



Greater Lincolnshire LEP – Brexit economic analysis

Final Report

May 2018

Metro — Dynamics



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Executive Summary

Metro Dynamics has been commissioned by Greater Lincolnshire LEP (GLLEP) to assess the exposure of the region's economy to the potential impacts of Brexit. This has involved analysis of the opportunities and challenges arising from Brexit for GLLEP's sectors. Our analysis has been carried out in two stages: an initial high-level analysis phase looking at nine sectors, followed by more detailed analysis of four priority sectors.

In the high-level analysis, exposure to Brexit has been assessed for nine key sectors of the GLLEP economy: health and social care, agriculture, food processing, manufacturing (excluding food), offshore wind, ports and logistics, visitor economy, life sciences and medical research (including pharmaceuticals), and construction. Table 1 shows the results of our qualitative high-level assessment of Brexit exposure in these nine sectors.

Following this, four sectors have been chosen to be taken forward for an in-depth, detailed analysis, identifying key sub-sectors of local strength within each sector in terms of employment and specialisation, analysing the geographic distribution of these strength at a granular level across the LEP area, and providing a detailed assessment of potential sectoral exposure to Brexit. Exposure to potential impacts of Brexit has been analysed in depth for food processing, manufacturing (excluding food), ports and logistics, and visitor economy.

Main findings

There remains significant uncertainty about the form Brexit may take. Based on the most likely scenario, Brexit offers Greater Lincolnshire the opportunity to support people with lower skills levels to enter the labour market, due to lower competition from EU workers in sectors which previously relied on a large EU workforce. Businesses are pivotal in building the local skills base by offering training and apprenticeships, and by developing clear paths for career progression. There is also an opportunity for sectors and businesses to export to new markets beyond the EU.

Overall, economic analysis shows that there will be a net negative effect, but the severity of impacts will differ geographically, depending upon the sectoral composition of the local economy. Even within sectors, different firms will be affected in different ways as a result of the specifics of their business model – e.g. the amount of EU labour they employ, and the importance of EU imports and exports in their supply chains. There are also linkages between sectors, that mean that the exposure to Brexit is broader than an analysis of a single sector in isolation might suggest. For example, the food processing industry is exposed to the impacts of Brexit on agriculture and to the impacts of Brexit on the ports and logistics sector (and vice versa).




		Size of employment and specialisation, and strategic importance in GLLEP	BREXIT EXPOSURE			POTENTIAL IMPACT IN GREATER LINCOLNSHIRE LEP ECONOMY
			 Trade & regulations	 Workforce	 Funding & investment	
Key sectors considered in detailed analysis	Food processing	Very large	High	High	Medium	<u>Very high</u>
	Manufacturing (excluding food)	Very large	High	High	Medium	<u>Very high</u>
	Ports and logistics	Very large	High	High	Lower	High
	Visitor economy	Large	Lower	High	Lower	Medium
Other sectors considered in high-level analysis	Health and social care	Large	Lower	High	Lower	Medium
	Agriculture	Very large	High	High	Medium	<u>Very high</u>
	Offshore wind (low carbon)	Large	Lower	Medium	Medium	Medium
	Life sciences and medical research (including pharma)	Medium	Medium	High	High	Lower
	Construction	Very large	Medium	High	Medium	High

Table 1 – High-level assessment of Brexit exposure in GLLEP’s key economic sectors

Food processing

Food processing is anticipated to have the largest trade impacts of any sector, in part due to the extent of trade between the UK and EU (60.0% exports and 77.1% imports), but also the size of tariff and non-tariff barriers. For exporting food processing companies to continue trading with the EU, continued compliance with current regulations will be necessary, offering limited scope for deregulation. However, tariffs as high as 12.7% under current free trade agreement (FTA) and World Trade Organisation (WTO) rules may incentivise UK consumers to buy British produce, benefiting domestic food manufacturers. There is also seen to be opportunity to expand exports beyond the EU.

The potential exposure of the sector to impact on workforce is likely to be high, due to the reliance on EU migrants to fill labour shortages. Much of the work in this sector is low skilled and seasonal, further exacerbating exposure, as low-skilled workers are most likely to lose out from Brexit. Exposure to changes in EU funding is likely to be a secondary impact of changes to the Common Agricultural Policy (CAP) in the agricultural sector. Uncertainty around trade and workforce may also undermine investment in the sector.

Manufacturing (excluding food processing)

Manufacturing (excluding food processing) is highly exposed to Brexit impacts on trade. Trade of manufactured products is very high (over 90% total goods exported and imported) and the EU is an important trading partner (48.0% of exports and 56.8% of imports). UK manufacturing is highly integrated with complex European supply chains with goods moving across international borders, leaving the sector highly exposed to potential trade barriers (such as tariffs, rules of origin and significant levels of bureaucracy and border checks). There is limited scope for deregulation as continued compliance with EU product safety and standards is key to facilitating trade.

EU workers are important across the skills spectrum in manufacturing, due to existing skills shortages. At the lower end of the spectrum, it may become difficult to recruit lower-skilled workers if future migration policies impose skill and salary thresholds. It may also become difficult to fill shortages of highly-skilled workers, due to negative perceptions of the UK or difficulties in seconding engineers at short notice. In this sector, the role of businesses in improving local skills provision is particularly important. The manufacturing sector greatly benefits from EU funding for innovation and productivity gains. It is uncertain whether these funds will be replaced post-Brexit, and what will be the long-term impacts on private and foreign investment.

Ports and logistics

Exposure to the impact of Brexit on trade in the ports and logistics sector is likely to be focused on non-tariff barriers, particularly customs checks. It is anticipated that additional administration will cause delays to the detriment of time-sensitive supply chains in many sectors. Essentially, delays at ports will amplify up the supply chain, causing additional costs for both the ports and companies in other sectors, for instance through the necessity of having to invest in greater warehousing.

In terms of the sector's regulatory environment, Brexit offers UK ports the opportunity to bypass the potentially damaging European Port Services Regulation, which is thought to negatively impact investment. The sector is exposed to the restriction of EU immigration, as EU workers are pivotal to filling labour shortages, particularly in logistics (e.g. HGV drivers and warehouse operatives). These roles are often low-skilled, exposing the sector further.

Visitor economy

The exposure of the visitor economy to Brexit is likely to be highest in terms of the implications for the sector's workforce. There is a very high reliance on EU workers in this sector, particularly in some occupations such as waiting staff where 75% of workers are EU migrants. EU workers often work in hard-to-fill vacancies, which are prevalent in the sector.

Brexit offers the visitor economy the opportunity to continue the positive trend in increased visitor numbers for both domestic and foreign visitors, which has occurred alongside the depreciation of sterling since the referendum. This may reverse if the pound recovers or the UK becomes less attractive as a tourist destination due to more difficult border controls or negative perceptions. There is little leeway for more flexible EU regulation, as the protection of consumers is critical to the UK being considered as an attractive tourist destination.

Emerging policy priorities

Our analysis suggests the following potential policy approaches that the LEP might take to support businesses in the period ahead:

- Support local businesses to become 'Brexit ready' by ensuring local businesses have adequate support to address new administrative challenges and costs resulting from Brexit, as well as using the Local Industrial Strategy to support local firms to make the transition to a post-Brexit marketplace successfully.
- Develop local skills to mitigate against the impact of Brexit on EU labour in key sectors.
- Ensure Greater Lincolnshire is 'open for business' by strengthening the local strategies for place marketing and inward investment, and continuing to support the growth of the visitor economy to ensure place promotion is strong.
- Strengthen key sectors by encouraging innovation, collaborating with other regions elsewhere to strengthen and promote key sectors, continuing to implement and develop priority sector plans, and carrying out a comprehensive review of the area's infrastructure.

1 Introduction and Methodology

Introduction

- 1.1 Metro Dynamics has been commissioned by Greater Lincolnshire LEP (GLLEP) to assess the exposure of the region's economy to potential Brexit impacts.
- 1.2 Brexit has created uncertainty for local economies around the country, including Lincolnshire. Uncertainty is ongoing, as the UK and EU are currently negotiating the UK's exit terms from the EU and the two-year transition period. Brexit poses opportunities and challenges for businesses in the LEP area and these vary across sectors.
- 1.3 In this report, potential opportunities and challenges arising from Brexit for GLLEP's sectors have been analysed.
- 1.4 The structure of the report is as follows:
 - The remainder of this section is the methodology, outlining our approach, Brexit scenarios and sectoral exposure.
 - Section 2 analyses in detail employment, specialisation and spatial patterns, and exposure to Brexit for four sectors.
 - Sector 3 provides a high-level analysis of Brexit exposure for five other sectors.
 - Sector 4 sets out emerging policy priorities for GLLEP.

Our approach

- 1.5 Our analysis has been carried out in two stages: high-level analysis and detailed analysis. In the high-level analysis, exposure to Brexit has been outlined for nine key sectors of the GLLEP economy. Table 3 in Appendix 1 summarises the high-level assessment of Brexit exposure for these sectors.
- 1.6 Following this, four sectors have been chosen by GLLEP to be taken forward for an in-depth, detailed analysis, identifying key sub-sectors of local strength within each sector in terms of employment and specialisation, analysing the geographical distribution of these strengths at a granular level across the LEP area, and providing detailed assessment of potential sectoral exposure to Brexit.
- 1.7 In the high-level analysis, exposure to potential Brexit impacts has been assessed for the following economic sectors:
 - Health and social care;
 - Agriculture;
 - Food processing;

- Manufacturing (excluding food);
- Offshore wind;
- Ports and logistics;
- Visitor economy;
- Life sciences and medical research (including pharmaceuticals);
- Construction.

1.8 Following this first stage, we were asked to look in detail at four sectors:

- Food processing;
- Manufacturing (excluding food);
- Ports and logistics;
- Visitor economy.

1.9 For each of the four sectors, a detailed analysis of the potential impacts of Brexit has been conducted. This relies on an evidence base composed of three elements:

- Firstly, our Metro Dynamics Brexit Intelligence Database, which cumulatively accounts for thousands of pages of analysis. This database collects and systematises a large repository of third-party analyses and most recent publications, including:
 - Official documents and statements by Government departments and official institutions.
 - Reports by think tanks, foundations, NGOs, law firms, trade and sector associations, etc.
 - Papers and reports by academic institutions.
 - Other relevant information, including statements by expert commentators, relevant political actors, etc.
- Secondly, economic data from GLEP, ONS and other official datasets.
- Thirdly, business data from our company database, supplemented with qualitative research.
- Lastly, this research has been framed within existing GLEP strategies and priorities, such as the sector action plans and Strategic Economic Plan (SEP).

1.10 Exposure to Brexit impacts has been assessed across three dimensions:

- **Trade and regulations** – this includes the possible introduction of tariff barriers and non-tariff barriers, such as customs checks, packaging and product standards, passporting rights and

border controls, and the extent to which this can be mitigated by a future trade deal. It also considers the significance of EU directives currently incorporated into UK law across the different sectors.

- **Workforce** – this includes the size of the EU labour force in the sector, the expected decline in immigration from EU countries as a result of tighter immigration controls after the UK leaves the Single Market, and the likelihood of the UK becoming a less attractive destination for EU migrants.
- **Funding and investment** – this includes restricted or prohibited access to European funds and subsidies (such as ERDF, ESF, CAP or Horizon 2020) and the European Investment Bank (EIB). The impact of Brexit (and the associated period of economic uncertainty) on UK public and private investment decisions and on the capacity of UK regions and businesses to continue to attract Foreign Direct Investment (FDI) is also considered.

Brexit scenarios

- 1.11 The exposure of the UK economy to Brexit as well as the potential beneficial opportunities will depend crucially on Britain's final agreement with Europe on future trading and regulatory arrangements, and on the limitations to freedom of movement.
- 1.12 Several scenarios have been put forward by various commentators and the published literature (including some government reports and academic publications), discussing the various combinations of future arrangements for the EU-UK relationship. The following three broad scenarios are the most often cited:
- **'Soft Brexit'** – the UK remains in the European Single Market and/or Customs Union;
 - **'Medium-impact Brexit'** – the UK enters a comprehensive free trade agreement (FTA) with the EU which significantly reduces trade barriers;
 - **'Hard Brexit'** – the UK negotiates a 'low-access' FTA with the EU or trades under the terms of the World Trade Organisation (WTO).
- 1.13 The 'Soft Brexit' scenario would keep the UK-EU trading relations as close as possible to the current terms. These arrangements could include:
- Full membership to the Single Market, for instance through membership of the European Economic Area (EEA) (e.g. Norway) or European Free Trade Agreement (EFTA) (e.g. Switzerland). This maintains free trade and movement of people, minimising the impact on businesses.
 - Leaving the Single Market but joining a Customs Union with the EU (e.g. Turkey). This maintains trade, but restricts the movement of people, so the impact is more severe for businesses.
- 1.14 Taking into account the development of the negotiations to date and the most recent official position of the UK Government, which has ruled out continuing membership of both the Single Market and the Customs Union, the 'Soft Brexit' scenario seems unlikely.

1.15 On the other side of the spectrum, a ‘Hard Brexit’ with no deal would see UK trading with the EU under WTO rules¹. This would introduce tariffs at the Most Favoured Nation (MFN) rates, as well as raising non-tariff barriers at a level higher than those assumed in the ‘Soft Brexit’ scenario. The UK would have no passporting rights and restricted access to the EU market in the absence of a Preferential Trade Agreement (PTA). In other words, it would be treated as a third country (e.g. India).

1.16 Table 2 summarises the range of Brexit scenarios.

Scenario	Arrangement	Example	Trade	Workforce
‘Soft’	EEA	Norway	Free	Unrestricted
	EFTA	Switzerland	Free	Low restrictions
	Customs Union	Turkey	Free	Restricted
‘Medium-impact’	FTA/‘Bespoke agreement’	‘customs partnership’; ‘Canada plus’	Range from low to high trade barriers	Range of softer to stricter migration rules
‘Hard’	Range from ‘low access’ deal to WTO rules	‘maximum facilitation’; no deal (e.g. India)	Range from high trade barriers to WTO Most Favoured Nation	Restricted

Table 2 – Summary table of Brexit scenarios

1.17 The exact terms of a future partnership will depend on the outcome of the ongoing negotiations between the UK and EU, but the UK government is seeking a deal that significantly reduces friction to trade while allowing the UK to have an independent trade policy and control over borders and domestic regulation.

1.18 The potential impacts on trade and regulations, workforce, and funding and investment remain uncertain.

- **Trade and regulations** – It is not yet clear the extent to which the UK and EU will be able to negotiate a free trade deal or partnership that considerably reduces trade barriers (including tariffs and non-tariffs). Nonetheless, Brexit offers the UK the opportunity to look beyond the EU to establish trading relationships with new partners. The regulatory environment post-Brexit depends upon the nature of a trade deal negotiated, as this will determine whether UK companies will be required to comply with existing EU standards in order to trade. In some areas, there may be opportunity for new, better targeted domestic policy to be designed.
- **Workforce** – The Government has pledged their intention of significantly reducing EU immigration, which will particularly impact lower skilled workers, whilst keeping the UK attractive to overseas students and highly qualified workers. It is unclear how this will be achieved as it depends on factors beyond Government’s control (e.g. the willingness of foreign

¹ Cambridge Econometrics (2018) Preparing for Brexit.

workers to move to the UK, or the number of current qualified workers that will leave). Lower competition from EU workers gives an opportunity for local residents to enter the labour market.

- **Funding and investment** – It is almost certain that the UK will no longer have access to EU structural funds, but the extent to which Government will fully replace those sources of funding remains unclear. The extent to which the UK might have access to other EU mechanisms, such as the European Investment Bank (EIB) or European Research Council (ERC) research funds, will depend upon the outcomes of the current negotiations. Recent data shows a slow-down as businesses delay investment decisions due to uncertainty. The extent to which this trend will be reversed in the long term is still uncertain and will depend on the future relationship with the EU and on how the UK economy performs across different sectors.

- 1.19 Many of the expected impacts of Brexit are still highly uncertain, as they depend on the outcomes of the current UK-EU negotiation process and on how the economy and its different actors will react to these outcomes.
- 1.20 However, for the purposes of this report, we have tried to look at exposure to Brexit in terms of a ‘Hard Brexit’ scenario, on the basis that this would bring greater change – opportunities and challenges – compared to the pre-Brexit status quo, than would a ‘Soft Brexit’ scenario.

Assessing sectoral exposure to Brexit

- 1.21 As demonstrated in Figure 1, there are important connections between sectors, both in terms of exposure to Brexit, but also in their spatial distribution across the LEP area. For instance, there are clear linkages between agriculture and food processing, as well as food processing, manufacturing, ports and logistics.
- 1.22 The response from the Confederation of Paper Industries to the recent BEIS Select Committee on Brexit and the food industry² is an interesting example of how this interconnectivity plays out. As a major supplier to the food and drinks sector, paper and packaging industries are heavily exposed to trends in food and drink. For instance, the food and drinks sector is highly integrated with EU supply chains, as the EU is a significant trading partner, accounting for 57.4% of exports and 70.6% of imports of agri-food in 2017³. This may impact demand on paper and packaging. Also, the sector is likely to be affected by non-tariff barriers, such as more frequent inspections and testing, more bureaucracy, changes in accreditation processes, requirements to use local logistics firms and rules of origin issues. There are companies in Lincolnshire producing paper and plastic packaging for the food supply chain which will face these kinds of barriers.
- 1.23 This report is predominately about sectors, rather than businesses, but it is important to note that Brexit is likely to have a range of impacts on the operations of both large companies and SMEs.

² BEIS Select Committee Brexit and the implications for UK business: Processed food and drink inquiry. Written evidence on Brexit and the implications for the processed food and drink industry.

³ONS (2017) UK trade in goods.

- 1.24 Businesses have a pivotal role to play in building the local skills base post-Brexit. In places and sectors where there has previously been a high dependency upon EU labour, there is an opportunity for Greater Lincolnshire to support people at the lower end of the skills spectrum to enter the labour market, due to lower competition from EU workers. Businesses need to ‘think locally’ by offering training and apprenticeships, and by developing clear paths for career progression.
- 1.25 Businesses should also capitalise on the renewed importance of being outwardly focused and internationally competitive, and use Brexit as an opportunity to look beyond trade with the EU and form new relationships in new markets.
- 1.26 However, certain businesses are more exposed to the potential negative impacts of Brexit. This may be due to factors such as their size and composition, the extent of trade with the EU, and their dependency upon EU employees. It may also be influenced by staff turnover, whether they deal with perishable goods, whether they have made recent capital investments or intend to in the near future, or whether there are existing skills shortages in their sector.
- 1.27 Figure 1 summarises a selection of the types of factors which influence how a company is exposed to Brexit. For any given sector, companies within that sector are positioned differently.

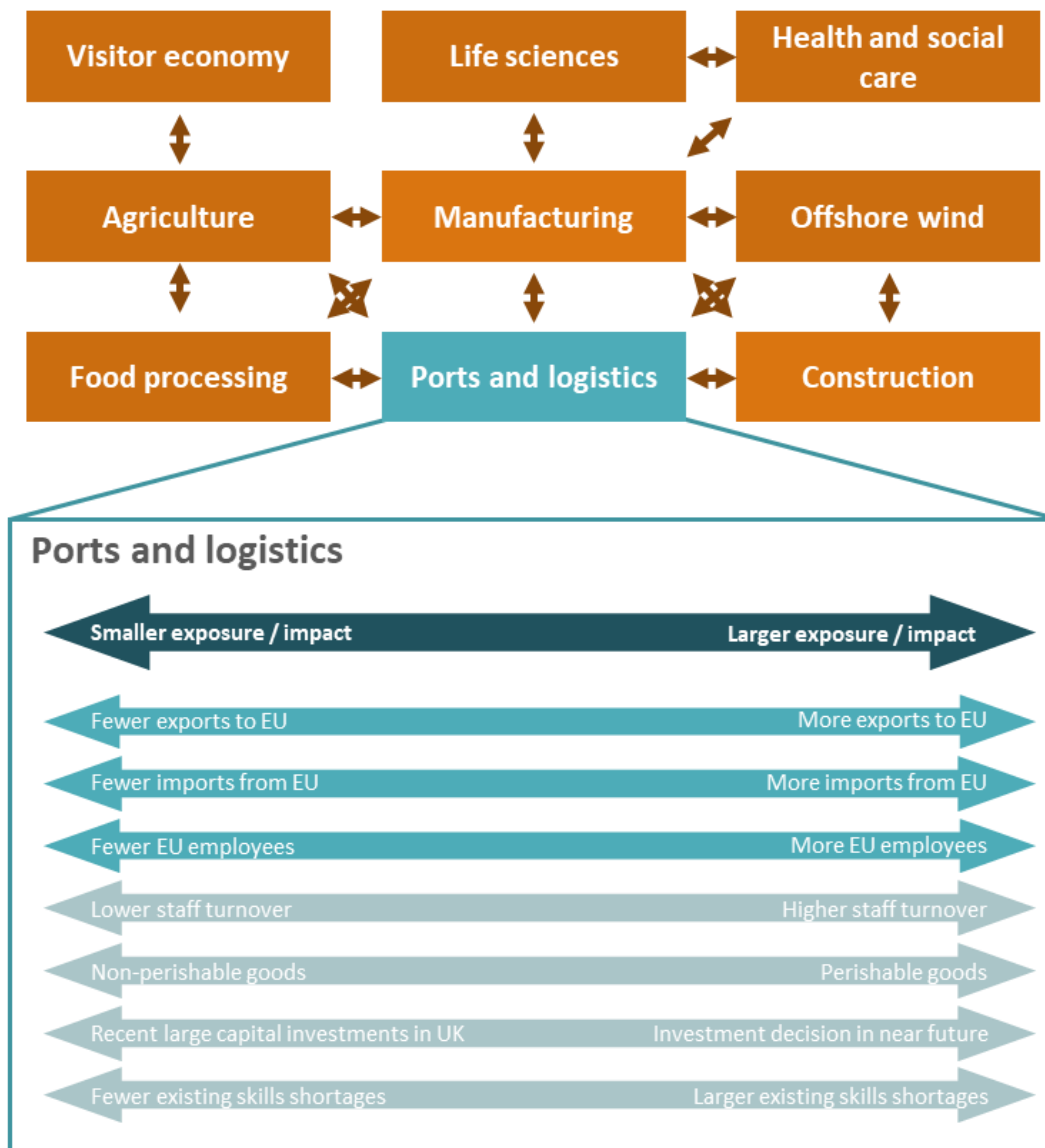


Figure 1 – Sector interconnectedness and company exposure to Brexit

- 1.28 Businesses are also likely to be impacted in a range of other areas, particularly related to trade and supply chains. For instance, given the likelihood of leaving the Single Market, increases in customs bureaucracy are anticipated, as British companies will be required to fill in customs declarations for all goods crossing the border. HMRC estimate the number of customs declarations will rise from 55 million to 255 million annually⁴.
- 1.29 Consequently, more companies will opt to or will be obliged to obtain authorised economic operator status⁵. This allows companies with procedures which are compliant with both countries faster clearance at the border; however, this status is costly and time-consuming to obtain. Another issue related to cross-border trade with the EU is VAT starting to be charged at the border when importing goods and services, as opposed to current trade which is exempt from VAT, potentially creating cash flow issues. Also, there is a lack of incoterms in many existing

⁴ Giles, C. (2017) Preparing for Brexit: a to-do list for UK companies.

⁵ Giles, C. (2017) Preparing for Brexit: a to-do list for UK companies.

contracts with EU firms. These set out who is responsible for shipping goods across borders, which is important for VAT.

- 1.30 Uncertainties with trade post-Brexit has led to 1 in 5 small businesses with EU supply chains considering moving more or all of their supply chain to the EU, according to survey results from the Federation of Small Businesses⁶.
- 1.31 Further, there may be potential lapses in IP protections (particularly trademarks and design protection) as a result of Brexit⁷. Companies may also need to respond to changes in the rights of existing EU staff and changing recruitment procedures. Survey results show that 40% of small businesses with EU workers are prepared to continue hiring EU workers and deal with any additional costs⁸.
- 1.32 Even before a deal with the EU is signed, the uncertainty around Brexit has created problems for British companies. For instance, work by the Chartered Institute of Procurement and Supply (CIPS) found that 20% of UK firms surveyed were struggling to get contracts that run past March 2020. Brexit uncertainty has resulted in 15% having contracts cancelled or postponed, whilst 63% of EU businesses plan to move at least some of their supply chain out of the UK⁹.
- 1.33 We have not assessed the potential exposure to Brexit of specific companies. Therefore, except where otherwise noted, any references to companies are for information only and not a commentary on their perceived exposure to Brexit.
- 1.34 The impact of Brexit on the UK economy is likely to be significant, but it is important to view Brexit in context. Brexit should be recognised as just one factor amongst a number of issues faced by GLEP and other local economies. Changing demographics, productivity, global market demand and competition, and new technologies also offer sectors and the businesses within them both opportunities and challenges.
- Firstly, an ageing population is an issue across the UK and was identified as one of the Grand Challenges in the Industrial Strategy. In GLEP, the ageing workforce is a challenge for local labour markets, particularly in manufacturing¹⁰, as there is a mismatch between the number of people leaving and entering the workforce. It also poses challenges to the delivery of health and adult care services¹¹, though this offers the opportunity for innovation in the development of new models of care and assisted living technologies.
 - Secondly, productivity continues to be a major issue for the UK economy and is a focal point of the Industrial Strategy. Compared to the average for the other six G7 economies, output per hour worked in the UK in 2016 was 16.3% below average¹². Within the UK, there are vast differences in the productivity of firms with high number of low productivity firms, often

⁶ Federation of Small Businesses (2017) Keep Trade Easy: What small firms want from Brexit.

⁷ Giles, C. (2017) Preparing for Brexit: a to-do list for UK companies.

⁸ Federation of Small Businesses (2017) A skilful exit: What small firms want from Brexit.

⁹ CIPS (2017) EU businesses say goodbye to UK suppliers as Brexit bites into key relationships.

¹⁰ GLEP (2016) Strategic Economic Plan 2014-2030. Refresh.

¹¹ GLEP (2016) Strategic Economic Plan 2014-2030. Refresh.

¹² ONS (2018) Statistical bulletin: International comparisons of UK productivity (ICP), final estimates: 2016.

referred to as the 'long tail'. This difference is partially due to the low take-up of readily available technologies and management best practice¹³.

- Thirdly, a major issue for sectors is competition, both globally and nationally. For example, competition from other ports in the UK which are pioneering new technologies is most relevant to the ports and logistics sector in GLEP. DP World London Gateway in South Essex has new deep-sea facilities, whilst the Port of Liverpool can accommodate the world's largest 'post-Panamax' ships.
- Lastly, trends in technological development, namely automation, artificial intelligence and big data, and Industry 4.0 are rapidly altering how economies, sectors and businesses function. In GLEP, automation across sectors, including food processing, manufacturing, ports and logistics, is likely to offer significant gains in productivity. It will also reduce demand on labour, with one study suggesting 26-34% of jobs in Lincolnshire will be at risk of automation by the early 2030s¹⁴. This may help overcome labour shortages in certain sectors but will also necessitate the retraining and upskilling of thousands of people.

¹³ CBI (2017) From Ostrich to Magpie: Increasing business take-up of proven ideas and technologies.

¹⁴ Future Advocacy (2017) The Impact of AI in UK Constituencies: Where will automation hit hardest?

2 Key sectors

Food processing

Employment, specialisation and sub-sectors

- 2.1 Food processing is an economic area of local strength in GLLEP both in terms of employment and specialisation. It has a very large workforce with 24,000 employed in the manufacture of food products¹⁵. It is also an area of high specialisation, as the share of jobs in food processing is 4.5 times higher in GLLEP than in the UK. In recent years, the sector has experienced strong growth: there has been 25.2% job growth between 2011 and 2016, compared to the UK average of 8.2%, representing 4,750 net new jobs.
- 2.2 There are four distinct sub-sectors of strength in GLLEP: meat, fruit and vegetables, fish and prepared meals. Of these sub-sectors, meat processing is the largest with 6,500 jobs, but the lowest growth of only 2.0% between 2011 and 2016. The processing of fruit and vegetable account for 4,450 jobs in 2016, having grown 29.0% since 2011.
- 2.3 In 2016, there were 4,250 jobs in prepared meals processing, which is a 30.8% increase from 2011. Processing and preserving of fish has 4,000 jobs and has experienced the highest growth, expanding 45.5% from 2011 to 2016. Its relative size in GLLEP's economy is 18 times higher than in the UK and is the second most specialised sub-sector in GLLEP. The location quotient (LQ) table which this analysis is based on can be found in Appendix 2, Table 4.

Locations and key companies

- 2.4 Figure 2 shows the spatial distribution of jobs in food processing across GLLEP. The map shows the total number of jobs in food processing by lower-level super output area or 'LSOA' (the smallest geographical unit at which such statistics are available). The darker colour represents a higher number of jobs. The purpose of this map is to have an overview of where these activities are taking place across the LEP area and to identify local clusters of job concentration.
- 2.5 Across GLLEP, there are eight concentrations with more than 1,000 jobs in food processing (these are indicated by the red circles). The largest of these are in Spalding and north west Grimsby. Jobs in meat processing are concentrated in north east Sleaford, where all of the jobs in food processing are in meat processing, due to the presence of Moy Park and Tulip. Foxhills Estate in Scunthorpe has a further 1,500 jobs in meat processing, due to 2 Sisters.
- 2.6 Fruit and vegetable processing is most prevalent in the south of the LEP. In south east Holbeach, over 70% (1,100 jobs) of food processing jobs are in fruit and vegetables. This is even higher at 98% in east Bourne, as this is where Bourne Prepared Produce and Bourne Salads are located.
- 2.7 Grimsby specialises in fish processing with two clusters in its vicinity. There are 1,950 fish processing jobs in north west Grimsby, making up 76.4% of all food processing jobs. Two thirds of

¹⁵ ONS (2016) Business Register and Employment Survey.

the food processing jobs (1,250 jobs) are found at Grimsby Fish Dock. Companies in the area include Young's Seafood, Flatfish, Icelandic Group and Havelok.

- 2.8 Lastly, jobs in prepared meals are mainly concentrated in Spalding, where there are 1,750 jobs, comprising 46.7% food processing jobs, owing to companies like Bakkavor and Greencore. There are a further 700 in north east Holbeach, 500 in north west Grimsby and 400 in south east Holbeach.

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Geographic area	Total no. jobs	No. jobs in sub-sectors	Example companies
1 Spalding	3,750	Prepared meals: 1,750, Meat: 1,200, Vegetables: 350	Bakkavor, Greencore, Dalehead Foods
2 NW of Grimsby	2,550	Fish: 1,950, Prepared meals: 500	Icelandic Group UK, Havelok, R & J Seafoods
3 Grimsby Fish Dock	1,875	Fish: 1,250	Young's Seafood, Flatfish, Arctic Breeze Fish Products
4 NE of Sleaford	1,750	Meat: 1,750	Moy Park, Tulip
5 Foxhills Industrial Estate, Scunthorpe	1,640	Meat: 1,500, Vegetables: 140	2 Sisters Food Group, New Century Foods, Abbeydale Food Group
6 NE of Holbeach	1,500	Prepared meals: 700	Frontier, Manor Foods, Q V Foods
7 SE of Holbeach	1,500	Vegetables: 1,100, Prepared meals: 400	Bakkavor Meals, Wingland Foods, Princes
8 E of Bourne	1,020	Vegetables: 1,000, Meat: 20	Bourne Prepared Produce and Bourne Salads (Bakkavor)

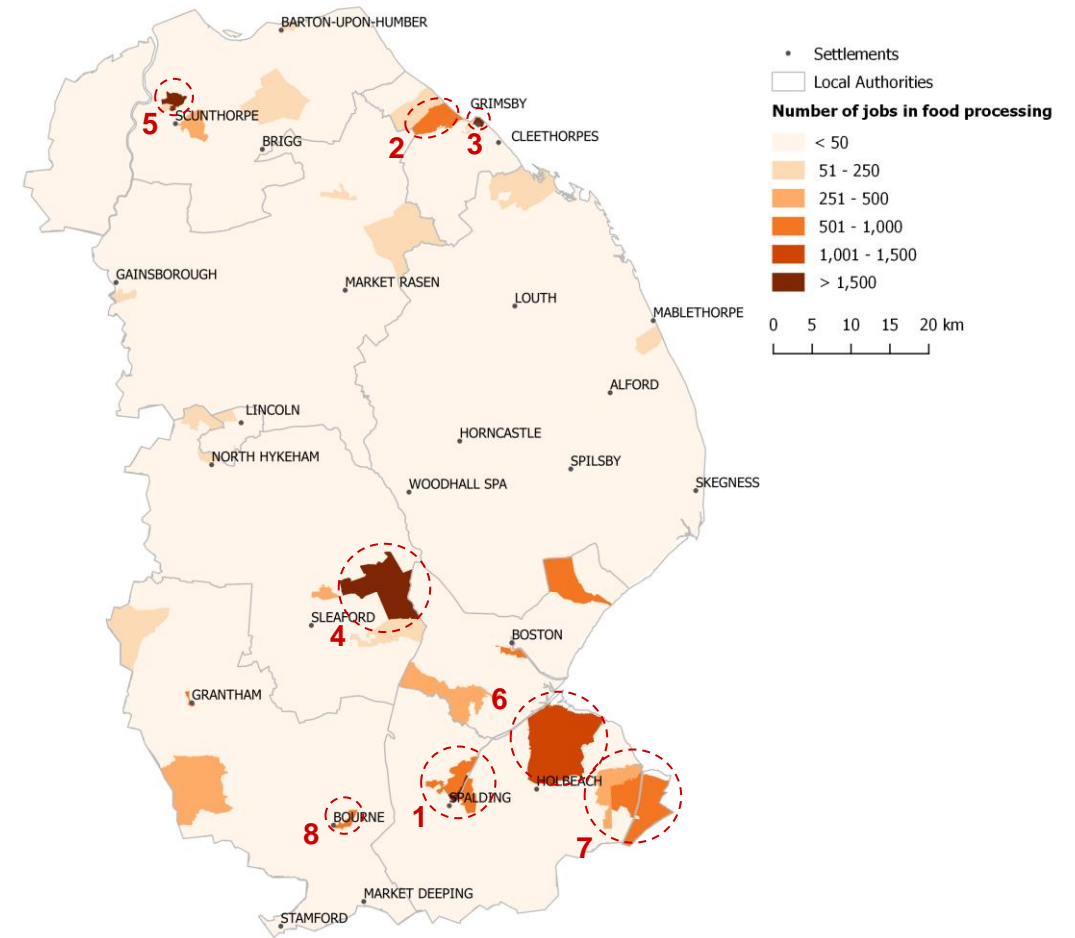


Figure 2 – Spatial distribution of food processing jobs in GLLEP (Source: BRES, 2016)

Exposure to Brexit

Trade and regulations

- 2.9 The food and drink sector is likely to see the largest trade impacts of all UK key sectors¹⁶. This is in part due to the extent of trade between the UK and EU. The EU is a significant trading partner for the UK food industry with the EU share of exports at 66.0% and imports at 77.1% in 2017¹⁷. In 2015, 66.0% of GLEP exports in food and animals were to EU (over £250 million).¹⁸ A study by the UK Trade Policy Observatory showed that in every post-Brexit modelled scenario, food processing is at the most risk of a significant fall in exports¹⁹.
- 2.10 Another reason for the sector experiencing such large impacts is due to potential barriers to trade following Brexit. Food processing is one of the sectors where tariffs and non-tariff barriers are expected to be highest²⁰.
- 2.11 If tariffs are introduced after the UK leaves the Customs Union, Food, Beverages and Tobacco is one of the sectors expected to be most highly impacted, as tariffs are usually quite high. These are expected to be 12.7%, considering both current FTA and WTO rules. Putting this into perspective, a survey by the Federation of Small Businesses showed that 34% of small business exporters said that they would be deterred from trading with the EU if tariffs of 2-4% were introduced²¹. However, high tariffs on imports may offer the opportunity for import substitution, as the price of British products becomes more attractive to UK consumers²², benefiting British producers and food supply chains.
- 2.12 Non-tariff barriers include customs costs, other border costs and regulatory costs. The enforcement of different EU and UK regulations following UK's departure from the Single Market will most likely introduce the need for border checks on most food products. The extent to which border controls between the UK and the EU can be streamlined with the use of technology is still uncertain, but it will nonetheless introduce an extra barrier to trade and the associated costs for UK businesses. According to the latest official estimates, non-tariff barriers for food and drink could impose an additional cost of 14% (FTA-type deal) to 18% (WTO rules), which is never less than 8% (EEA-type deal)²³.
- 2.13 Despite the potential implementation of barriers to trade, Brexit is thought to offer the sector the opportunity to grow food and drinks exports more quickly than previously²⁴. In 2017, the exports of food and drink reached record levels of £22 billion with products sold to 217

¹⁶ Cambridge Econometrics (2018) Preparing for Brexit.

¹⁷ ONS (2017) UK trade in goods.

¹⁸ HMRC (2015) Exports by LEP.

¹⁹ UK Trade Policy Observatory (2018) Which Manufacturing Sectors are Vulnerable to Brexit?

²⁰ Cambridge Econometrics (2018) Preparing for Brexit; House of Commons Exiting the European Union Committee (2018) EU Exit Analysis: Cross Whitehall Briefing.

²¹ Federation of Small Businesses (2017) Keep Trade Easy: What small firms want from Brexit.

²² House of Commons Environment, Food and Rural Affairs Committee (2017) Brexit: Trade in Food. Third Report of Session 2017-19.

²³ House of Commons Exiting the European Union Committee (2018) EU Exit Analysis: Cross Whitehall Briefing.

²⁴ Willis Towers Watson (2017) Impact of Brexit on the UK Food & Drink Industry.

markets²⁵. Global demand for British food products is seen to offer the sector the opportunity to continue growing exports post-Brexit.

- 2.14 There is limited scope for relaxing current standards and regulations. Some witnesses contributing to the BEIS Select Committee Inquiry into Brexit noted that opportunity to establish regulations which are better suited to the UK are constrained by the need for continuity with EU regulations²⁶. At present, standardised EU rules exist on products produced in the UK and sold in the EU²⁷. These standards will have to be maintained for UK products exported to the EU, which will limit the UK capacity to relax current standards after leaving the Single Market, in order to reduce the costs for businesses.
- 2.15 There is some concern at the exposure to Brexit amongst prominent companies and industry bodies in the fish processing sector. The exposure to trade impacts is very relevant as 90% of fish processed in Grimsby is imported. Several companies have expressed concern about the potential implications of tariffs and customs checks on the supply of fresh fish. There have also been calls from a local group of companies representing the local fish processing sector for free trade status to be granted to Immingham and Grimsby. It has been proposed that the possible abolition of Common Fishery Policy quotas, which is normally viewed as advantageous to the sector, is unlikely to have an overall positive impact on the Grimsby industry, as it is largely driven by trade. Moreover, the ‘draft guidelines for a future trade deal’ published by the Council of the EU in early March 2018, propose that existing reciprocal access to fishing waters should be maintained²⁸.

Workforce

- 2.16 Workforce is another area where food processing is likely to be exposed to the impacts of Brexit. Companies in the food processing sector are likely to face increasing difficulties in recruiting workers if the number of EU migrants declines significantly following Brexit. This is due to an existing reliance on EU workers in food processing. In 2016, 33% of food processing workers were non-UK EU nationals²⁹. If this share is applied to GLLEP, this suggests around 8,000 jobs in the local sector could be occupied by EU nationals.
- 2.17 EU workers occupy a range of positions and types of contract. For instance, migrant workers are important at all skills levels and work in often hard-to-fill vacancies. Much of this work is seasonal in nature, contributing to the difficulty in attracting domestic workers. As a large proportion of workers are low-skilled and seasonal, the sector will be more exposed to future migration restrictions.
- 2.18 According to the official government model, a ‘Flexible Migration Scenario’ would introduce a salary threshold of £20,500. A ‘Strict Migration Scenario’ would see skills threshold (NVQF6+), salary threshold (£30,000) and a job offer requirement. The salary threshold in both scenarios is significantly higher than a full-time annual salary of a worker on the National Living Wage, which

²⁵ Defra (2018) Food and drink export sales soar in Brexit boost.

²⁶ House of Commons Environment, Food and Rural Affairs Committee (2017) Brexit: Trade in Food. Third Report of Session 2017-19.

²⁷ NFU (2016) UK Farming’s Relationship with the EU.

²⁸ Council of the EU (2018) European Council (Art.50) (23 March 2018) – Draft guidelines.

²⁹ The House of Commons (2017) Migrant workers in agriculture.

is £15,268.50³⁰. In summary, any scenario outside the Single Market will make it considerably difficult to recruit EU workers on a temporary basis.

- 2.19 The exposure of the food processing workforce to Brexit is a concern to a number of Lincolnshire companies. A large vegetable processing company stated that it is vital for food processing companies to access workers from the EU, not only to accommodate seasonal peaks but also to provide vital skills and experience for the long-term. This particular company has already experienced a reduction in the availability of flexible workers. Continued access to EU markets and people is considered to be important to a largely poultry processor. Attracting and retaining workers has been identified as a concern by two major fish processors, as non-UK EU nationals make up 25% of their workforce.

Funding and investment

- 2.20 The exposure of food processing to the impacts of Brexit on funding are likely to be indirect. Specifically, these will be secondary impacts deriving from changes to the funding environment in the agricultural sector. If CAP payments were removed from farms without a replacement scheme designed and implemented by the UK government, this could result in farm closures or lower levels of output. In turn this could impact the supply of agricultural products to process.
- 2.21 It is difficult to assess the direct impacts on investment. Nonetheless, impacts on trade and labour supply are likely to affect businesses' investment decisions.³¹ Investment is vital to improve productivity and develop new products. Therefore, the lack of investment could diminish potential future productivity gains³² and reduce the capacity of businesses to adjust to workforce (e.g. developing automation) and trade (e.g. targeting new markets) impacts. As a proxy, the overall impact on GVA growth in official models ranges from -9.5% (WTO), -6.5% (FTA) and -2.5% (EEA)³³.

Manufacturing

Employment, specialisation and sub-sectors

- 2.22 The broader manufacturing sector (excluding food) also employs a large number of people in GLLP. In 2016, there were 34,425 jobs, accounting for 8.0% of total jobs, which is almost 2.0% above the share of manufacturing jobs in the UK³⁴. Despite the strength of manufacturing locally, there has been a slight decline in the number of jobs over the past five years at 3.9%, which is contrary to the slight growth in UK (+1.8%).
- 2.23 The most specialised sub-sector is oil refining, which is 16 times more specialised than the UK and has 1,375 jobs. These are mainly in the two large refineries near Immingham: Humber and

³⁰ This is based on a 25+ year old working 37.5 hours per week and earning £7.83/hour (April 2018)

³¹ Cambridge Econometrics (2018) Preparing for Brexit.

³² Beck (2016) Brexit and FDI. *Economic Outlook*, 40(2), 26-30.

³³ House of Commons Exiting the European Union Committee (2018) EU Exit Analysis: Cross Whitehall Briefing.

³⁴ ONS (2016) Business Register and Employment Survey.

Lindsey. However, there are four areas where two thirds of all manufacturing jobs are concentrated: metals, machinery, wood and furniture, and plastics and rubber products.

- 2.24 The area with the highest employment is the manufacture of metals and metal products, which has 7,595 jobs, but has shrunk by 18.9% since 2011. Specifically, GLLEP has 3,500 jobs and is 11 times more specialised than the UK in manufacturing steel, due to the British Steel facility in Scunthorpe. Machinery manufacturing has 5,680 jobs and has grown 15.8% since 2011. Based on employment and specialisation levels, this relates to the manufacture of turbines, such as those made by Siemens, and machinery for important local sectors, agriculture and food processing, such as those made by Tong Engineering.
- 2.25 There are a further 4,610 jobs in the manufacturing of wood and furniture, having grown 67.3% since 2011. This is most likely due to the rapid expansion of Wren in Brigg, contributing to GLLEP's strengths in kitchen furniture. Plastics and rubber products manufacturing make up 4,275 jobs, whilst the sub-sector has grown 13.2% in the past five years. Strengths in plastics and rubber products is linked to the construction and industrial sectors, as well as to packaging in the food supply chain. Other relevant manufacturing sub-sectors in GLLEP include chemicals, paper products and electronics. The location quotient (LQ) tables which this analysis is based on can be found in Appendix 2, Tables 5-8.

Locations and key companies

- 2.26 Figure 3 shows the spatial distribution of jobs in manufacturing across GLLEP. There are six areas with a high concentration of manufacturing jobs. Jobs in metals are mainly concentrated in Scunthorpe, whereby 59.3% (4,430 jobs) of manufacturing jobs fall within this sub-sector. This is mostly likely because of the British Steel plant. There are metal manufacturing jobs in all other manufacturing concentrations, although these tend to be relatively low (less than 500), as 58.3% of jobs in metal manufacturing are in Scunthorpe.
- 2.27 The machinery sub-sector is centred around Grimsby and Immingham where there are 1,130 jobs in the sub-sector. There are a further 865 machinery jobs in Lincoln, as this is where Siemens is located. In North Hykeham, machinery is the most dominant sub-sector with a further 540 jobs.
- 2.28 The largest number of jobs in wood products are in Scunthorpe, where there are 855. This is predominantly related to furniture with companies such as Lebus sofas and Wren Kitchens in the area. For both Grantham and Boston, wood products are the largest manufacturing sub-sector with 535 and 375 jobs, respectively. This is typically related to construction, as Metsa Wood is based here, and furniture production with QFC.
- 2.29 Jobs in the plastics and rubber products manufacturing are concentrated in Scunthorpe (975 jobs) with a smaller number in Grimsby and Immingham (525 jobs) and Grantham (240 jobs).

Geographic area	Total no. jobs	No. jobs in sub-sectors	Example companies
1 Scunthorpe	7,470	Metals: 4,430, Plastics: 975, Wood: 855, Machinery: 205	British Steel, Can-pack, Lebus, Wren Kitchens
2 Grimsby/Immingham	5,335	Machinery: 1,130, Plastics: 540, Metals: 470, Wood: 50	Dunlop Oil and Marine, Ultimate Packaging, Delta Engineering Group
3 Lincoln	2,050	Machinery: 865, Plastics: 525, Metals: 215, Wood: 35	Bifrangli, Siemens, Micrometric, Ermine Engineering
4 Grantham	1,770	Wood: 535, Metals: 255, Plastics: 240, Machinery: 160	Autocraft Drivetrain, Winfield Engineering, Vaderstad
5 North Hykeham	1,390	Machinery: 540, Metals: 160, Plastics: 60	NMB Minebea UK, Imperial Machine Company, Britannia Kitchen Ventilation
6 The Haven, SW of Boston	1,245	Wood: 375, Machinery: 85, Metals: 55	Metsa Wood, Dynamic Cassette International, Clarke Group Construction

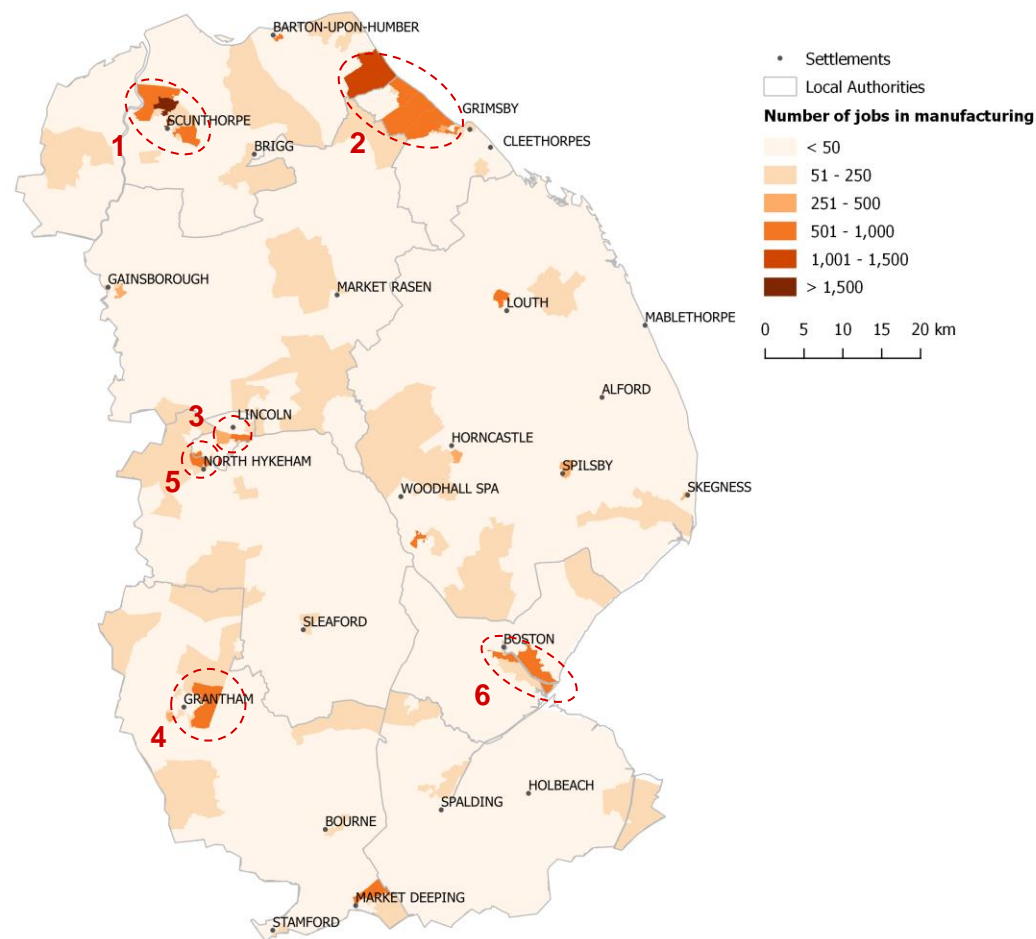


Figure 3 – Spatial distribution of manufacturing jobs in GLLEP (Source: BRES, 2016)

Exposure to Brexit

Trade and regulations

- 2.30 The manufacturing sector relies heavily on international trade, particularly with the EU. Manufactured products (excluding food) account for 95.4% of total goods exports and 93.0% of total goods imports in the UK. In 2017, 48.0% of exports and 56.8% of imports in manufacturing (excluding food) were to and from other EU countries³⁵. In GLEP, the EU represents 46% of manufacturing exports (excl. food), worth over £700m in 2015³⁶. Machinery and chemicals are the sub-sectors with the highest share of non-EU exports, but they also have high levels of exports to the EU.
- 2.31 The imposition of tariffs and other barriers to trade after the UK leaves the Single Market and Customs Union would increase costs for manufacturers³⁷ and reduce their competitiveness. According to the latest official estimates, non-tariff barriers for machinery would not be very high. The additional costs of non-tariff barriers have been estimated to be equivalent to 4% with an FTA and 6% with WTO rules. However, the additional cost of non-tariff barriers for chemicals and plastic and rubber products are expected to be around 12-13% in both WTO and FTA-type deals³⁸.
- 2.32 The complexity of manufacturing supply chains also exposes the sector to Brexit trade impacts. Intricate supply chains operate across the EU³⁹ with products crossing borders multiple times. The introduction of barriers to trade would affect not only the export of final products but will significantly affect manufacturing costs (and times), making British businesses less competitive.
- 2.33 The main issue is related to the rules of origin, whereby products sold in the EU market with preferential or non-tariff arrangements will have to prove that they are from the UK. This prevents countries without a trade deal from accessing the EU market through the UK and vice versa. Since a product is made of several parts produced in different places, proving a threshold for 'local content requirements' will add significant levels of bureaucracy and border checks⁴⁰. According to the 'draft guidelines for a future trade deal' published by the Council of the EU⁴¹, even if a deal is achieved allowing for neither tariffs nor quantitative restrictions to trade, it would still have to observe rules of origin.
- 2.34 A short-term impact of Brexit has been the depreciation of sterling. The fall in the value of the pound has impacted the trade of manufactured goods. A positive outcome of this has been higher output prices (in sterling) for exported goods. Consequently, UK exports have become more competitive. The combination of higher prices and increased export volumes has been beneficial for exporting businesses with low levels of imported inputs⁴². Simultaneously, input

³⁵ ONS (2017) UK trade in goods.

³⁶ HMRC (2015) Exports by LEP.

³⁷ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

³⁸ House of Commons Exiting the European Union Committee (2018) EU Exit Analysis: Cross Whitehall Briefing.

³⁹ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁴⁰ East of England European partnership (2017) Potential impacts on the East of England of UK withdrawal from the EU Customs Union.

⁴¹ Council of the EU (2018) European Council (Art.50) (23 March 2018) – Draft guidelines.

⁴² ONS (2017) The impact of sterling depreciation on prices and turnover in the UK manufacturing sector: 2017.

costs have increased due to higher costs of importing raw materials and fuels⁴³, as well as manufactured products⁴⁴. The challenge of higher costing imports offers the opportunity to boost the UK domestic market, as companies are forced to source nationally⁴⁵. It is important to note that these trends may reverse if the pound recovers to its pre-Brexit level.

- 2.35 The EU determines many manufacturing regulations and laws which are standardised across EU member states. EU laws and regulations apply to many different legislative areas, including product safety, employment, health and safety, and environmental and consumer protection⁴⁶. Regulatory compliance is central to trade and investment agreements, particularly as many EU laws (for example those concerning labour markets and health & safety) have been integrated into domestic law. For instance, exports of manufactured goods are subject to various regulations and standards, which facilitates their easy trade between EU countries⁴⁷. In order to continue trading in the EU, UK manufacturers would have to conform to EU product standards and safety⁴⁸.
- 2.36 Therefore, there are some market pressures for the UK continue to comply with certain regulations, such as employment and health and safety regulations, in order to maintain stability. However, the UK might opt for a more flexible legislative and regulatory framework, which is independent of the EU⁴⁹. This would be welcomed by many small firms in the sector, as 73% of small manufacturing firms surveyed by the Federation of Small Businesses stated that the burden of current regulations outweighs the benefits⁵⁰.

Workforce

- 2.37 Manufacturing is reliant on EU workers. Nationally, between April 2016 and March 2017 EU nationals accounted for 10.9% of the workforce in manufacturing companies⁵¹. Assuming a similar share for GLLEP, this could mean 3,000 to 4,000 jobs. Workers are essential to filling existing labour shortages in the UK across different skills levels. Restrictions to migration from the EU are likely to negatively affect UK businesses in two ways.
- Firstly, it may be harder to recruit lower-skilled workers who might not fulfil future entry criteria in terms of skills and salary thresholds.
 - Secondly, it may be particularly difficult to fill shortages of highly-skilled workers if EU skilled workers are less willing to move to the UK or if multinational companies are no longer able to move highly-skilled engineers at short notice across the EU⁵².

⁴³ ONS (2017) The impact of sterling depreciation on prices and turnover in the UK manufacturing sector: 2017.

⁴⁴ Tait Walker (2016) How will Brexit affect the manufacturing sector?

⁴⁵ Creaseys (year unknown) Brexit – How could it affect the UK’s Manufacturing Industry?

⁴⁶ EEF (2016) UK Manufacturing and Brexit.

⁴⁷ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁴⁸ EEF (2016) UK Manufacturing and Brexit.

⁴⁹ *ibid.*

⁵⁰ Federation of Small Businesses (2017) Regulation Returned: What small firms want from Brexit.

⁵¹ ONS (2017) Employment by Industry and Nationality for EU and non-EU workers, April 2016 to March 2017)

⁵² CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

- 2.38 A survey conducted by CBI found that nearly two-thirds of manufacturing companies surveyed anticipated recruitment problems in the immediate future⁵³. Ultimately, increasing recruitment difficulties and likely higher wages may result in large manufacturing companies moving abroad.
- 2.39 Underlying the need for EU workers in manufacturing in the UK is a long-standing skills gap, rooted in disparities between the skills provided by education and training and those required by employers⁵⁴. A report presented at the National Manufacturing Debate, an annual conference for the manufacturing industry, listed shortages in technical skills, such as robotics, artificial intelligence, software, data analysis, and electrical/electronic engineering⁵⁵.
- 2.40 Locally, a lack of technical skills and shortage of graduate and intermediate engineering skills in the GLLEP labour market has been identified as a key local challenge, restricting the ability of GLLEP businesses to innovate and improve competitiveness.⁵⁶ There is an opportunity for GLLEP to develop the local skills base by positively promoting the future opportunities required by emerging sectors (e.g. STEM). However, advanced manufacturing sectors are globally competitive and will always need to have access to the most skilled people from the UK and abroad.

Funding and investment

- 2.41 EU funding has been integral to maintaining a dynamic and innovative manufacturing sector in the UK. In 2015, the majority (68%) of Research and Development expenditure in the UK was channelled to manufacturing⁵⁷. Between 2007 and 2013, €7 billion was granted to the UK as part of the EU Framework Programme 7 (FP7), €1.2 billion of which was used to support around 10,000 companies (with the majority used for education/training)⁵⁸.
- 2.42 Under Horizon 2020, the UK was the second largest recipient of funding of all EU countries, totalling €1.8 billion, with 22% directed to businesses (ibid.). The Manufacturing Sector Plan identified European Structural Funding as instrumental to helping finance GLLEP businesses⁵⁹. It is still not clear the extent to which the government will be able to replace EU funding, or whether the UK will retain access to some EU Programmes.
- 2.43 Furthermore, foreign investment also maintains the health of the sector. It is vital to boosting productivity in manufacturing through efficiency improvements and the development of new products⁶⁰. Furthermore, manufacturing is amongst the sectors that could experience a highest decline in FDI post-Brexit.⁶¹ The same study points out that the uncertainty over future trade agreements and the impacts on labour force are likely to dampen investment in the short term. A survey carried out by the CBI in 2017 found some evidence that uncertainty over Brexit is already

⁵³ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁵⁴ EEF (2016) EEF: Skills Report 2016: An up-skill battle.

⁵⁵ Cranfield University (2017) UK manufacturing skills shortage creates future industry concerns

⁵⁶ GLLEP (2014) Manufacturing Sector Action Plan 2014-2020.

⁵⁷ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁵⁸ EEF (2016) UK Manufacturing and Brexit.

⁵⁹ GLLEP (2014) Manufacturing Sector Action Plan 2014-2020.

⁶⁰ Beck (2016) Brexit and FDI. *Economic Outlook*, 40(2), 26-30.

⁶¹ Cambridge Econometrics (2018) Preparing for Brexit.

affecting investment decisions in UK businesses⁶². The long-term effects on investment are still uncertain and will highly depend on the overall economic performance of the UK post-Brexit.

Ports and logistics

Employment, specialisation and sub-sectors

2.44 Ports are important assets to GLLEP. The LEP has three ports:

- Immingham – UK’s largest port by tonnage, handling 55 million tonnes per year.
- Grimsby – handles 500,000 cars every year, both for import and export, and has the capacity to accommodate vessels carrying up to 3,000 vehicles.
- Boston – has 18,000m² of warehousing and an independent Farmers Co-operative grain silo which can store 50,000 tonnes of grain.

2.45 The goods handled by GLLEP’s ports, as well as the wider logistics sector, strongly relate to other sectors of strength in GLLEP.

2.46 There is large employment in this sector with almost 19,590 jobs in 2016⁶³. Between 2011 and 2016, the sector grew 9.0%, which is slower than the UK average of 24.0% over the same time period. The largest sub-sector is road transport of freight, which makes up almost half the jobs in the sector at 9,500 jobs. This strength is most likely linked to the agri-food supply chain as 360,000 heavy goods vehicles (HGVs) take food produce from South Lincolnshire every year⁶⁴.

2.47 Other sub-sectors with a high number of jobs include warehousing and storage operations, which has 3,750 jobs, other transport support activities, contributing a further 2,250 jobs, and service activities incidental to water transport, which have 1,625 jobs. The location quotient (LQ) table which this analysis is based on can be found in Appendix 2, Table 9.

Locations and key companies

2.48 Figure 4 illustrates the spatial distribution of ports and logistics jobs in GLLEP. It shows that there are five distinct clusters. In the north, these tend to be correlate with areas which have strengths in manufacturing, whilst in the south, these are linked to agri-food.

2.49 The highest concentration of jobs is around the port of Immingham, where there are 4,220. These mainly fall into the sub-sector service activities incidental to water transport, which make up 34.8% of jobs. A further 23.7% are in other transport support activities which may include jobs relating to customs, goods handling and organisation of transport operations.

2.50 Road transport of freight, the strongest sub-sector, is centred in Spalding and Boston. Of the 1,460 ports and logistics jobs in Spalding, 1,420 are in this sub-sector. Logistics in this area are

⁶² <http://www.cbi.org.uk/news/brexit-affecting-investment-decisions-now-survey/> (accessed 9/03/2018)

⁶³ ONS (2016) Business Register and Employment Survey.

⁶⁴ Collinson and Associates Ltd (2014) Greater Lincolnshire Agri-food Sector Plan 2014-2020.

related to Spalding's food processing cluster and the surrounding rich agricultural land. For instance, companies present in the area include Freshline and Fowler Welch, both of which specialise in food and fresh produce logistics. The area on the map south west of Boston has a further 635 jobs of which most are in freight transport by road. Haulage companies in this area include Turners Soham and Masons Brothers Transport.

- 2.51 Warehousing and storage for road transport is also an important sub-sector. There are 1,420 jobs in Scunthorpe with over half of these in this sub-sector. Companies present in this area include FJG Logistics, a warehousing and distribution specialist, and Clugston Group, which moves bulk foods, fuels and industrial powders. North Hykeham has 1,140 jobs, over 60% of which are related to warehousing. Cartwright Brothers is an example of a company in this area.
- 2.52 Grimsby has 1,275 jobs but has no distinctly strong sub-sectors. Companies based here include GB Shipping & Forwarding (other transport support), and Evans European Transport (freight transport by road). With the exception of Grimsby, the map shows that generally the clusters have strengths in a particular sub-sector.

Geographic area	Total no. jobs	No. jobs in sub-sectors	Example companies
1 Immingham	4,220	Water transport service activities: 1,470, Other transport activities: 1,000, Freight transport by road: 925, Warehouse/storage for land transport: 585	DFDS Logistics, DFDS Seaways, NTEX
2 Spalding	1,460	Freight transport by road: 1,420	Freslinc, Fowler Welch, Gist, Garn Transport
3 Scunthorpe	1,420	Warehouse/storage for land transport: 875	Clugston Group, FJG Logistics
4 North Hykeham	1,140	Warehouse/storage for land transport: 710, Freight transport by road: 370	Cartwright Brothers
5 Grimsby	1,275	Other transport activities: 490, Warehouse/storage for land transport: 310	GB Shipping and Forwarding, Evans European Transport
6 SW of Boston	635	Freight transport by road: 630	Turners Soham, Mason Bros Transport

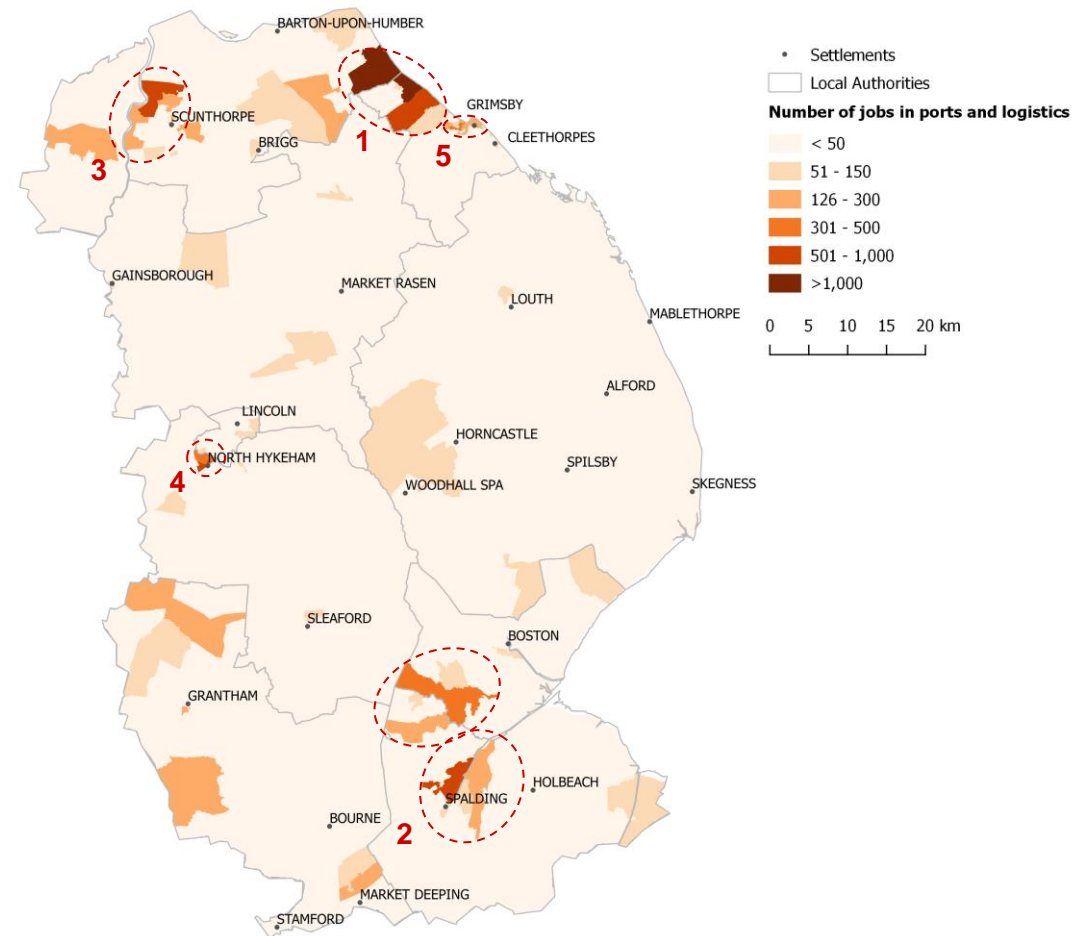


Figure 4 – Spatial distribution of ports and logistics jobs in GLLEP (Source: BRES, 2016)

Exposure to Brexit

Trade and regulations

- 2.53 The ports and logistics sector is likely to be the first place to experience changes to the trading relationship between the UK and EU⁶⁵. This sector is highly interrelated with other sectors and is critical to their operations, due to its centrality in facilitating the function of supply chains. Therefore, any impacts of Brexit on ports and logistics are likely to be amplified further up the supply chain.
- 2.54 The most significant exposure of the ports and logistics sector to changes to trade will be related to non-tariff barriers. It is thought that tariffs will add a few percent onto costs of freight transport and handling⁶⁶. The more significant impact will arise from the greater administrative effort related to customs, as the UK leaves the Single Market and Customs Union. This will cause additional costs and delays⁶⁷. According to James Hookham, the deputy chief executive of the Freight Transport Association, on average across the UK, a delay of two minutes per truck could cause a 29-mile tailback at peak times.⁶⁸ Delays are thought to be more severe for HGVs on roll-on/roll-off (RORO) routes, such as at Immingham, and ferry routes⁶⁹.
- 2.55 According to industry experts, there has been little progress towards streamlining border checks⁷⁰. If systems fail, companies will need contingency plans. The experience of Australia in 2005, when new customs procedures were introduced, has been cited as an example. The new procedures created delays of two days, restricting the supply of key goods, including medicines⁷¹.
- 2.56 Delays in movement may impact businesses in the supply chain across a range of sectors. Based on the goods which Grimsby and Immingham handle, potential delays are likely to impact the following sectors:
- Agriculture
 - Immingham handle dry bulks of animal feed.
 - Grimsby export grain and import fertilisers.
 - Boston export grain and wood products.
 - Food processing
 - Grimsby specialises in importing fresh fish and has a concentration of fish processing companies.

⁶⁵ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁶⁶ The Logistics Business (2016) Brexit – a supply chain view.

⁶⁷ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁶⁸ Roberts, D. (2018) Businesses face unanswered questions a year from Brexit – sector by sector analysis.

⁶⁹ Moore, R. (2017) Brexit: UK ports boss flags up costly delays for ferry freight.

⁷⁰ Roberts, D. (2018) Businesses face unanswered questions a year from Brexit – sector by sector analysis.

⁷¹ Giles, C. (2017) Preparing for Brexit: a to-do list for UK companies.

- Manufacturing
 - Grimsby and Immingham handle steel for import and export.
 - Immingham is adjacent to 25% of the UK's oil refining capacity and has the largest UK owned petrochemical storage facility.
 - Grimsby handles other raw materials including minerals, ores and iron.
 - Grimsby specialises in the import and export of cars, linking the port to automotive.
 - Grimsby, Immingham and Boston import timber products from Scandinavia, linking to the LEP's specialisation in wood and furniture manufacture.
- Construction
 - Grimsby and Immingham import steel.
 - All three ports import timber.
- Energy
 - Immingham is in close proximity to North Sea oil.
 - Grimsby and Immingham having sites suitable for offshore wind operations.

2.57 Potential delays may be exacerbated in other UK ports by existing congestion issues, for instance at Dover, which accounts for over half of the heavy goods vehicles travelling through ports in the UK⁷², and Hull, where the A63 becomes blocked daily⁷³.

2.58 In comparison, GLLEP ports are not as exposed to delays. Both Grimsby and Immingham have good transport links to the M180, through to the M18 and M1. Furthermore, recent road access improvements costing £93.3 million have been made to the A160, improving access to Immingham. The port of Boston has an active daily steel train service to the Victoria Group Steel Terminal in the West Midlands. Brexit may offer the opportunity for GLLEP ports to increase their capacity, due to their good transportation links and greater development land. Despite good accessibility, it may become necessary for companies to consider alternative shipping arrangements or the costly option of greater warehousing⁷⁴.

2.59 Another major issue is HGV drivers being able to operate on the continent. To allow hauliers continued access to Europe, the Haulage Permits and Trailer Registration Bill was rushed through parliament in February 2018⁷⁵. This allows truck drivers to revert back to pre-EU membership systems of applying for 'third party permits' to travel through certain European countries, creating extra paperwork, costs and delays. It is expected to impact large haulage and warehousing firms in Immingham. At present there are between 103 and 1,224 permits available annually per non-member state to cover each trip into the EU. These will need to be shared

⁷² Blitz, J. (2017) Why Dover is braced for customs gridlock after Brexit.

⁷³ Riddy, A. (2017) A northern star on the rise.

⁷⁴ Giles, C. (2017) Preparing for Brexit: a to-do list for UK companies.

⁷⁵ Daly, P. (2018) North Lincolnshire lorry drivers face extra red tape if there is no Brexit deal.

amongst a sector which makes 300,000 journeys a year with 75,000 British lorries⁷⁶. Despite these concerns, a recent statement from the chief executive of a prominent logistics firm suggested that Brexit would not affect strategic partnerships with European firms, and operations will not be moving to Europe.

- 2.60 In terms of regulations, these are widely accepted across the industry⁷⁷. The exception being the European Port Services Regulation, which will be effective from March 2019. This is considered to have largely negative consequences for Britain's mostly smaller, privately-owned ports⁷⁸, because the effects will differ to mainland Europe where ports are largely owned by public sector port authorities⁷⁹.
- 2.61 The regulations will establish a framework for the provision of port services and common tools on financial transparency, port services and port infrastructure charges, with the view to making it easier for new providers to enter the market. This forces port operators to offer an alternative provider of services where there used to be one or subjects them to caps on their fees. The UK Major Ports Group believes this uncertainty creates inefficiencies and will discourage investment⁸⁰. Now that the legislation has come into force, UK ports are lobbying Government to secure exemption from the legislation in their negotiations with the EU⁸¹. Brexit could provide the sector with the opportunity to avoid implementing this potentially costly regulation.

Workforce

- 2.62 The sector is also exposed to Brexit through its workforce. In 2016, 11% of logistics workers were EU migrants⁸². Applying the same share to your employment figures could mean approximately 2,000 jobs. EU workers make up for a domestic shortage of commercial drivers⁸³, which as it stands is about 30,000⁸⁴. This is particularly poignant given that freight transport by road is the largest sub-sector in GLLEP.
- 2.63 Many migrants also work in packaging and distribution⁸⁵. The Freight Transport Association deputy chief executive James Hookham has acknowledged the role of EU warehouse staff and drivers in the sector, and the need for not exacerbating the skills shortage given the importance of logistics to the UK economy. These jobs are largely low skilled and given the Government's current stance, low skilled workers are the most likely to lose out from Brexit. This could exacerbate the existing shortage, which is problematic as it is considered unlikely that the resident population will be able to make up for the shortfall⁸⁶.

Funding and investment

- 2.64 The ports sector in GLLEP has received minimal funding from the EU. Some ports have received funding through schemes such as the Trans European Transport Network and Connecting Europe

⁷⁶ Roberts, D. (2018) Businesses face unanswered questions a year from Brexit – sector by sector analysis.

⁷⁷ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁷⁸ UK Major Ports (2017) Port Services Regulation comes into force – 24 March 2017.

⁷⁹ Wright, R. (2016) UK ports operator hope to escape new EU rules.

⁸⁰ *ibid.*

⁸¹ Barnard, B. (2017) UK ports seek exemption from EU port services regulation.

⁸² FTA (2017) Logistics Report.

⁸³ Supply Chain Quarterly (2017) The Impact of Brexit: Three key logistics concerns.

⁸⁴ Waters, W. (2017) Logistics 'under threat from latest UK Brexit proposals'.

⁸⁵ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁸⁶ Damco (2017) Into the Unknown – Supply Chains After Brexit.

Facility. However, outside of Dover, the UK share of individual funding awards amounts to less than €1 million⁸⁷. Therefore, the impact of no longer being eligible for these funds is likely to be minimal.

- 2.65 The impact of Brexit on the investment decisions of businesses in the ports and logistics sector is still unclear and the literature is scarce. It is perceived, however that exemption from the European Port Services Regulation could bypass potentially negative impacts on investment.

Visitor economy

Employment, specialisation and sub-sectors

- 2.66 The visitor economy is a broadly-defined sector, which is difficult to capture by standard sector classifications and includes activities which are not only related to tourism. It has the largest workforce of the sectors analysed in detail with 46,420 jobs⁸⁸. This is most likely due to the breadth of the sector and that many of these service activities are generally more labour-intensive when compared to manufacturing and ports, for instance.
- 2.67 It is also fast growing, with 23.4% job growth between 2011 and 2016 compared to the 16.8% average for the UK. Most of this growth occurred between 2015 and 2016 with a net increase of 6,500 jobs. This growth has been fairly evenly distributed across the LEP with no particular pockets where growth has been strongest. Job growth mirrors growth in visitor numbers. Lincolnshire had 20 million visitors in 2016, which was a 3 million rise or 18% increase from 2011, adding £300 million to the Lincolnshire economy⁸⁹. Further demonstrating the growth of the sector in GLLEP is anecdotal evidence that in the context of slim margins, farmers are expanding into the visitor economy, for instance by opening yoga retreats.
- 2.68 The largest sub-sectors in the visitor economy are restaurants, pubs and bars, and hotels. Restaurants, both licensed and unlicensed, and cafes accounted for 10,250 jobs in 2016, having grown 20.6% since 2011. There were 8,000 jobs in pubs and bars, having increased by 60.0%. Hotels experienced the highest growth of 85.7% from 2011 to 2016, increasing to 6,500 jobs were in hotels by 2016. The location quotient (LQ) table which this analysis is based on can be found in Appendix 2, Table 10.

Locations and key companies

- 2.69 Visitor economy activities are more dispersed across the LEP than for the previous sectors, as restaurants and pubs are amenities which locals use as well as tourists. Nonetheless, there are three main areas of concentration in Lincoln, Skegness and Cleethorpes, as shown in Figure 5.
- 2.70 Lincoln has 6,215 jobs in the visitor economy, of which just over one third of these are in restaurants and cafes. A further 990 are in hotels and 810 are in pubs and bars. The coastal area north of Skegness has the second largest concentration of jobs with 2,925 employed in the visitor

⁸⁷ House of Commons (2017) Maritime and Ports Sector Report.

⁸⁸ ONS (2016) Business Register and Employment Survey.

⁸⁹ Barker, S. (2017) Almost 20 million tourists attracted to Lincolnshire in 2016, new figures reveal.

economy. Over 40% of these jobs are in holiday centres and villages, due to the presence of Butlins and a range of holiday parks. Cleethorpes has 2,075 jobs in the visitor economy. The largest sub-sector is campsites with 400 jobs, due to the existence of several caravan and holiday parks, closely followed by restaurants and cafes with 370 jobs. Skegness town centre has 1,560 jobs in the visitor economy, 425 of which are in restaurants and cafes, and 315 of which are in hotels.

Metro — Dynamics

Geographic area	Total no. jobs	No. jobs in sub-sectors	Example companies
1 Lincoln	6,215	Restaurants and cafes: 2,130, Hotels: 990, Pubs and bars: 810	[Multiple small companies]
2 Coast north of Skegness	2,925	Holiday centres and villages: 1,275, Campsites: 775, Restaurants and cafes: 255, Pubs and bars: 255	Butlins, Blue Anchor Leisure
3 Cleethorpes	2,075	Campsites: 400, Restaurants and cafes: 370, Pubs and bars: 210, Hotels: 140	Cleethorpes Showground Caravan Park, Beachcomber Holiday Park, Thorpe Park Holiday Centre
4 Skegness town centre	1,560	Restaurants and cafes: 425, Hotels: 315, Take-aways: 140, Pubs and bars: 135	[Multiple small companies]

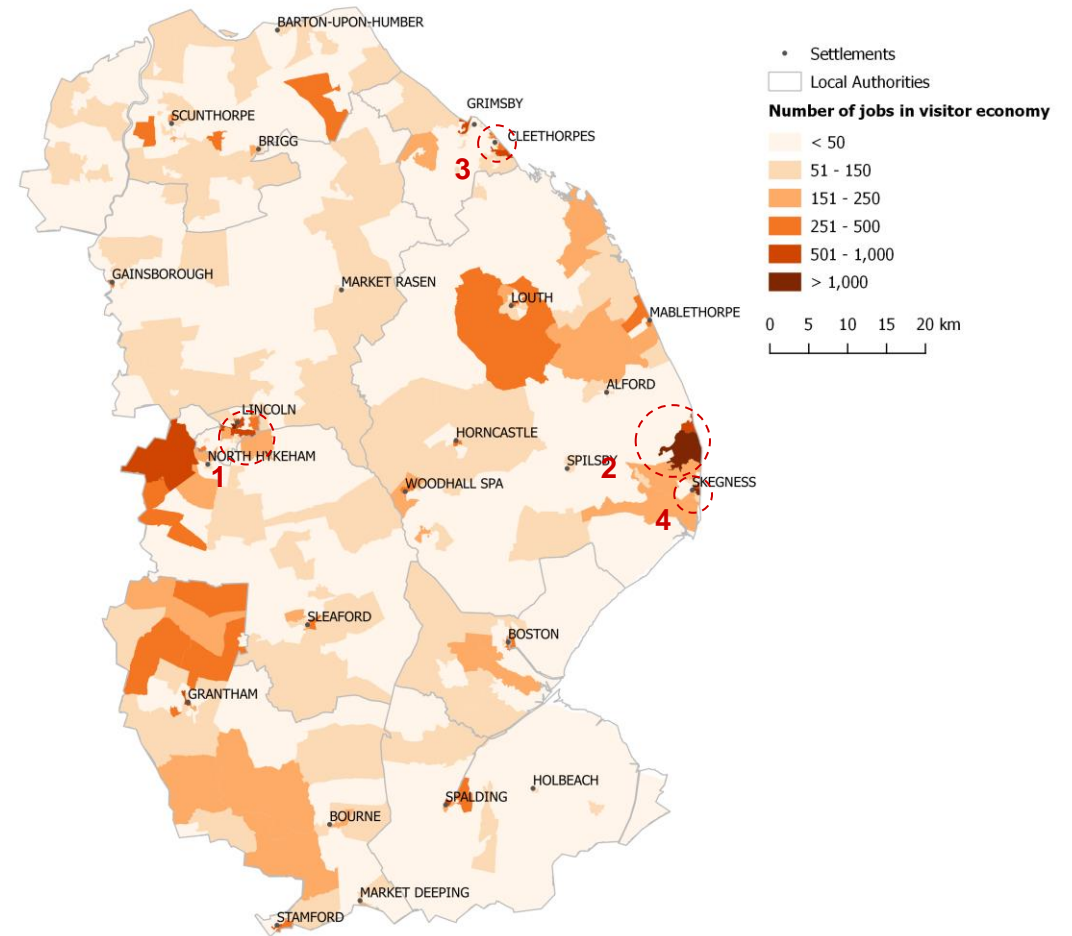


Figure 5 – Spatial distribution of visitor economy jobs in GLLEP (Source: BRES, 2016)

Exposure to Brexit

Workforce

- 2.71 There are a large number of EU migrants working in the sector. Between April 2016 and March 2017, 9.5% of the workforce or 554,000 non-UK EU nationals were employed in distribution, hotels and restaurants⁹⁰. If the same share is applied to your employment figures, this could mean over 4,000 jobs. These national figures could be an underestimate, however. According to a KPMG report for the British Hospitality Association, 75% of waiting staff, 37% of housekeeping staff and 25% of all chefs are from the EU⁹¹.
- 2.72 This reliance on EU workers is related to a problematic issue for the sector. EU migrants working in hospitality roles plug a domestic skills and labour shortage⁹². This is reflected in the large number of vacancies which are considered hard-to-fill: 42% in hotels, 38% in restaurants and 28% in tourist services⁹³. Given the size of the hospitality sector in GLLEP, encompassing restaurants, pubs and bars, and hotels, the difficulty to recruit domestically and necessity for companies to employ foreign workers is problematic.
- 2.73 This makes the sector very exposed should there be restrictions to labour. The sector is likely to face negative supply side impacts if immigration is significantly reduced⁹⁴. For instance, Brexit may increase the expense of recruiting and retaining EU staff⁹⁵. It may also increase employment costs for businesses as they compete for fewer skilled workers and need to spend more resources on training⁹⁶. This in turn may increase consumer costs and undermine the competitiveness of the UK visitor economy⁹⁷.

Trade and regulations

- 2.74 The exposure of the visitor economy to Brexit impacts on trade and regulations is likely to present opportunities to the sector and be less severe. One short-term benefit the sector has experienced since the referendum has been the effects of the depreciation of sterling. There has been a rise in domestic holidays or 'staycations', due to the lower cost of a holiday in the UK relative to abroad⁹⁸. Simultaneously, there has been an 8% rise in overseas visitors in 2017, perhaps due to reduced travelling costs⁹⁹. As mentioned earlier, Lincolnshire has experienced a growth in visitor numbers. The precise split between domestic and overseas visitors is unclear; however, Brexit offers the visitor economy in GLLEP the opportunity to continue its positive trajectory.
- 2.75 Following Brexit, trends in rising visitor numbers could reverse for a number of reasons:

⁹⁰ ONS (2017) Employment by Industry and Nationality for EU and non-EU workers, April 2016 to March 2017).

⁹¹ KPMG (2017) Labour migration in the hospitality sector.

⁹² CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations; Cambridge Econometrics (2018) Preparing for Brexit.

⁹³ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

⁹⁴ Cambridge Econometrics (2018) Preparing for Brexit.

⁹⁵ ABTA (2016) What Brexit might mean for UK travel.

⁹⁶ Tourism Alliance (2017) Tourism After Brexit.

⁹⁷ *ibid.*

⁹⁸ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations; Cambridge Econometrics (2018) Preparing for Brexit.

⁹⁹ Reckless (2017) What Impact Could Brexit Really Have on UK Tourism?

- Firstly, the pound may recover to pre-Brexit levels, making the holidays abroad more affordable for Brits, whilst disincentivising foreign tourists.
 - Secondly, the UK may become a less attractive tourist destination, due to increasing travel costs, more difficult border controls and checks, and the perception of the UK as less welcoming¹⁰⁰. This would be a quite significant problem as, according to the ONS International Passenger Survey, 66% of the UK's visitors in 2017 came from the EU¹⁰¹.
- 2.76 Brexit is unlikely to offer the sector the opportunity to design its own regulation. The majority of consumer protection issues are subject to EU regulation, including the package travel directive, European health insurance, consumer rights directive and passenger rights¹⁰². It is critical that consumer protection remains high to continue to attract foreign visitors¹⁰³, so it is likely the sector will continue to comply with EU regulations. Further, it is likely that the UK will continue to co-operate with current legislation in place around transport; however, it may renegotiate whether to continue with or form new agreements on some aspects of aviation regulation (e.g. Open Skies agreements)¹⁰⁴.

Funding and investment

- 2.77 The Brexit impact on funding and investment is harder to ascertain. EU funding has had some positive impacts on the visitor economy. For instance, GLLEP has benefitted from European Agricultural Fund for Rural Development LEADER grants. For example, Claythorpe Watermill Holiday Cottages received £41,000 in grants, Ferry Ales Brewery received £39,000, and Oxcombe Historic Farm Building Project received £25,000¹⁰⁵.
- 2.78 Funding under the Common Agricultural Policy (CAP) has also been beneficial to visitor economy. In the period of 2014 to 2020, €2.6 billion of funds were allocated nationally to supporting rural services, SMEs, tourism, cultural and heritage activities, with the aim of making the UK attractive to visitors¹⁰⁶. However, the value of tourism to the rural economy remains largely misunderstood, so only a small proportion of CAP is used for tourist development¹⁰⁷.
- 2.79 It is difficult to quantify the extent of FDI in the UK tourism industry; however, Brexit may directly impact FDI from the EU and indirectly impact FDI from outside the EU due to uncertainty over trade and regulations¹⁰⁸.

¹⁰⁰ Cambridge Econometrics (2018) Preparing for Brexit.

¹⁰¹ ONS (2018) Overseas travel and tourism, monthly.

¹⁰² ABTA (2016) What Brexit might mean for UK travel.

¹⁰³ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

¹⁰⁴ ABTA (2016) What Brexit might mean for UK travel.

¹⁰⁵ Lincolnshire County Council (2017) Future Priorities for Funding Post Brexit.

¹⁰⁶ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

¹⁰⁷ Tourism Alliance (2017) Tourism After Brexit.

¹⁰⁸ ABTA (2016) What Brexit might mean for UK travel.

3 Brexit exposure in other sectors

- 3.1 This section provides an overview of Brexit exposure in sectors considered only in the high-level stage 1 analysis. The analysis is at the national level only and the sectors are not examined against local sub-sector specialisms or businesses. Nonetheless, this analysis is still likely to be relevant to the economy and business base of GLLEP.

Health and social care

Employment, specialisation and local assets

- 3.2 Health and social care is part of the GLLEP priority sector of health and care. It is labour-intensive with high employment totalling 60,500 jobs¹⁰⁹. Specifically, human health is the third largest sub-sector by number of jobs with 33,000. This is an important sector nationally and is present in all local economies, therefore there is relatively low specialisation in GLLEP.

Trade and regulations

- 3.3 The health and social care sector may feel the impact of changes to trade in other sectors. For instance, if trade barriers (such as tariffs) were imposed on certain goods and services, this may increase the cost to the NHS and social care sector, which could impact the supply of drugs and treatments according to Professor Martin Green, the Chief Executive of Care England¹¹⁰.
- 3.4 Similarly, the health and social care sector may be impacted by regulatory changes relating to pharmaceuticals, procurement and competition rules, and cross-border public health co-operation¹¹¹.

Workforce

- 3.5 The EU workforce makes a significant contribution to the health and social care sector, particularly for the social care sector in rural areas¹¹². EU workers comprise 62,000 of the 1.2 million NHS workforce (5.2%), including over 10,000 doctors and over 20,000 nurses and health staff, and 95,000 of the 1.3 million (7.3%) adult social care workforce¹¹³. Many staff also work in non-health and care roles, for instance cleaners and caterers, which are essential for this sector¹¹⁴.

¹⁰⁹ ONS (2016) Business Register and Employment Survey.

¹¹⁰ The UK in a Changing Europe (2017) Social care post Brexit.

¹¹¹ The King's Fund (2017) What impact will Brexit have on the health and social care workforce?

¹¹² The UK in a Changing Europe (2017) Social care post Brexit.

¹¹³ The King's Fund (2017) Brexit: the implications for health and social care.

¹¹⁴ House of Commons Health Committee (2017) Brexit and health and social care – people and progress. Eighth Report of Session 2016-17.

- 3.6 Using September 2016 data, the Department of Health has analysed regional dependency upon EU staff¹¹⁵. London and the South East have the largest proportion of EU staff, at 10-11% and 6-8% respectively. In the East Midlands, the percentage of staff who are EU nationals is 2-5%.
- 3.7 Health and care providers often struggle to recruit and retain permanent staff. There was a shortfall of 47,000 staff in the NHS in 2015, particularly for nurses, midwives and health care assistants¹¹⁶. There is a high vacancy (6.6%) and turnover (27.8% leaving each year) rate in adult social care¹¹⁷. Commonly cited reasons deterring the domestic workforce from working in social care include low pay and zero-hour contracts.¹¹⁸
- 3.8 In addition, there are existing shortages in nursing, putting pressure on having enough nurses to meet regulatory criteria and increasing the use of expensive agency staff¹¹⁹. Worsening this shortage is the 96% fall in the number of EU nationals registering as nurses in UK between referendum and May 2017¹²⁰. However, this cannot be fully attributed to Brexit¹²¹.

Funding and investment

- 3.9 The UK's health and social care sector is largely funded nationally. A potentially negative impact on its funding may arise from the forecasted slowing of the UK economy post-Brexit, which may result in cuts or lower growth in public spending, thus impacting the sector¹²². In addition, the sector is significantly supported by voluntary organisations. In 2014, UK charities received £200 million of funding from the EU, which may be difficult to replace when the UK is no longer eligible for these funds¹²³.

Agriculture

Employment, specialisation and local assets

- 3.10 There were 15,222 people employed in agriculture in GLLEP in 2016¹²⁴. GLLEP is an area of high specialisation, as the share of jobs in agriculture is over 3 times higher than in England¹²⁵. The area contributes to 10% of English agriculture and specialises in both crop and livestock farming, producing 25% of vegetables, 21% of ornamental crops, 19% of sugar beet, 17% of meat chickens, 18% of duck and 21% of turkey¹²⁶.

¹¹⁵ *ibid.*

¹¹⁶ The King's Fund (2017) Brexit: the implications for health and social care.

¹¹⁷ The King's Fund (2017) What impact will Brexit have on the health and social care workforce?; Brexit: the implications for health and social care.

¹¹⁸ Mulholland, H. (2017) Brexit fear trigger exodus of crucial health and social care workforce.

¹¹⁹ The UK in a Changing Europe (2017) Social care post Brexit.

¹²⁰ The King's Fund (2017) Brexit: the implications for health and social care.

¹²¹ House of Commons Health Committee (2017) Brexit and health and social care – people and progress. Eighth Report of Session 2016-17.

¹²² The King's Fund (2017) Brexit: the implications for health and social care.

¹²³ VODG (2016) Post-Brexit: The impact for social care provider organisations.

¹²⁴ Defra (2016) June agricultural survey.

¹²⁵ Defra (2016) June agricultural survey; ONS (2016) Business Register and Employment Survey.

¹²⁶ GLLEP (2014) Greater Lincolnshire Agri-food Sector Plan 2014-2020.

Trade and regulations

- 3.11 The UK's agricultural sector is highly reliant on trade with the EU as 71.0% of UK exports of agricultural products were to EU countries in 2017¹²⁷. This dependence would make the sector vulnerable to trade barriers, such as tariffs, should the UK cease its membership of the Customs Union and fail to negotiate free trade deals. Agriculture, hunting, forestry and fishing has been listed as one of the sectors expected to be most highly impacted by potential future tariffs¹²⁸. A slowdown in agricultural trade may impact interconnected sectors, such as food processing¹²⁹. On the other hand, Brexit is seen as an opportunity for this sector to expand exports globally¹³⁰.
- 3.12 EU rules regarding marketing standards and product safety apply for products sold on the EU market, even for non-EU imports, so continued adherence to these is essential. Regulatory stability will be necessary to ease trade in agricultural products¹³¹.

Workforce

- 3.13 Agriculture is a labour-intensive sector, which is reliant upon both full-time and seasonal EU labour. Between April 2016 and March 2017, 10% of the workforce (36,000 people) in this sector were non-UK EU nationals¹³². This figure is unlikely to completely account for temporary and seasonal workers, as the Annual Population Survey methodology uses a sample of UK residents. It is estimated that 98% of temporary workers are recruited from the EU¹³³.
- 3.14 The reliance on seasonal EU labour stems from the struggle for farmers to recruit sufficient numbers of domestic workers¹³⁴. According to survey data from the National Farmers Union, more than 4,300 vacancies were unfilled in 2017, causing losses to farmers¹³⁵. A restriction on free movement may result in labour shortages, which could reduce production, and necessitate increased imports and price rises¹³⁶.

Funding and investment

- 3.15 Farmers in the UK are highly reliant on subsidies from the Common Agricultural Policy (CAP). In 2015, farmers in the UK received €3.084 billion in direct payments¹³⁷ which, on average, contributed 55% of the total income from farming¹³⁸. Alongside CAP subsidies, the UK was allocated €5.2 billion of funds for rural development projects between 2014 and 2020¹³⁹. With regards to the funding of agriculture following Brexit, Michael Gove has hinted at the Government making money available for environmental protection¹⁴⁰.

¹²⁷ ONS (2017) UK trade in goods.

¹²⁸ Cambridge Econometrics (2018) Preparing for Brexit.

¹²⁹ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

¹³⁰ *ibid.*

¹³¹ *ibid.*; NFU (2016) UK Farming's Relationship with the EU.

¹³² ONS (2017) Employment by Industry and Nationality for EU and non-EU workers, April 2016 to March 2017).

¹³³ House of Commons (2017) Migrant workers in agriculture.

¹³⁴ NFU (2016) UK Farming's Relationship with the EU.

¹³⁵ Carrington, D. (2018) Lack of migrant workers left food rotting in UK fields last year, data reveals.

¹³⁶ Smithson Hill (2017) AgriTech could assist potential agricultural worker shortage post Brexit.

¹³⁷ NFU (2016) UK Farming's Relationship with the EU.

¹³⁸ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

¹³⁹ NFU (2016) UK Farming's Relationship with the EU.

¹⁴⁰ Simons, N. (2018) Michael Gove Pledges To Replace EU Common Agricultural Policy with 'Green Brexit'.

Offshore Wind

Employment, specialisation and local assets

- 3.16 There are over 12,000 jobs in the low carbon sector¹⁴¹. In GLLEP, offshore wind dominates the low carbon sector. Lincs Wind Farm, Westermost Rough Offshore Wind Farm and Humber Gateway Windfarm all have their operations and maintenance bases in Grimsby.

Trade and regulations

- 3.17 The UK is a net importer of energy¹⁴² but is the global leader in offshore wind. It exports related services globally, including cable installation, equipment repair and construction¹⁴³. In recent years, UK offshore wind sector companies have won 115 contracts to build and service 50 offshore wind projects abroad¹⁴⁴. This sector is considered to have good potential for growing exports in new markets, which will be crucial after Brexit¹⁴⁵. Conversely, Brexit may harm the UK's status as an ideal location to access the European offshore market, as claimed in a UK Trade and Investment publication¹⁴⁶.
- 3.18 Much of energy policy has been shaped by the EU¹⁴⁷ and any regulatory changes may impact business, funding and investment. Continued compliance may be necessary where some contracts have particular clauses¹⁴⁸.

Workforce

- 3.19 A lack of skills is a major issue for recruiting people to fill particular roles in the sector. There is a shortage of offshore wind farm engineers¹⁴⁹, technicians and environmental analysts, helicopter and boat pilots¹⁵⁰. Offshore wind relates to particular sub-sectors of construction and manufacturing, which also have labour shortages. Therefore, it is to face similar problems in accessing skilled labour post-Brexit.

Funding and investment

- 3.20 Offshore wind in the UK has traditionally benefited from a range of EU funding initiatives. EU funding and European Investment Bank (EIB) loans have provided £2.5 billion per year for energy-related infrastructure, climate change mitigation, research and development from¹⁵¹. Approximately €2 billion has been made available by the European Fund for Strategic Investment (EFSI)¹⁵² to fund energy projects, including offshore wind¹⁵³. European Research Council and

¹⁴¹ Cambridge Econometrics LEFN (2014) GLLEP website.

¹⁴² CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

¹⁴³ Renewable UK (2016) Exporting Offshore Wind.

¹⁴⁴ *ibid.*

¹⁴⁵ Renewable UK (2017) Export Nation: A Year in UK Wind, Wave and Tidal Exports.

¹⁴⁶ UK Trade & Investment (2015) UK Offshore Wind: Opportunities for trade and investment.

¹⁴⁷ Chatham House (2017) Staying Connected: Key Elements for UK-EU27 Energy Cooperation After Brexit.

¹⁴⁸ Norton Rose Fulbright (2016) UK offshore wind: What impact is Brexit likely to have on the UK's offshore wind industry?

¹⁴⁹ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

¹⁵⁰ HM Government (2013) Offshore Wind Industrial Strategy: Business and Government Action.

¹⁵¹ Chatham House (2017) Staying Connected: Key Elements for UK-EU27 Energy Cooperation After Brexit.

¹⁵² Watson Farley and Williams (2016) Implications of Brexit on UK renewable energy.

¹⁵³ Chatham House (2017) Staying Connected: Key Elements for UK-EU27 Energy Cooperation After Brexit.

Horizon 2020 have also been critical to research and development in the energy sector¹⁵⁴. Losing eligibility to these funding streams may limit sector growth.

- 3.21 The impact of Brexit on private investment in the sector is uncertain with a mixed response from investors.

Life sciences and medical research (including pharmaceuticals)

Employment, specialisation and local assets

- 3.22 As a highly productive sector, life science and medical research (including pharmaceuticals) is a priority sector for GLLEP. There are currently 570 jobs in the LEP area¹⁵⁵.

Trade and regulations

- 3.23 The EU is a substantial trading partner in pharmaceuticals accounting for 48.2% of UK exports¹⁵⁶. Supply chains in pharmaceuticals operate across borders, so it could be problematic if trade barriers appear at various stages of production. In the EU, there are no import tariffs on pharmaceuticals; however, tariffs exist on raw materials and machinery, which, if imposed, would increase production costs¹⁵⁷. It is unclear whether the UK will be able to negotiate favourable terms of trade for these items¹⁵⁸.
- 3.24 The pharmaceutical sector is highly regulated by the EU¹⁵⁹. Continued regulatory alignment would enable UK medicines to be sold in the EU but limit the UK's capacity to develop new regulatory frameworks that are potentially more beneficial for British businesses.

Workforce

- 3.25 Within UK research institutions, 17% of STEM academics are EU nationals¹⁶⁰. Scientific research and development is intrinsically international in scope and researcher mobility is seen as critical to the global success of UK science¹⁶¹, particularly due to the importance of collaboration. Furthermore, multinational pharmaceutical companies in the UK often draw on an international talent base¹⁶². Restricted freedom of movement may encourage companies to relocate to an alternative EU country with easier access to EU labour, and the UK may become a less attractive destination for highly-educated EU workers¹⁶³.

¹⁵⁴ Watson Farley and Williams (2016) Implications of Brexit on UK renewable energy.

¹⁵⁵ ONS (2016) Business Register and Employment Survey.

¹⁵⁶ ONS (2016) UK trade in goods.

¹⁵⁷ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

¹⁵⁸ Simmons & Simmons LLP (2017) Brexit: the implications for life sciences.

¹⁵⁹ Bird and Bird LLP (2017) Brexit: Life Sciences implications

¹⁶⁰ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations.

¹⁶¹ House of Lords (2016) EU membership and UK science. Science and Technology Select Committee: 2nd Report of Session 2015-2016.

¹⁶² PwC (2016) Brexit Monitor: The impact on Pharma and Life Sciences.

¹⁶³ Bruegel (2017) Pharmaceutical industry at risk from Brexit.

Funding and investment

- 3.26 Access to future funds is the main issue facing the science and technology sector in the UK after Brexit¹⁶⁴. Scientific research and development has benefited greatly from EU funding, primarily through Horizon 2020, whereby in 2015, UK university researchers received the largest share of total projects funded (over 2,000 per year) and the largest share of grants (€1.2 billion, or 16% of the total)¹⁶⁵. Government will underwrite all funding committed in the current funding period (to 2020), however the UK will lose access to EU funds thereafter if it leaves the Single Market.
- 3.27 Furthermore, the UK may lose access to collaborative projects with EU partners, as certain funding streams are directed solely to cross-border projects¹⁶⁶. Depending on future agreements with the EU, the UK could experience less benefits from access to EU research groups and their skills and collaboration opportunities¹⁶⁷. In the face of funding uncertainty, UK pharmaceutical multinationals may move their research projects outside the UK to ensure continued access to funding streams or change their lead team¹⁶⁸.

Construction

Employment, specialisation and local assets

- 3.28 The construction sector has high levels of employment with 26,000 jobs, over half of which (15,000 jobs) are in specialised construction activities, which could relate to the offshore wind sector¹⁶⁹. Construction is critical to assisting the SEP housing ambition of building almost 100,000 new homes by 2030¹⁷⁰. It also supports projects and activities in other sectors, such as the construction of the Lincoln Science and Innovation Park.

Trade and regulations

- 3.29 According to Sarah McMonagle, director of external affairs at the Federation of Master Builders, only 25% of construction materials are imported¹⁷¹. However, data from the Department of Business Skills and Innovation 2010 Study shows that the EU is the origin of 64% of imports and destination for 63% of exports in building materials¹⁷². Loss of access to the Single Market and the introduction of duties or complex restrictions on materials (e.g. limits to quantities imported) may cause shortages¹⁷³ or delays in importing and exporting essential resources¹⁷⁴, increasing the cost of materials and hence increasing construction costs for British companies and consumers¹⁷⁵.

¹⁶⁴ Cambridge Econometrics (2018) Preparing for Brexit.

¹⁶⁵ Bruegel (2017) The impact of Brexit on UK tertiary education and R&D.

¹⁶⁶ Prospect (2017) Brexit and science.

¹⁶⁷ Cambridge Econometrics (2018) Preparing for Brexit.

¹⁶⁸ PwC (2016) Brexit Monitor: The impact on Pharma and Life Sciences.

¹⁶⁹ ONS (2016) Business Register and Employment Survey.

¹⁷⁰ GLLEP (2016) Strategic Economic Plan 2014-2030. Refresh.

¹⁷¹ Allen, K. (2017) UK firms brace for further Brexit price rises, surveys show.

¹⁷² Designing Buildings (2017) What does Brexit mean for construction?

¹⁷³ Designing Buildings (2017) What does Brexit mean for construction?

¹⁷⁴ Gately PLC (2016) The construction industry post Brexit.

¹⁷⁵ Cambridge Econometrics (2018) Preparing for Brexit.

- 3.30 EU law has minimal presence in the construction sector¹⁷⁶; however, continued compliance with legislation relating to construction materials will be necessary to maintain ease of trade¹⁷⁷.

Workforce

- 3.31 The UK construction workforce relies heavily on a foreign labour force, as almost 13% of construction workers across the UK were born abroad¹⁷⁸. Specifically, non-UK EU nationals accounted for 8.8% of the workforce in this sector between April 2016 and March 2017¹⁷⁹. The main reason for the reliance on skilled EU workers, who are typically from Eastern European countries¹⁸⁰, is the failure to recruit from the domestic market due to the skills shortage within the sector¹⁸¹. Skills shortages are likely to worsen once the UK leaves the Single Market and stops the free movement of people. A reduced supply of labour may cause delays and drive up wages, resulting in higher project costs¹⁸², as well as reduce the capacity of house builders, further contributing to an increase in costs¹⁸³. Conversely, UK workers may benefit from reduced competition for jobs and access to larger selection of roles within the industry, and potentially higher wages.

Funding and investment

- 3.32 The construction sector is one of the largest beneficiaries of EU funding¹⁸⁴ with access to the European Investment Bank (EIB), European Investment Fund (EIF), European Structural Investment Fund (ESIF), European Regional Development Fund (ERDF) and Joint European Support for Sustainable Investment in City Areas (Jessica). In 2015, the EIB and EIF together invested €7.8 billion in UK infrastructure projects and lent €666 million to SMEs¹⁸⁵. The future sustainability of funding is of vital importance to the sector's continued success, particularly for large infrastructure¹⁸⁶ and regeneration projects¹⁸⁷.
- 3.33 There is likely to be a reduction in foreign investment in commercial and residential development¹⁸⁸, as investors delay making decisions on future of projects due to uncertainty over the UK economy following Brexit¹⁸⁹.

¹⁷⁶ Burges Salmon (2016) Brexit: implications for UK construction

¹⁷⁷ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations; Designing Buildings (2017) What does Brexit mean for construction?

¹⁷⁸ Cambridge Econometrics (2018) Preparing for Brexit.

¹⁷⁹ ONS (2017) Employment by Industry and Nationality for EU and non-EU workers, April 2016 to March 2017).

¹⁸⁰ Fisher Scoggins Waters (2016) How Could a Brexit Affect the Construction Industry?

¹⁸¹ Eversheds-Sutherland (2016) Brexit and the implications for UK construction.

¹⁸² *ibid.*

¹⁸³ Gately PLC (2016) The construction industry post Brexit.

¹⁸⁴ Fisher Scoggins Waters (2016) How Could a Brexit Affect the Construction Industry?

¹⁸⁵ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations; Cambridge Econometrics (2018) Preparing for Brexit.

¹⁸⁶ CBI (2016) Making a success of Brexit: A whole-economy view of the UK-EU negotiations; Cambridge Econometrics (2018) Preparing for Brexit.

¹⁸⁷ Ashfords (2016) Brexit – implications for the construction industry.

¹⁸⁸ Norton Rose Fulbright (2017) Impact of Brexit on infrastructure, mining and commodities.

¹⁸⁹ Cambridge Econometrics (2018) Preparing for Brexit.

4 Emerging policy priorities

- 4.1 GLLEP works with the public and private sector to deliver sustainable growth in Greater Lincolnshire. The LEP has defined its role as generating economic intelligence, promoting the economic interests of the area, influencing Government in order to secure investment, and delivering strategic investment programmes to promote local prosperity.
- 4.2 A key part of this is through ongoing engagement with businesses – including through the Growth Hub - to support them with improvements in productivity, innovation and job growth.
- 4.3 Another aspect of driving sustainable growth in Greater Lincolnshire is through developing infrastructure. GLLEP works with a range of partners - including the Midlands Engine, Humber Estuary and Northern Powerhouse - to represent the economic interests of the area.
- 4.4 The LEP and partners will also need to work with Government departments on policy – including: the Department of Business, Energy and Industrial Strategy (BEIS), the Ministry for Housing, Communities and Local Governance (MHCLG), the Department for International Trade (DIT), and the Department for Exiting the EU (DExEU).
- 4.5 This work has been commissioned to provide analysis of the potential exposure of Brexit in Greater Lincolnshire’s economy, focusing on key sectors. