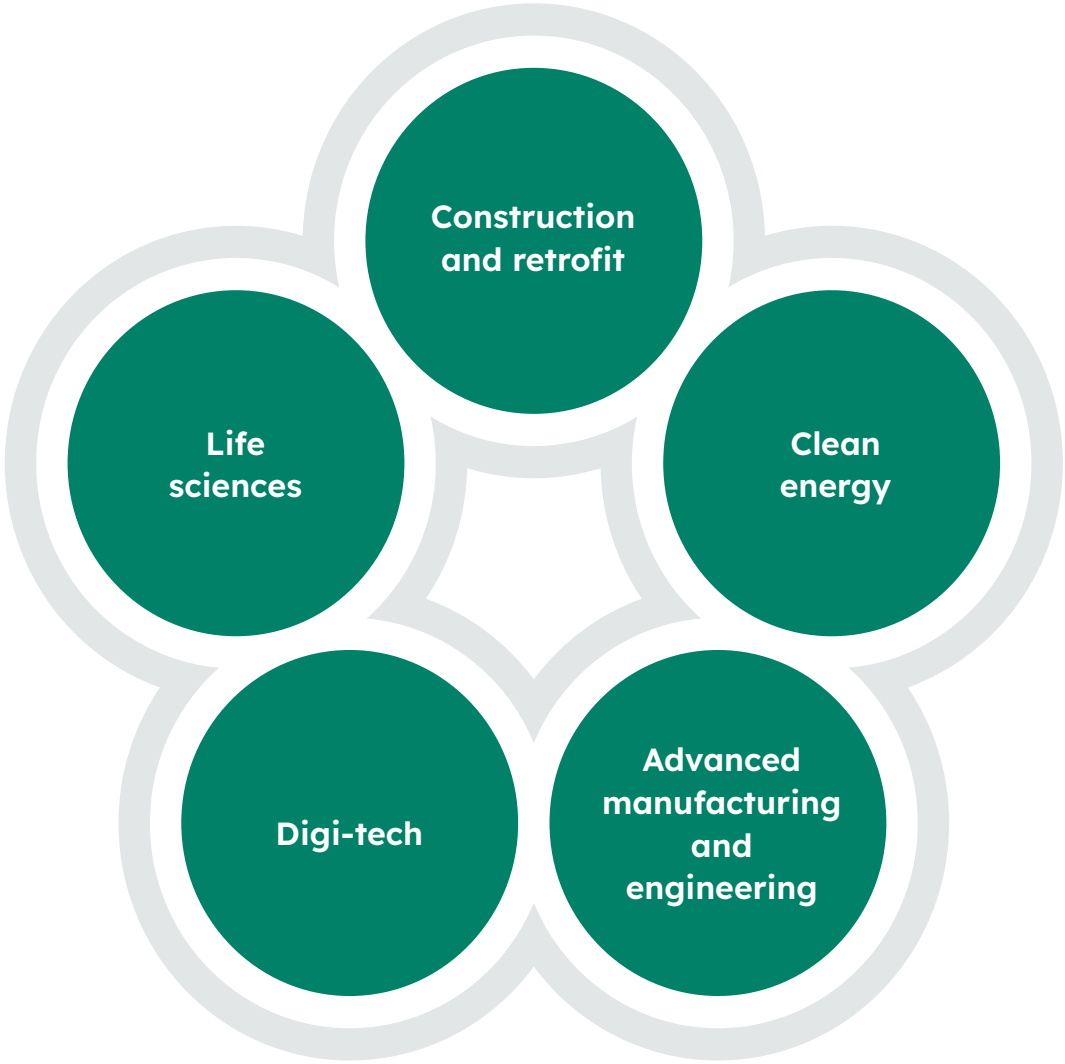
Leveraging our anchors

Our ability to work with local anchor institutions – our large public sector partners across the county – is crucial. ECC have an established anchors network that is seeking to better align the spending and policies of all of its members (NHS, universities, fire and police and local authorities) to support local businesses and residents and to tackle climate change. Anchors will play a key role in working collaboratively to ensure that opportunity to support the Essex economy will be maximised, through their spending and procurement activity, such as through retrofit. They are large employers and as such are crucial to embed good practice with regard to skills, training and other activity. Their role within their local communities will be key in relation to transport and other key measures.

Key growth sectors for Essex

The **five key growth sectors** that we have identified through extensive analysis are those that are best placed, with the right investment and support, to meet our ambition of a stronger, more equal, and more sustainable economy. These are by no means the only sectors that will grow in the future, nor are they the only sectors that have a base in Essex to grow from. They are, however, the sectors that we have identified as having the potential to bring transformative economic opportunities that Essex will miss unless we, as a whole-Essex system across the public and private sectors, act now. They are:

- **Construction** (including green construction and retrofit)
- **Clean energy**
- **Advanced manufacturing and engineering**
- **Digi-tech**
- **Life sciences** (including med-tech and care-tech)



Essex is already well placed to take advantage of the scale of opportunity presented by these sectors:

- Essex construction GVA is **25 per cent larger** than the average across the Eastern region
- The economic opportunity of delivering retrofit in Essex will be in excess of **£15 billion,** with more than **13,000 jobs** created
- The Local Government Association forecast that in 2030 across England there could be as many as 694,000 direct jobs employed in the low-carbon and renewable energy economy, rising to over 1.18 million by 2050. In Essex it is estimated that **15,908 jobs will be required by 2030 and 27,741 by 2050** (Local Government Association, 2021)
- Advanced Manufacturing and Engineering will be integral to achieving our net zero aspirations and creating a circular carbon economy in Essex. Every additional person employed through engineering activity is also projected to create a further **1.74 jobs** down the supply chain

10K

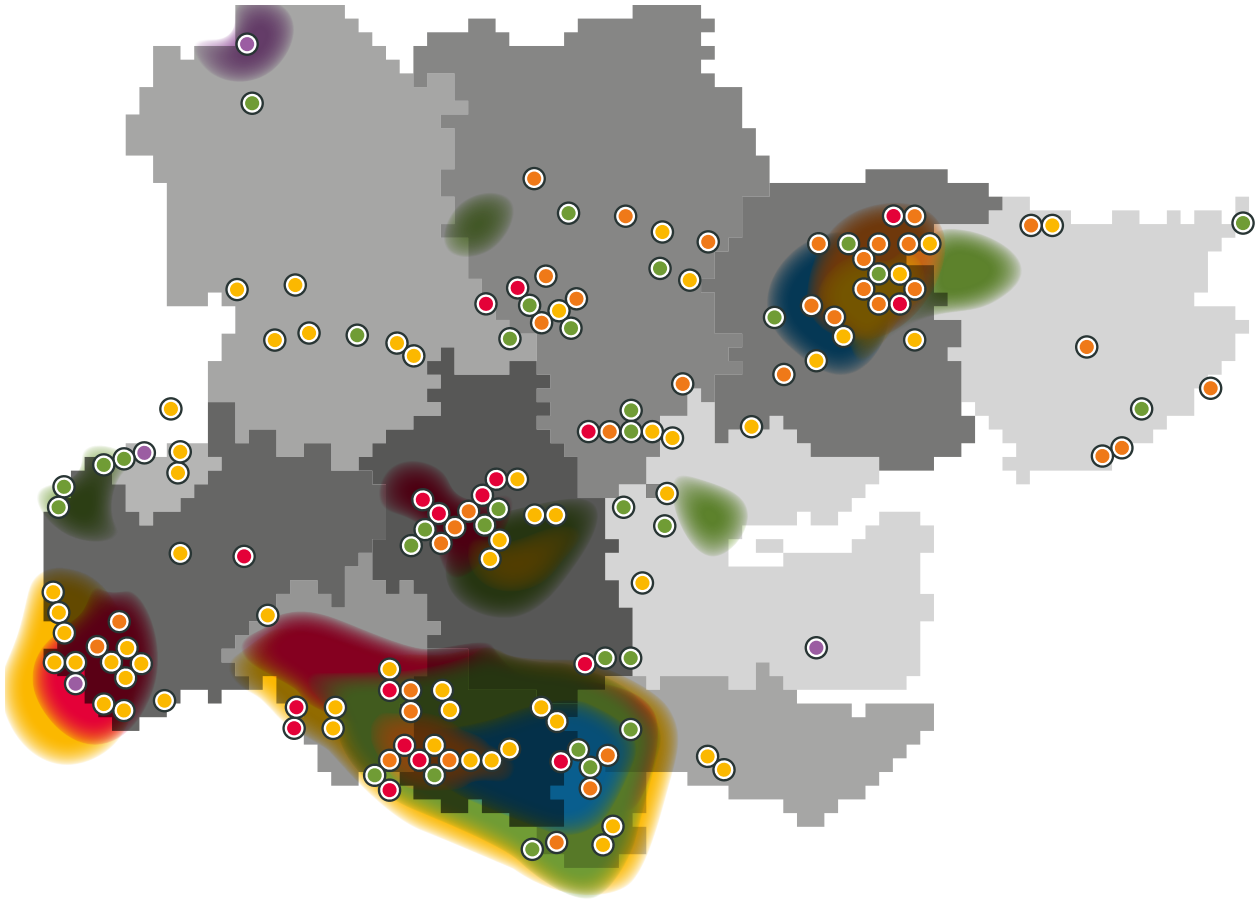
Additional jobs in the life sciences sector

- Greater AI diffusion and SME tech adoption could add **£38 billion** and **£45 billion** respectively to UK GVA in 2030 (Confederation of British Industry, 2021) – there are a high number of existing digital firms in the county and our academic strength in the sector with the University of Essex

- Forecasts predict that by 2040, Essex could gain around **10,000 additional jobs in the life sciences sector** (Cambridge Econometrics, 2021).

The South East Local Enterprise Partnership's Skills Report identified construction, creative, tourism, energy, logistics, health, care, digital, agriculture and finance as priority sectors (South East Local Enterprise Partnership, 2021). This alignment reinforces the importance of a **whole system** approach to support the growth of these sectors.

We have created a 'heatmap' to understand the geographic distribution of existing businesses who will be best placed to directly take advantage of growth in these sectors:



- Medium/large construction business
- Medium/large telecoms or digital technologybusiness
- Medium/large advanced manufacturing business
- Medium/large energy business
- Medium/large life sciences business
- Medium/large care business

Medium or larger businesses defined a having 50+ employees.

Figure 3: Map of Essex showing distribution of businesses who could take advantage of growth sectors.

Figure 2 shows the location of employers in the five growth sectors with each dot representing larger businesses that have 50 or more employees. The heat effect highlights the concentration of all businesses within the sector, relative to the total number of businesses in the county. It shows the relative strength of the south of the county in places like Basildon and Brentwood and the urban hubs of Chelmsford and Colchester in the mid and north of the county respectively – the strategy will build on these strengths and ensure business sectors are supported to grow across the county. The Sector Development Strategy aims to bring economic benefits across the whole County.

59%

Essex business expect turnover to grow over the next 5 years

Our growth sector businesses are positive about future growth prospects, **59 per cent** expected turnover to increase in the next five years, with **26 per cent** expecting it to remain constant. **72 per cent** of businesses in the digi-tech sector expected an increase and **62 per cent** said that they expected to either diversify or pivot their business within the next five years.

But there are areas where we need to do more:

- **39 per cent** saw workforce and skills as the main barrier to growth, with **33 per cent** citing the pandemic, **23 per cent** access to markets and sales opportunities

- Whilst **89 per cent** of businesses said they sought out information which affects their business externally, **54 per cent** of them do not engage with innovators in their markets and **48 per cent** never engage with public sector opportunities.

Construction (including retrofit)

Why the construction sector?

The construction industry affects everyone, influencing productivity and wellbeing, creating the homes, hospitals, schools, workplaces, and infrastructure essential for a good quality of life. It is one of the largest sectors in Essex and is crucial to our future economy and success. It supports a wide variety of roles:

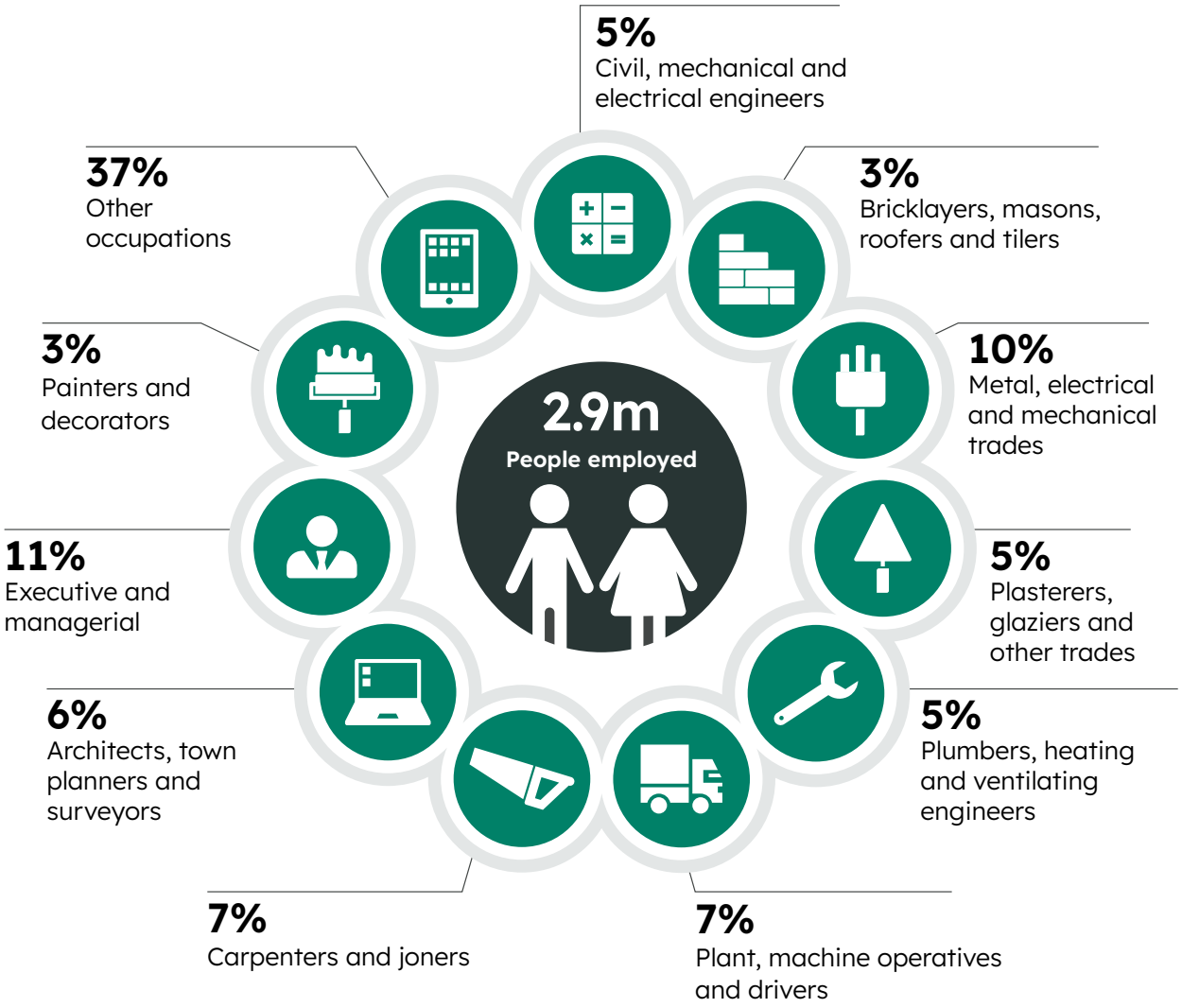


Figure 4: Role distribution in the UK construction industry (BEIS, 2013)

£4.8b

GVA generated in 2018

What does the construction and retrofit sector look like in Essex today?

Essex has a large and mature construction sector; it is **13,040 businesses,** which in 2018 generated £4.8 billion in Gross Value Added (GVA) – 11.2 per cent of the county's economic output and provided employment for **46,000 people.**

The county has a large number of small/micro enterprises and the self-employed with strengths in skilled trades. Over time, the demand for non-manual roles, including office-based professional and technical roles, is expected to increase, whilst demand for traditional skilled trades will decline, as a result of changing practices, technologies, and workforce demographics.

Where is the sector strong within the county?

Growth Sector	Construction
Basildon	1.42
Braintree	**1.90**
Brentwood	**2.34**
Castle Point	**1.63**
Chelmsford	1.40
Colchester	0.98
Epping Forest	**2.66**
Harlow	1.13
Maldon	**2.31**
Rochford	**1.87**
Tendring	**1.54**
Uttlesford	1.17

Table: Workplace Employment Location Quotients (compared to Great Britain) highlighted for the construction sector. A Location Quotient of 1 is equivalent to the national average.

The construction sector has a significant presence compared to the national average in a number of places across Essex. Therefore projected growth could benefit residents. Therefore, ensuring local residents from all backgrounds have the right skills to enter the sector and that future business growth in the construction sector can be accommodated by the right commercial property will be priorities around this sector.

What is the Government interest in the sector?

The Government's **Build Back Better: A Plan for Growth** published in March 2021 set out its plan to accelerate and improve delivery through wide-ranging 'Project Speed' reforms. (HM Treasury, 2021). A whole range of national documents, from the National Infrastructure Strategy, Ten Point Plan for a Green Industrial Revolution, Clean Growth Strategy, to the **Net Zero Strategy: Build Back Greener** will involve significant investment in construction across ambitious initiatives including the Future Homes Standard; efforts to reduce carbon emissions from residential properties both new and old; and leverage innovation through modern methods of construction.

Green construction sector opportunities – Local business case study

British Offsite, a subsidiary of the Weston Group – an Essex based construction business – has become the third employer to sign-up to the new Horizon 120 Business, Innovation & Logistics park in Braintree, set to create up to 80 new jobs.

It will create a new manufacturing and distribution centre as an expansion of the company's existing factory facility alongside its head office at the nearby Skyline industrial estate, enabling British Offsite to expand the size and complexity of its operations and output.

British Offsite will manufacture and distribute building components for the new homes industry, including kitchen and bathroom units, as well as their UNI-System of light gauge steel wall, floor and roof panels, all key components in the use of MMC (Modern Methods of Construction) which minimises the environmental impact of Construction.

93k

Homes allocated in local plans up to 2036

What is the size of the prize for Essex?

A strong baseline demand growth in the Essex construction sector is forecast. According to the East of England Forecasting Model (EEFM)[1], average growth of 1.4 per cent per annum is expected between 2020 and 2040. Moreover, a number of key project pipelines and changes to legislation will create substantial demand on the construction sector above and beyond baseline 'business as usual' levels. This modelling predicts a peak 38 per cent increase in jobs in the sector leading up to 2040.

Key drivers of this growth will be:

- **Housebuilding Targets** – ECC forecast over 40,000 houses will be built in Essex over the next five years, with the construction of six new garden communities over the next 15 years adding 55,000 on top of a further **93,000 homes** allocated in local plans up to 2036
- **Major infrastructure projects** – there are a number of significant projects both within the county and nearby that will drive demand in the sector, including the Lower Thames Crossing; and the creation of two new freeports at Freeport East (Harwich/Felixstowe) and Thames Freeport (London Gateway, Tilbury and Dagenham)
- **Clean energy** – there are a number of important offshore wind projects that will draw on the construction sector such as Harwich (North Falls and Five Estuaries) and a number of solar opportunities throughout the county.

1. Designed to facilitate the setting of consistent housing and jobs targets, the EEFM provided a set of baseline forecasts prepared by a leading independent forecasting house (**Cambridge Econometrics**) for the East of England region and sub-regions (counties, unitaries and district authorities), the East Midlands and South East regions, and the Greater Cambridge, Greater Peterborough, Hertfordshire, New Anglia, South East and South East Midlands LEP areas.

Sector growth opportunity: Retrofit

£1-1.75b

Economic opportunity to deliver retrofit across Essex

Retrofitting is the installation and fitting of new systems, which are designed for high energy efficiency and low energy consumption, to buildings previously built without them. Retrofitting the built environment of Essex is integral to meet our green transition goals and net zero aspirations. The economic opportunity of delivering retrofit in Essex is to be in excess of £15 billion and will create over 12,800 new jobs.

Retrofit has triple benefits:

- Minimising GHG emissions to tackle climate change – moving towards net zero
- Reducing fuel poverty, which will leave hard-working families with more pounds in their pocket and benefit the public sector – it's estimated that for every £1 spent on eradicating fuel poverty, the NHS alone would save 42p
- Tackling inequality, levelling up by up-skilling residents and getting lots of new people into long term sustainable employment – A review of over 20 studies found that every £1 million invested in retrofitting homes resulted in the creation of about 23 person years of employment.

Every house that is built today without future-proofed energy efficiency measures adds to the problem. Retrofitting is more expensive than a new net zero home, meaning another five years of housing delivery without reform could create a future retrofitting bill of £1-1.75 billion in Essex alone.

Retrofit sector opportunity – Local case study

Essex has 633,000 domestic properties, which emitted 2,150 $ktCO^2$ in 2018, and to decarbonise this existing stock, we will need to take an energy conservation, fabric first approach, upskilling and promoting additional insulation wherever possible. Existing trades will need to pivot to new ways of working with less reliance on gas boilers in favour of more sustainable technologies such as ground and air-source heat pumps and solar. However, Essex is ideally placed to capitalise on this innovation: we are the sunniest county in the UK and our ambition to build more than 40,000 new homes in the county over the next five years mean we can position ourselves as the place to build sustainably.

Clean Energy

Why the energy sector?

Energy is one of the most polluting sectors in terms of Greenhouse Gas (GHG) emissions. To reach our net zero carbon goals we need to create renewable energy and harness the supply for when demand peaks. The energy sector has strong supply chain links already within in the county, and there are a wide range of opportunities in the sector for innovation and growth in the county – as demonstrated by the graphic below:

Low Carbon, Renewable Energy and Environment (LCREE)

Environmental Goods and Services Sectors (EGSS)

Sector	Sub-sector
Low carbon electricity and renewable heat	– Renewable energy – Nuclear power
Energy from waste and biomass	– Bioenergy – Alternative fuels
Low carbon and energy efficiency products equipment and machinery	– Energy-efficient lighting – Energy-efficient products – Energy monitoring saving or control systems
Low carbon construction	– Low carbon construction
Low carbon services	– Low carbon financial and advisory services
Low-emissions vehicles and infrastructure	– Low-emissions vehicles and infrastructure
Water, waste and recycling	– Waste management, reuse and recycling – Water supply and treatment
Forestry and woodland management	– Forestry and woodland management
Non-renewable energy related	– Non-renewable energy related

Figure 9: LCREE+ sector definition (Clean Growth South East)

What does the clean energy sector look like in Essex today?

Essex is at the heart of the world's largest market for offshore wind which is likely to grow and encompass other forms of renewable energy in the future. The East of England has emerging plans for an energy investment programme worth billions of pounds for the storage of gas and captured carbon in the Southern North Sea, creating opportunities for Essex based businesses and residents from growth potential in the CCUS sector. Onshore renewable energy projects such as solar, biomass, and battery storage are growing, and the scope and scale of planned developments in the region's energy sector means that companies across North Essex and the wider region are presented with a host of new business opportunities. Capturing these for Essex is a crucial outcome for the strategy.

Where is the sector strong within the county?

Growth sector	Energy
Basildon	0.01
Braintree	0.04
Brentwood	0.06
Castle Point	0.00
Chelmsford	**0.32**
Colchester	**0.54**
Epping Forest	0.00
Harlow	0.06
Maldon	0.00
Rochford	**1.03**
Tendring	0.17
Uttlesford	0.03

Table: Workplace employment Location Quotients (compared to Great Britain) highlighted for the energy sector. A Location Quotient of 1 is equivalent to the national average.

Capitalising on national policy changes and investment opportunities will be key in kick-starting the future growth of the sector within Essex.

40GW

Power created by offshore wind by 2030

What is the Government interest in the sector?

The UK holds a leading global position in offshore wind capacity and the sector is expected to experience significant growth, with increase in demand for workers and skills ahead of the **government's goal of 50 gigawatts (GW) of offshore wind by 2030.** By 2026 nationally, the sector could employ around 70,000 workers (40,000 direct jobs and 30,000 jobs in the supply chain) compares to around 26,000 presently.

The government's Net Zero Strategy: Build Back Greener sets out the ambition for:

- Supporting up to **59,000 jobs** in 2024 and up to **120,000 jobs** in 2030 across all elements of the sector, from innovative hydrogen production to offshore wind, as well as mobilising additional public and private investment of **£150-270 billion**
- Deliver **5 GW** of hydrogen production capacity by 2030, whilst halving emissions from oil and gas
- **Fully decarbonising** the UK's power system by 2035.

Essex receives over 2,200 hours of sunlight across the year. There is significant opportunity in the county to capitalize on solar PV with solar farms and battery storage. The two freeports in the county also present a significant opportunity for onshore wind hubs and significant opportunities around hydrogen production and distribution.

Energy sector opportunities – Local business case study

The **Push Investment Group,** located in Colchester are one of the UK's largest installers, operators, and maintainers of solar PV systems as well as builders of low energy homes for both the social housing and private housing and planning and architectural support. The group encompasses eight separate businesses. Their mission is to provide a professional and cost-effective solution to the supply of, and demand for, large scale green energy generation through the use of renewable technologies. Currently Push have 447 megawatt of clean energy production capacity in planning, as well as using innovative approaches to solar farm O&M using drones. Push is the largest O&M solar farm business in the UK.

Advanced manufacturing and engineering

£4.7b

Sector contribution to the UK economy in 2018

What is included in the advanced manufacturing and engineering sector?

Advanced Manufacturing is the use of innovative technology to improve traditional products or processes. It allows manufacturers to create new products cost effectively and permits manufacturers to produce high-quality goods made to buyers' exact specifications. It forms part of the Fourth Industrial Revolution (Industry 4.0); integrating modern smart technology into traditional industry to deliver changes which increase productivity through innovation.

Engineering skills are closely tied to this emerging manufacturing sector. Research by the Centre for Economics and Business Research (CEBR) for Engineering UK shows the engineering sector had a strong multiplier effect on the economy, generating a further £1.45 Gross Value Added (GVA) for every £1 GVA created directly in the engineering industries (CEBR, 2015). What's more, every additional person employed through engineering activity was projected to create a further 1.74 jobs down the supply chain.

What does the advanced manufacturing and engineering sector look like in Essex today?

Essex has a large advanced manufacturing sector and is a leading UK and European hub for manufacture in the automotive, aerospace, electrical industries, as well as computer, electronic and optical products, machinery and equipment. The sector makes an important contribution to the Essex economy; its **585 businesses,** which in 2018 contributed **£4.7 billion** in Gross Value Added (GVA) to the UK economy in 2018 and accounting for 9 per cent of total jobs in the county. (MACE and Essex County Council, 2020).

Essex has traditionally had sector strengths here, and provides costs savings in comparison to London and Cambridge premises. A report from Invest Essex released in 2018 highlighted up to 24 per cent labour cost savings compared to London, Antwerp, Berlin, and Toronto (Invest Essex, 2018). Automation of manufacturing processes has had a significant impact on employment. In Essex, jobs reduced by 11 per cent between 2014 and 2018 and businesses numbers have also reduced by 7 per cent over the same period – notwithstanding this, the sector has achieved a 6.9 per cent increase in GVA.

£12b

Pledged to public sector development

Where is the sector strong within the county?

Growth sector	Advanced manufacturing
Basildon	1.14
Braintree	**1.22**
Brentwood	0.88
Castle Point	0.70
Chelmsford	0.75
Colchester	0.52
Epping Forest	0.41
Harlow	0.64
Maldon	**1.98**
Rochford	**1.80**
Tendring	0.77
Uttlesford	0.70

Table: Workplace employment Location Quotients (compared to Great Britain) highlighted for the advanced manufacturing sector. A Location Quotient of 1 is equivalent to the national average.

The advanced manufacturing sector has a particularly significant presence in a few areas of the county, whilst relatively weaker in others. Growth in the sector will revolve around supporting direct sector growth but also ensuring transport and planning gives residents the best access to future opportunities in certain parts of Essex.

What is the Government interest in the sector?

In March 2021, it set out the a framework around how it intends to Build Back Better (HM Treasury, 2021). The document commits to the delivery of the Ten Point Plan for a Green Industrial Revolution, and pledged **£12 billion** of public sector investment, with private sector investment supporting up to **250,000 highly skilled jobs.** This included investment in offshore wind; hydrogen; nuclear; electric vehicles; public transport, cycling and walking; greener maritime; and homes and public buildings (Department for Business, 2020). Manufacturing is not singled out but implementation will require an advanced manufacturing and engineering sector as an enabler to support those sectors identified.

The independent Made Smarter Review, following the launch of the Industrial Strategy Green Paper in January 2017, sets out a vision for growth and increased productivity across the manufacturing sector, by unlocking the potential of Industrial Digital Technologies (IDTs) (Made Smarter, 2017).

What is the size of the prize for Essex?

Essex can stand at the forefront of this growth opportunity with the right support and collaboration across the whole Essex system, maximising the strengths it already has and supporting more. The sector will be crucial to help build a more resilient and self-sufficient Essex economy to enable and support the planned growth in green energy, construction and retrofit sectors.

The space industry is an important sub-sector for Essex with significant potential opportunities – the UK Government has an ambition to capture 10 billion of the global space industry by 2030, worth an estimate £40 billion per annum, and the Knowledge Transfer Network (KTN) and UK Space Agency have already identified a number of Essex businesses which are already operating within the sector (see local case study below).

Essex is ideally placed to exploit the opportunity and create future sector growth, growing existing businesses, creating new highly paid and highly skilled jobs and attracting new businesses from UK and overseas to locate in Essex aligning with the strength of the space and satellite applications Sector. Essex-made components are already in orbit around all the planets in the solar system.

Essex-based space businesses play a key role in monitoring and predicting climate change; providing key components for the Copernicus and CO^2m programmes which measure the levels of CO^2 on earth. A future growth industry is predicted: businesses report on emissions, Essex is primed as one of the world's leading places to manufacture the sensors to enable this.

Advanced manufacturing and engineering sector opportunities – Local business case study

Early in 2021 the UK Government espoused an ambition to capture 10 per cent of the global space market by 2030, worth approximately $40 billion per annum.

Essex has a rich history in engineering and manufacturing electronic devices, especially complex ones, dating back to Marconi's world first radio broadcast for Chelmsford in 1920.

Today Essex boasts a burgeoning and growing sector which specialises in the manufacture and use of different electronics used in space, from solar panels on the Hubble Space telescope to sensors and items used on the Mars rover.

Essex based advanced manufacturing and engineering businesses working in the space sector include: Atlantic Microwave, Blue Abyss, Concurrent Technologies, DSV Air & Security, Intertek, Jallco, Leonardo MW, Merlin Flex, Paradise Datacom (recently acquired by Teledyne e2v), Printech Circuit Laboratories, Radkon UK, Raytheon Systems, S3 Satcom, Satellite Signals, Teledyne e2v, Vislink and there are many others in the supply chains.

Digi-tech

£12b

Public sector investment

What is included in the digi-tech sector?

The digi-tech sector is wide ranging, covering the provision of digital technology to improve customer experiences and opportunities; to supporting the internal capabilities that can help businesses be more flexible, gathering data to inform strategies, instil trust, and increase efficiency and productivity.

What does the digi-tech sector look like in Essex today?

Essex has a healthy digi-tech sector. The telecoms and digital technology sectors together amount to over **4,200 businesses,** which in 2018 generated **£1.2 billion** in Gross Value Added (GVA), 2.8 per cent of the County's economic output and providing employment for **15,250 people.** There are a number of clusters of innovative digi-tech assets across Essex that can be categorised across academic, infrastructure, and business strengths, such as:

- The Harlow Enterprise Zone focussing on life Sciences, ICT and advanced manufacturing and including the Harlow Data Centre home to Kao Data, one of the largest campus developments in the UK, supporting the Light Blue Fibre Network and is home to Cambridge 1, the UK's most powerful supercomputer
- Essex and Hertfordshire Digital Innovation Zone (DIZ) spanning Epping Forest, Harlow, Uttlesford and East Herts. The DIZ's ambition is to become a nationally and internationally recognised leader in health-tech and agri-tech innovation and enterprise (including the health and social care sectors)
- Essex is well equipped with universities and colleges specialising in digital technology – the University of Essex has specialism in computer science and information technology, ranking in the top 200 globally. Its Knowledge Transfer Partnerships programme which majors on this academic area working with business has recently been ranked No. 1 in UK

- Anglia Ruskin University (ARU) is ranked 27th in the UK for Computer Science and Information Systems in the QS World University Rankings by Subject

- South Essex College's new Centre for Digital Technologies in Basildon houses state-of-the-art facilities and equipment for tech focussed courses including IT networking, app development, games design and animation.

Where is the sector strong within the county?

Growth sector	Telecoms and digital technology
Basildon	**1.04**
Braintree	0.56
Brentwood	**2.16**
Castle Point	0.41
Chelmsford	**1.03**
Colchester	0.54
Epping Forest	0.70
Harlow	0.33
Maldon	0.38
Rochford	0.55
Tendring	0.27
Uttlesford	0.69

Table: Workplace Employment Location Quotients (compared to Great Britain) highlighted for the Telecoms & Digital Technology Sector. A Location Quotient of 1 is equivalent to the national average.

The strength of the digi-tech sector is concentrated in a few key areas of the county – growth in this sector will benefit from capitalising on the academic strengths Essex has, to help create thriving clusters of innovation. Opportunities for networking and knowledge transfer to match suppliers of digital technnology with demand within Essex will help to ensure that wider economy benefits from this innovation and maximise the ability of residents to access the economic opportunity'.

What is the Government interest in the sector?

The Government's Build Back Better: Plan for Growth highlighted that the UK has a lower proportion of innovating firms overall than other advanced economies and weaker business investment. There is evidence that UK firms are relatively slow to adopt basic digital technologies, such as customer relationship and eCommerce tools that have been shown to have significant productivity benefits. A new HMG Digital Strategy is due for release in 2021.

What is the size of the prize for Essex?

It is important to consider the value to the Essex economy of enabling opportunities for all sectors that are transforming their businesses with digital technologies – as well as that from the growth in the sector itself. Industry 4.0 is driving demand for digital applications and software in traditionally offline industries. There are unique opportunities in some areas for Essex, in particular:

- **Agri-tech** – The north of Essex has a strong potential for growth in agri-tech, with a focus on agricultural use of land for of food production and other uses. The University of Essex has developed partnerships with leading academic research centres, and recently opened the EPIC (Essex Plant Innovation Centre) which focuses on research in a broad range of plant science areas, including agri-tech (such as agricultural robotics)

- **Digital health and care** – There are wide ranging applications of digital technologies to support patients, clinicians, and non-clinical staff. The north of the county is a hub for care services firms and ECC through its statutory role for social care can use this to leverage public investment to develop and deliver care-tech enabled services. Essex County Council has already established a new care technology partnerships, and both University of Essex and ARU carry out research in this area.

There are a number of examples of existing and developing digital technologies that could also bring benefit for Essex businesses, such as:

- **The internet of things** – digital solutions beyond a single element or individual task, integrating into existing systems, linking them up with computers calculating the optimal processes, alongside the potential to automate those processes with robotics

- **Artificial intelligence (AI)** – helping businesses across all industries to gain automated insights from complex data sets faster than in the past, enabling end-to-end efficiency, improved accuracy, and decision-making

- **Quantum computing** – will play an increasing role in powering machine learning systems and AI platforms to better improve, understand, and interpret large datasets and calculations.

Digi-tech Sector Opportunities – Local Business Case Study: Insur-tech

Arma Karma is a new innovative Insur-tech business which was set up in 2019 by two University of Essex graduates and based at the Innovation Centre, Knowledge Gateway in Colchester. Their mission is to bring some 'Good' to the world of insurance. It offers a simple fully digital monthly insurance subscription to protect that things that matter, from phones through to saxophones. Subscribers can cancel at any time with no fees and add or remove covered items at a moment's notice. Arma Karma has already received international recognition for its service offerings and donates 25 per cent of its commission revenue to charities every month, which the subscriber can choose when taking out their subscription. It is growing quickly, and its new flexible approach is seen to address a gap in the market.

Life sciences (including med-tech and care-tech)

What is included in the life sciences sector?

The focus on life sciences for this strategy is refined to 2 particular areas; med-tech and care-tech. Med-tech refers to technology that enables health services through diagnostics, health monitoring and connected devices. Care-tech is technology giving people more control over their health, safety and wellbeing, and support them to be more independent or feel less isolated. It helps to link services, enhances the care or treatment that providers offer; helps communication with families, professionals and staff; and helps staff to prioritise and focus attention on people who need it most.

What does the life sciences sector look like in Essex today?

There is a strong ecosystem and clustering of key components supporting the life sciences and med-tech sectors across the county of Essex:

- There is a particularly strong cluster in **West Essex: Braintree** has recently seen over **£100 million** of government investment into the development of the **Cell and Gene Therapy Catapult Vaccines Manufacturing Innovation Centre**. Its long-term focus to advance the growth of the UK cell and gene therapy industry, by bridging the gap between scientific research and full-scale commercialisation, and to become the UK's primary vaccines manufacturing centre. This development is already stimulating considerable interest and the development of a local cluster

- **Harlow** has growing strengths in the sector with a planned national science hub for the new UK Health Security Agency from around 2025, will have the potential to accommodate circa **2,750 jobs**. It is also home to **Harlow Innovation Park** a 15 hectare greenfield site available for design and build opportunities with a focus on the med-tech, life science, and ICT sectors

- **Harlow Innovation park and Uttlesford's Chesterford Research Park** both sit within the UK Innovation Corridor (UKIC), linking Cambridge and London, and where research and ideas are transformed into commercial products and services. CRP offers advanced laboratory and office space for biotechnology, pharmaceutical and technology R&D companies of all sizes. It is home to international businesses that are making a real difference – Arecor recently won **£2.8 million** of Innovate UK funding to accelerate the development of AT247, a next generation, ultra-rapid acting Insulin

- The proposed new integrated, high-tech healthcare **Princess Alexandra Hospital Harlow,** due to open in 2026. It aims to be the most technologically advanced hospital in the UK and will be a key strength in growing the sector further in the county

- The **University of Essex** has formed a Smart Health Technologies Group (Smart Health-tech), a new multidisciplinary research group within the Faculty of Science and Health and part of the Centre for Computational Intelligence. The main purpose of the research group is to apply information and digital technologies to improve health. The university are also preparing to open a new Institute of Public Health & Wellbeing, so this local strength is set to continue and grow for years to come

- In addition, **ARU in Chelmsford** is the largest provider of health, social care and education courses in the East of England and train doctors in the first School of Medicine in Essex. Their medical Technology Research Centre draws expertise from the Faculty of Health, Education, Medicine and Social Care and the Faculty of Science and Engineering and aims to research and develop biomedical technology solutions for healthcare, pharmaceuticals, medical engineering, and medical devices sectors.

Where is the sector strong within the county?

Growth sector	Life sciences
Basildon	0.27
Braintree	0.31
Brentwood	0.19*
Castle Point	0.06
Chelmsford	0.34
Colchester	0.24
Epping Forest	**0.86**
Harlow	**4.02**
Maldon	0.16
Rochford	0.45
Tendring	0.25
Uttlesford	**0.25**

Table: Workplace employment Location Quotients (compared to Great Britain) highlighted for the life sciences sector. A Location Quotient of 1 is equivalent to the national average.

***Brentwood life sciences LQ has been modified for accuracy. SIC code 72200 has been removed. Unmodified LQ is 3.77.**

Essex has an extremely strong life sciences focus on the London-Cambridge corridor. While this growth will need careful shaping and support to ensure that the benefits are felt within the county, there is also significant opportunity to support the growth of more niche elements of the sector such as care-tech in areas of the county that currently have a relatively low Location Quotient score.

In terms of opportunities for care-tech, a Care Technology Landscape Review report prepared for Future Care Capital (FCC), an independent charity shaping the future of health and social care, recommended that a distinct programme should be developed to capitalise on emerging technologies and ways of working. Beginning with collaboration with key partners to better understand how to enable the development of a wider care technology ecosystem and exploring the challenges in care which need to be addressed. Once this is in place, more coordinated, targeted intervention support should be implemented to help grow the sector and encourage the emergence of a greater number of new solutions helping to provide higher quality care (Future Care Capital, 2021).

What is the size of the prize for Essex?

Essex has a rich history of developing, commercialising, and manufacturing key components and products for the med-tech sector. Teledyne e2v in Chelmsford make the magnetrons and klystrons that generate and control the treatment beam for 96 per cent of all radiotherapy machines world-wide; Olympus Keymed are world leading manufacturers of endoscopy machines; and there are numerous SMEs across the county. Building on these strengths there is a growing demand for med-tech products for diagnostics, digital health, and assisted living support that could be capitalised upon in the county. For example, home diagnostics is a burgeoning market, fast gaining popularity in a world battling the Covid-19 pandemic. With the use of advanced technology, home diagnostic kits enable users to check and monitor their health conditions in the comfort of their homes. The aging population and prevalence of chronic diseases have resulted in rising demand for home healthcare services in the UK. According to UK's Office for National Statistics (ONS), It is projected that there will be an additional 7.5 million people aged 65 years and over in the UK in 50 years' time.

Life sciences sector opportunities – Local business case study

In 2021 Essex-based **Biosure (UK) Ltd** won the prestigious Queen's Award for Enterprise: Innovation.

BioSure (UK) Ltd develop, manufacture, source and distribute rapid tests with the highest levels of accuracy, many rivalling those of standard laboratory tests. The tests they manufacture and supply are used worldwide for the management of human infectious disease.

BioSure provide solutions utilising rapid Point of Care Tests (POCT) and has unique expertise in self-testing. This technology through integration into healthcare settings and for use as self-tests can revolutionise testing protocols, reduce late diagnoses, provide cost effective testing solutions for the general population and engage hard to reach key populations. Ultimately budgets can be spread further through far lower delivery costs and immediate diagnosis.

The aim is to bring cost effective, straightforward, fast and accurate self-testing for disease to the mainstream.

BioSure are the manufacturers of the first CE marked HIV self-test for personal use. Since launching our BioSURE HIV Self-Test in 2015 these products have helped people throughout the UK and the world.

In 2021 they launched the first Covid-19 IgG Antibody Self-Test onto the market and are continuing to develop new self tests for different diseases.

Care and care-tech are clearly an important area for any county council and wider public sector partners such as the NHS – it is a large part of our statutory responsibility and spend. We have an ageing population and want to ensure that they can age and live well. Care and care-tech are an important part of that and represent real opportunity as well as challenge for Essex.

Commercial accommodation requirements

We have assessed the likely accommodation requirements that businesses in the growth sectors will need in the future. This considers: the type of accommodation required; the key supply chain activities that will require it; the typical occupier requirements; existing skills and innovation assets; and key locations for potential growth. Please note that the commentary below does not consider business accommodation for professional services within the supply chains (e.g. architecture and engineering services supporting the construction supply chain).

Construction and retrofit

Whilst many construction components may continue to be imported from abroad and much of the construction workforce will continue to be home-based, the projected growth in construction and retrofit activity will likely increase the need for retail warehousing/trade counter spaces, warehouses and open storage land. Retrofit activity is likely to be spread across the county in proportion to the number of properties.

Essex already has a number of existing construction skills and innovation assets spread across the County, including the i-Construct centre in Braintree, the Construction Skills Centre at Harlow College, and the College Construction Centres in Basildon and Chelmsford.

Essex's four Garden Communities will provide over 30,000 new dwellings in the coming decades, although this is a fraction of the total housing need across the County (over 8,000 new homes per annum). As the industry shifts towards Modern Methods of Construction (MMC), large factories may be required for off-site assembly. Essex already has three such facilities (Swan Housing's light gauge steel modular factory in Basildon, Swan Housing's cross-laminated timber modular factory in Basildon, and Weston Homes' British Offsite factory in Braintree) – but more will be required to meet projected growth. Given the land-hungry nature of MMC factories, they may be more easily accommodated as part of large new employment areas such as those within the Garden Communities.

Clean energy

Power generators in the clean energy sector will need sites with access to and capacity within the energy distribution network, and waterside locations will be required for nuclear and offshore wind. Existing energy skills and innovation assets include the Galloper Wind Farm operations based in Harwich and the Harwich Energy Skills Centre. There is potential for further growth in offshore wind from the southern North Sea as well as hydrogen production and distribution associated with Freeport East.

Light industrial space will also be needed for the operation and maintenance of generation and distribution infrastructure. The south of the County, where development densities are higher, may support more District Heat Networks. The middle of the County, which is more rural but has moderate agricultural quality, may accommodate more solar farms.

Advanced manufacturing and engineering

The advanced manufacturing and engineering sector needs a wide variety of sizes and types of business accommodation for component manufacture and assembly operations, but most will benefit from sites with good access to the strategic road network and public transport interchanges and adequate utilities capacity. Existing skills and innovation assets include the Ford Dunton Campus in Basildon, the STEM Centre in Braintree, and the Harlow Advanced Manufacturing and Engineering Centre. Many highly qualified employees already work in Basildon, Braintree, Chelmsford, Harlow and Maldon.

Research facilities will also be needed for the design, testing, and commissioning of new products and smaller-scale production processes. Teaching spaces and conference facilities can be important forums for knowledge-sharing and collaboration with partners.

Anglia Ruskin University in Chelmsford and University of Essex in Colchester provide relevant skills and innovation infrastructure, and clusters of high-tech companies are already established along the A127 in Basildon, at Knowledge Gateway in Colchester, EOS in Braintree, and MODUS in Harlow. There may be the potential to develop Innovation Districts within larger town centres and existing employment areas as their uses continue to diversify.

Digi-tech

Most Essex businesses will benefit from futureproofed broadband access such as Fibre to the Premises and 5G, and the Superfast Essex programme works with operators and central government to make superfast and ultrafast broadband available to as many businesses across Essex as soon as possible. Businesses that design, develop and test software require a highly qualified workforce – and teaching spaces and conference facilities can be important forums for knowledge-sharing and collaboration with partners.

The Essex & Hertfordshire Digital Innovation Zone is a partnership including the districts of Harlow, Epping and Uttlesford that supports innovations such as smart city technologies and the Internet of Things, as well as digital inclusion projects.

Supercomputing facilities are typically required close to Big Data generators such as those within the UK Innovation Corridor and require secure buildings with controlled environments and the ability to transfer large volumes of data to and from data centres at high speed. The NVIDIA Cambridge-1 supercomputer is located at Kao Data Park in Harlow, and forms part of the University of Cambridge Light Blue Fibre network.

Essex has a number of existing skills and innovation assets relevant to this sector, including the Centre for Digital Technologies in Basildon, Institute for Analytics and Data Science at University of Essex in Colchester, and USP College Centre of Excellence for Digital Technologies on Canvey Island. Town centres and high streets, with their excellent connectivity and amenities, could accommodate SME's and larger companies in this field. South Essex is part of the Thames Estuary Production Corridor.

Life sciences (including Med-tech and Care-tech)

Businesses that design, test, and commission new products within the field of life sciences typically require controlled environments for different types of laboratories such as wet labs, microbiological/clinical labs, and in vivo labs. They require a highly qualified workforce, and teaching spaces and conference facilities can be important forums for knowledge-sharing and collaboration with partners. CareTech businesses report a shortage of environments for testing their products, ranging from private dwellings to independent living developments and care homes.

As well as a large workforce at Chesterford Research Park, Essex has a number of skills and innovation assets relevant to this sector including the Cell & Gene Therapy Catapult Vaccines Manufacturing Centre in Braintree, Anglia Ruskin University in Chelmsford, Essex Biomedical Sciences Centre at the University of Essex in Colchester, the Centre for Health and Social Care Professionals in Colchester, and Arise Innovation Hub in Harlow and Chelmsford. The UK Health Security Agency headquarters is also planned to be located in Harlow. There may be the potential to develop Innovation Districts within larger town centres and existing employment areas as their uses continue to diversify. ARU has developed 3 Research Innovation and Impact themes which present an opportunity to increase research and innovation impact including Health Performance and Wellbeing.

Our track record

To date, our role in shaping the economy of the county has faced challenges in areas such as skills provision and infrastructure development. As a result, Essex faces a number of barriers that stand in the way of progress towards a stronger, more inclusive, and more sustainable economy:

- Essex has traditionally had a **higher number of commuters** to other employment areas – however, results from Cambridge Econometrics forecasts for Essex show that, across the county and its large urban areas, relative to pre-Covid levels, there is expected to be a notable decrease in the number of workers commuting to their workplace more than 50 per cent of the working week by 2030 (Cambridge Econometrics, 2021)

- There are a **dearth of new employment/ commercial sites** coming through compared to the scale of planned housing growth

- We have **fewer large businesses than some comparator areas**, many of which are foreign owned thereby reducing the larger financial benefits being retained within the county

- Essex falls **short on higher qualification levels** compared with the national and South East averages

- There are **poor public transport connections** outside of the traditional commuting routes towards London, leaving local areas of growth like Harlow isolated from one and other in the county.

These challenges are further highlighted when Essex's position is analysed in comparison to the rest of the UK. The Confederation of British Industry (CBI) have produced a growth analysis paper Reviving Regions (Confederation of British Industry, 2020) that shows three of the four Essex growth corridors are 'losing ground' to the national average across 16 measures in areas which are key to growth:

Districts	Haven Gateway	West Essex	Heart of Essex	Essex Thames Gateway
Household income [1]	Level	Better	Better	Better
Employment rate [2]	Worse	Better	Level	Better
Deprivation index (lower = better) [3]	Level	Better	Better	Better
Life satisfaction index [4]	Worse	Better	Better	Better
Productivity [5]	Level	Better	Better	Better
School above standard [6]	Level	Level	Level	Level
Graduates in workforce [7]	Worse	Better	Level	Worse
In-work training [8]	Worse	Worse	Worse	Worse
Broadband speed [9]	Worse	Better	Worse	Worse
Commute time (lower = better) [10]	Worse	Worse	Worse	Worse
Home working index [11]	Worse	Better	Better	Level
Median house prices (higher = better) [12]	Level	Better	Better	Better
R&D per head (Essex) [13]	Worse	Worse	Worse	Worse
Innovation activity (East of England) [14]	Level	Level	Level	Level
High growth firms [15]	Worse	Better	Worse	Better
Export intensity [16]	Worse	Better	Worse	Better

- Better than national average
- Level with the national average
- Worse that the national average

Table 1: Analysis of the CBI report 'Reviving Regions' comparing Essex to national averages.

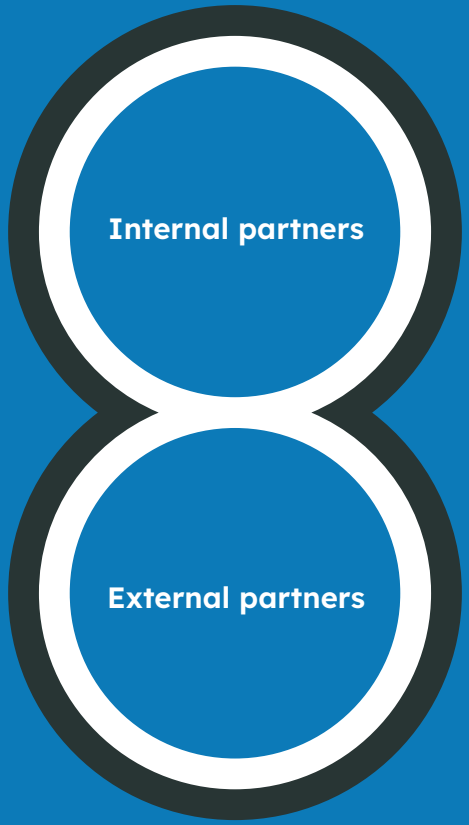
90%

Essex businesses with 10 or less employees

The table shows Essex split into the four recognised growth corridors and for each of the 16 measures scores Essex as green (better than national average), amber (level with the national average), or red (worse that the national average). From this we can see there are clear weaknesses pan-Essex in R&D investment, in-work training, and commuting time. It is fair to allocate some of these issues as result of the pandemic, but others are persistent issues that pre-date March 2020. For example, in 2018 the Essex Economic Commission identified the relative lack of large firms in Essex, driven by a lack of Foreign Direct Investment (FDI), as a key impact on both the number and skill/pay level of jobs in Essex. While this remains an issue (Essex has a higher proportion of micro businesses than the national average, with over 90 per cent of all businesses having fewer than 10 employees), smaller businesses often have agility and an ability to quickly re-pivot to take advantage of new market opportunities (Cooper, 2020). Tapping into this agility, especially with regard to green growth opportunities, will be a focus for the recommendations of the strategy.

Our role in sector development and change-making partnerships

Essex County Council is leading the development of this strategy based upon firm evidence and discussions with partners across the county, but we cannot do this alone; the success of the strategy will rely on a multitude of partners to support delivery across Essex.



Internal partners

The sector development work includes strong links to several ECC workstreams and strategies: the new ECC **Essex Skills Plan;** the emerging **Digital Strategy;** the new **Inward Investment Strategy;** and the **Marketing Essex Initiative.** We continue to work alongside colleagues to support delivery of goals around sustainability, aligning with the **Essex Climate Action Commission.** This enables the Sector Development Strategy to form part of a suite of documents setting out how the future economy of Essex will achieve a more prosperous and sustainable county for the people and businesses of Essex.

Essex County Council will have a range roles to fulfill including:

- Direct control (for example investment in public estate for retrofit)
- Procurement (our supply chain)
- Place shaping
- Showcasing (for example net zero schools/housing)
- Partnerships (for example with other anchor institutions)
- Involving, engaging and communicating
- Convening and coordinating wider partnerships.

£500m

Annual expenditure for the delivery of care in Essex

Case study: Leveraging public sector spend in adult social care in Essex to support the care-tech sector

Essex County Council spends more than **£500m** delivering care to the most vulnerable across the county every year. This budget covers support to approximately **16,000 adults** of which the majority are older people, but also includes over 4,000 people with learning disabilities, over 2,000 people with physical or sensory impairments and over 700 people with mental health needs.

One of the biggest challenges facing the council is that demand for care is growing, with the population of older people in Essex expected to grow by **21 per cent** over the next decade and those aged over 85 expected to grow by **more than 60 per cent**.

Working with the Adult Social Care function within ECC to deliver the best possible service to our residents and meet rising demand is therefore a priority. Using this significant spending to invest in the care-tech sector and maximise the efficiency and effectiveness of the service, whilst supporting the growth of a nascent sector that will bring economic benefits to Essex is a significant opportunity. The Adult Social Care service recognises the important role care technology can play in helping to achieve its vision for every adult to be able to live as independently as possible and to enjoy a good and meaningful life. ECC has commissioned providers to work in a strategic partnership with the wider health and social care system across Essex. The aim is to deliver and embed a cultural change programme that uses care technology as a first line of response in meeting eligible care need and in preventing, reducing, and or delaying, the escalation of that need. ECC has specifically built social value into this contract and so there are clear outcomes expected to be achieved concerning supporting inclusive employment for adults with disabilities and the unemployed, and also around climate change by reducing CO2 emissions.

External partners

We have looked across the county and focussed on key growth sectors to assess our strengths and where the opportunities lie, and have engaged with partners across the public sector, academia, and private sectors in Essex to develop this strategy, as well as national and regional representative organisations.

Capturing the opportunities presented by national initiatives will be key – as an example, the government's **Net Zero Strategy: Build Back Greener** highlights the scale of the economic opportunity across the country that green growth hopes to bring:

Sector	Jobs supported by 2024/5	Jobs supported by 2030
Power	59,000	120,000
Fuel supply	-	10,000
Industry	5,000	54,000
Heat and buildings	100,000	175,000
Transport	22,000	74,000
National resources and waste	2,000	2,000
Total	**190,000**	**440,000**

Table: Estimates of jobs supported in net zero strategy pathways from the Government's net zero strategy (BEIS, 2021).

Taking the strategy forward and capturing Essex's slice of this growth will only be achieved if done in partnership, with a shared and collective responsibility. We can start already by harnessing the spending power of the public sector and our anchors in creating growth markets that are nationally in demand and which our businesses can tap into, such as the retrofit sector, where local businesses can develop the skills and ability to thrive in the wider economy.

12,800

New roles required for retrofitting jobs in Essex

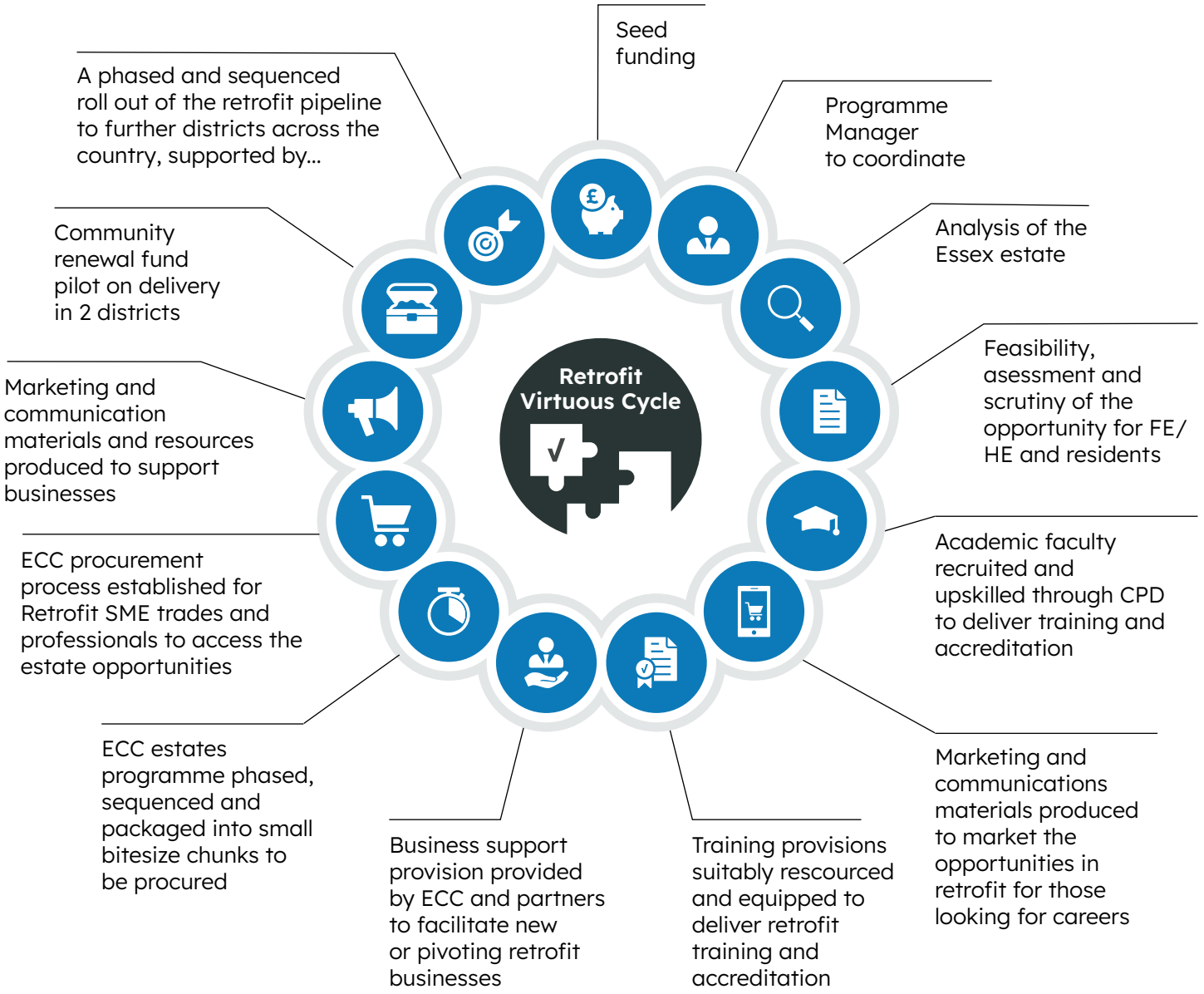
Case study: The role of the public estate in driving demand for the retrofit sector

Nationally we need an 'army' of retrofit businesses and tradespeople, to meet the minimum EPC 'C' target by 2030, in addition to the 50,000 retrofit coordinators and associated designer and advisor roles. UK100 data noted Essex as a county which could reap the greatest benefit from retrofit, with more than **12,800 new roles** needing to be created. We estimate the economic opportunity of growing the retrofit sector to meet this challenge in Essex be in excess of £15 billion. However, at present energy efficiency projects such as retrofit are generally awarded to companies from outside the county. There is a lack of local supply chain capacity and capability and local tradespeople are generally at capacity with standard repairs and maintenance. Consequently, there is insufficient motivation for SME's to scale up to embrace the low carbon opportunity.

To meet the demands of this retrofit challenge a locally based qualified workforce will be required, along with Essex-based firms primed and ready to take on work as it comes forward. The skills and training system also needs to align to support and be supported to take advantage of this new area. There is therefore a role for ECC as a local authority to work with central government and a network of partners to provide confidence in the retrofit market and to kickstart the move to decarbonising our buildings, lowering emissions, and growing the retrofit business and the skills base within the county. By leveraging the scale of the retrofit need for the public sector working with others to directly train and fund local businesses to take on the work, we can create a circular economy where those trained and given work through this process will have transferrable skills and experience to take back to the private sector. This will help Essex to be at the forefront of wider retrofit in commercial and domestic setting and keeping jobs local and the money spent within the essex economy.

ECC has a role to play in articulating this market and with investment, both monetary and in resource with partners, ECC can help aid and kickstart the retrofit market and grow the sector within the county – and create a virtuous circle.

Figure 5: The Retrofit virtuous circle



Our sector development strategy

The **Sector Development Strategy** will be a driver of growth in jobs and productivity within five sectors, but to also be a key contributor to our wider goals for the whole economy to become more innovative, inclusive, and sustainable. There are specific opportunities for our sector work to contribute to:

For each **strategic goal** we have identified outcomes that the whole Essex system should try to come together to deliver – in keeping with the recognised interdependencies of the sectors and strategic goals, many of the outcomes themselves will also be connected to more than one goal. These 3 pillars form the strategic identity of our sector development work – they are how we will signal our intent and articulate the needs and wants of Essex to the public, to government, and to businesses. Through these goals we can demonstrate the value we can deliver, and make sure Essex isn't left behind on agendas such as Levelling Up where the south east is sometimes overlooked.

Strategic goal 1: A thriving economy

Making Essex a centre of innovation and entrepreneurial spirit where the benefits of this growth are felt within the county rather than elsewhere.

Essex has a rich history of technical innovators including Marconi and Sir Charles Kao, and innovations such as the Bentall Plough, the discovery of Argon, and the development of digital colour photography. Building on this legacy of innovation is key priority for the strategy, as in recent times Essex has consistently struggled to perform as well as comparable areas in traditional measures of productivity – peer areas such as Hertfordshire, Surrey, Suffolk, and Berkshire outperform Essex in terms of GDP per head.

If Essex is to achieve its ambition to match and outperform its peers in terms of economic performance, businesses must embed innovation. We and our partners must support local Essex businesses to innovate and commercialise that innovation.

One of the main barriers to embedding innovation in local businesses is that Essex has historically underperformed in terms of gaining innovation funding and Essex businesses have failed to invest in R&D to the same level as businesses in peer areas. Essex County Council and other partners can play a key role in driving awareness and ambition amongst business, creating an innovation culture and encourage business investment in R&D and innovation. More needs to be done to enable businesses to access the opportunities and encourage businesses to be ambitious. Through working together we will increase inward investment where it is needed most, and businesses supported to deliver greater productivity growth.

Outcomes

There are pockets of innovation in Essex and we need to build on this to embrace the innovative and entrepreneurial spirit of Essex to generate transformational economic growth, the outcomes this strategy seeks to deliver are:

1. Increased employment in high quality jobs across the five sectors

2. Increased R&D funding per head to competitive levels with peers and enabling local SME's to access the funding and support that is available

3. Quality commercial premises that meet the needs of the growth sectors and building clusters that foster innovation. We can achieve this by working with partners to deliver a choice of business of accommodation in strategic locations across the county to make the most of local assets and get the right growth in the right place

4. A digital enabled business community that can take full advantage of innovation and technology to build competitive advantage and grow their business

5. Provide all citizens with the skills and confidence to use online tools and take advantage of digital services and employment opportunities irrespective of their financial, educational, or social status.

Strategic goal 2: An economy for everyone

Ensuring every resident of Essex has the opportunity to gain the skills and experience to succeed in the future economy regardless of their background and identity

An effective skills system is one where skills planning and provision balances the current and future skills needs of the economy with the demands of residents, giving all individual learners and employers the best possible chance of realising their potential. Developing this will require close collaboration between skills providers and businesses to develop tomorrow's workforce, to improve the industry-relevance of qualifications, enhance awareness of career opportunities and support capital investment in delivering Further and Higher Education capacity.

The post-covid recovery of the Essex economy is expected to be uneven. According to projections from Cambridge Econometrics, some areas of Essex are not expected to reach pre-covid levels of growth until at least 2030 (Cambridge Econometrics , 2021). We have chosen our sectors of the future based on the potential for growth, and the benefits they will bring to Essex and Essex residents; including addressing the cost of living crisis in the case of retrofit. Retrofitting homes for energy efficiency could alleviate the number of people falling into fuel poverty. There is, however, the potential for certain groups to miss out on this growth – including women. For example, construction is projected to have large amounts of growth in the near future – yet only 2 per cent of those in skilled construction and building occupations are female. Automation is also likely to have an uneven impact, particularly for women – with 70 per cent of jobs at high-risk of being automated being held by women (Office of National Statistics, 2019). This makes it even more crucial that Essex is able to harness the sectors of the future and ensure that women and other under-represented cohorts are aware of opportunity and have access to the skills needed to secure them. Working practices will need to change to reflect the needs of businesses and workers in future.

The Success Essex Prosperity and Productivity Plan (2019) highlights that the county's skills profile is improving, as new, better-qualified entrants to the labour market gradually replace those who leave. However, **only around 35 per cent of the workforce in the Essex County Council area are qualified to NVQ4 or higher, compared with 43 per cent in Great Britain as a whole, and around 45,000 people have no formal qualifications at all** (NOMIS, 2020). These county-wide figures mask significant divergence across the county – tackling the underlying causes of this disparity, accounting for variations in demography, is a clear priority.

The Outcomes

To tackle these underlying issues and build a more inclusive economy full of equal opportunity, the outcomes this strategy seeks to deliver are:

7. A skills system aligned to the employment market and opportunities across the whole of the county, taking into account regional differences

8. A clear understanding and collaborative approach between the whole school system, HE and FE, other skills providers, local government, anchor institutions, and employers towards the skills needed for employment in the five growth sectors

9. Clear pathways of employment from traditional sectors into the five growth sectors

10. Equality of opportunity within our in growth sectors.

Strategic goal 3: An economy fit for the future

Making green growth intrinsic to all future growth to ensure we meet our target for a net zero county by 2035

Green growth will be crucial to the future of every economy and in line with national policy and global thinking we are clear that Essex will play its part. It is not only a matter of growing 'green' sectors as an individual part of the economy – we will need to make every part of the economy as sustainable as possible, from the largest corporation to the smallest local business in order to meet our ambitious net zero targets and deliver the massive potential in jobs and investment.

Our definition of 'green growth' promotes all activities, businesses, jobs, and processes that reduce or avoid detriment to our environment or natural resources, and those which actively seek to redress the balance. This includes identifying and reporting on our own emissions (both direct and indirect) all the way through the value chain (Scope 3)[3] and supporting partners and businesses to do likewise.

All Essex based businesses have a responsibility to play a role in building a green circular economy, through their premises, supply chains and through the manufacture or delivery of products and services:

3. Greenhouse gas emissions are categorised into three groups or 'Scopes' by the most widely-used international accounting tool, the Greenhouse Gas (GHG) Protocol. Scope 1 covers direct emissions from owned or controlled sources. Scope 2 covers indirect emissions from the generation of purchased electricity, steam, heating, and cooling consumed by the reporting company. Scope 3 includes all other indirect emissions that occur in a company's value chain. Briefing: What are Scope 3 emissions? | The Carbon Trust.

Outcomes

To capture these opportunities for Essex and embed a truly sustainable economy for the county the outcomes this strategy seeks to deliver are:

11. Reduced emissions in line with our ambition to become net zero

12. Decentralised and de-carbonised energy system

13. Sustainable new homes and a thriving retrofit sector to improve existing homes

14. Essex at the forefront of low carbon (solar, offshore wind, nuclear and hydrogen) energy development and employment

15. Harnessing innovation to reach our net zero ambitions.

From theory to reality – Delivering the strategy

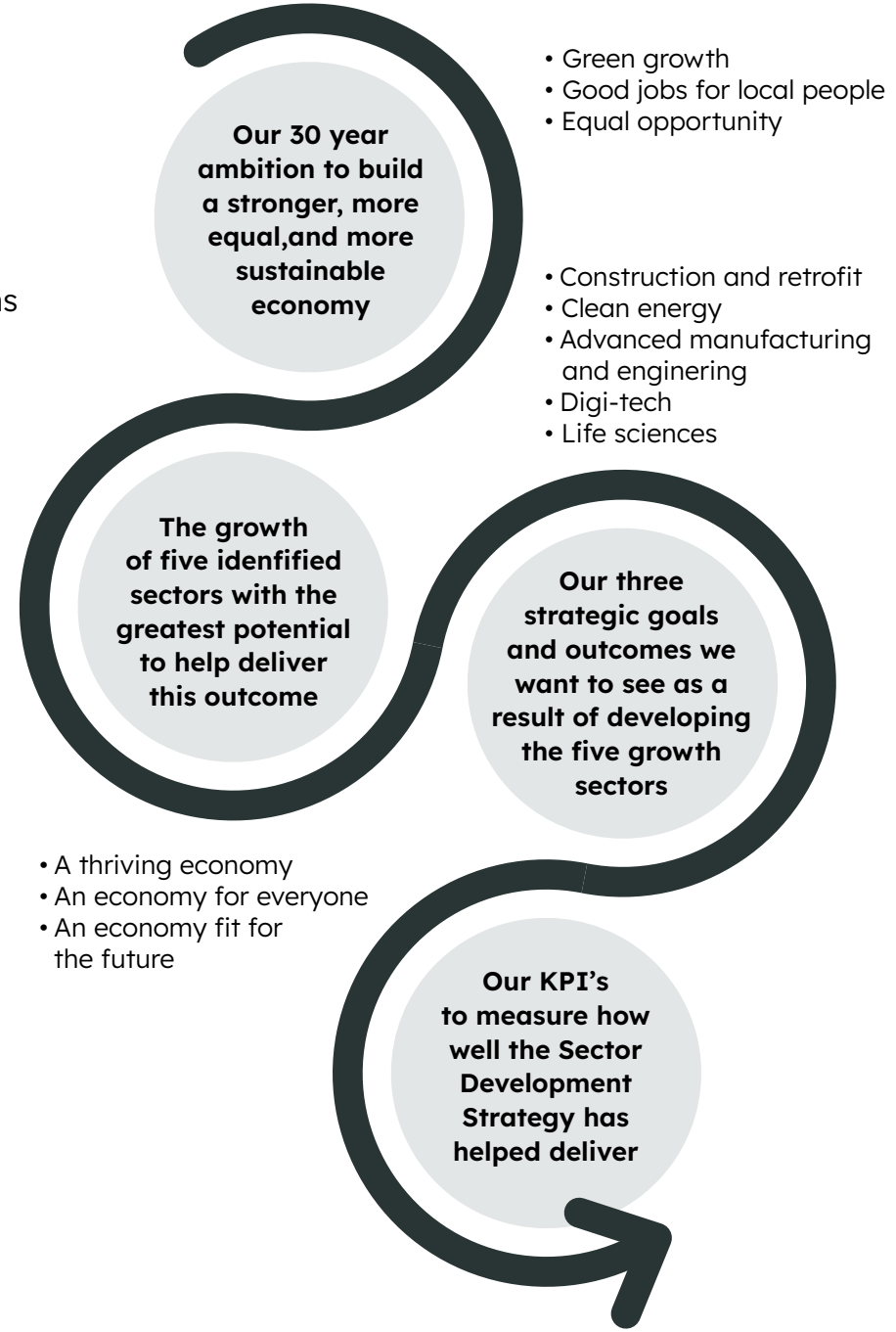
In order to meet these strategic goals and outcomes, the strategy will be followed by a **Delivery and Action Plan** which will make recommendations on what needs to be done to unlock the benefits of developing the five Key Growth Sectors; who will have to act; what investment or action is required; and when it should be done.

These recommendations will include key areas of systemic change that the whole Essex system must work together to address, as well as the groundwork-laying actions we can take to directly support the growth of the five identified sectors. While the strategy is primarily concerned with grasping the transformational opportunities ahead of us, we must also be clear that everyone has a role to play in ensuring the risks of failing to deliver that would further entrench inequality are avoided. Our Delivery and Action Plan will highlight where investment can land real change for the county - and provide Essex with the chance to secure more funding from public sector opportunities such as the Shared Prosperity Fund as well as private inward investment.

This strategy is the start of the conversation with a wide ranging set of partners on the future economy of the county – all the recommendations made in the delivery and action plan will be **co-created** and **agreed collaboratively.**

Throughout the strategy we have been clear that everything we all must do to support the creation of a stronger, more equal, and more sustainable economy that works for everyone. To that end we are also clear that the performance of the strategy feeds into the performance of the wider organisation and its delivery on the commitments in the plan for Essex.

The connection between this strategy and our Levelling Up agenda is also crucial – understanding how we can deliver opportunities in the growth sectors of the future to the places in Essex that need them most is an important consideration for the actioning the recommendations of the strategy.



Equalities considerations

We want to create opportunity for women in traditionally male dominated sectors to build a more equal future economy. Addressing this systemic issue along with engagement with the education system at the earliest opportunity to make young women aware of the wide variety of opportunities within the sector and highlighting role models will be crucial in hitting our aims for a more equal economy.

Construction

Nationally, 2 per cent of those in a 'skilled construction and building trade' occupation are women (ONS, 2011). In terms of working hours, women also make up 2 per cent of full time roles and 11 per cent of part time roles (ONS, 2020). In Essex, there are approximately **24,500 people working** in the 'construction and building trades' occupation (ONS, 2019). Applying the national per cent distribution between genders, we can assume there are approximately **490 women employed** in the construction sector in Essex.

Energy

Nationally, 8 per cent of those in a 'energy plant operative' occupation are women (ONS, 2011). In terms of working hours, women also make up less than 2 per cent of full time roles and almost 100 per cent of part time roles (ONS, 2020). In Essex there are **450 people employed** in the Energy SIC code group (ONS, 2019). Applying the national per cent distribution between genders, we can assume there are approximately **36 women employed** in the energy sector in Essex.

Advanced manufacturing and engineering

Nationally, 12 per cent of those in an 'engineering professional' occupation are women (ONS, 2011). In terms of working hours, women also make up 11 per cent of full time roles and 31 per cent of part time roles (ONS, 2020). In Essex, there are **11,048 people employed** in the 'engineering professional' SOC code (ONS, 2019). Applying the national per cent distribution between genders, we can assume there are approximately **1326 women employed** in the engineering sector in Essex.

Digi-tech

Nationally, 19 per cent of those in a 'information technology and telecommunications professional' occupation are women (ONS, 2011). In terms of working hours, females also make up 17 per cent of full time roles and 48 per cent of part time roles (ONS, 2020). In Essex there are **20,635 people employed** in the 'information technology and telecommunications professional' SOC code (ONS, 2019). Applying the national per cent distribution between genders, we can assume there are approximately **3,920 women employed** in the digi-tech sector in Essex.

Life Sciences

Nationally, 48 per cent of those in a 'natural and social sciences professional' occupation are women (ONS, 2011). In terms of working hours, females also make up 44 per cent of full time roles and 72 per cent of part time roles (ONS, 2020). In Essex we estimate there are **5,000 people employed** the 'life sciences' SIC code group (ONS, 2019). Applying the national per cent distribution between genders, we can assume there are approximately **2,400 women employed** in the life sciences sector in Essex.

Essex County Council

Where to go next

Below you'll find a whole host of links to help you take the next step on making your new dream career a reality:

Government Careers Service – https://nationalcareers.service.gov.uk/
Essex Opportunity Portal – https://www.essexopportunities.co.uk/
Essex Business Support – https://backingessexbusiness.co.uk/
Adult Community Learning Essex – https://aclessex.com/
Federation of Essex Colleges – https://www.federationofessexcolleges.org/
Essex Provider Network – https://essexprovidernetwork.com/

This information is issued by:
Essex County Council
Sustainable Growth

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The information contained in this document can be translated, and/or made available in alternative formats, on request.

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If you'd like to know more about our plans for developing the sectors of the future and to read our strategy, scan this QR code: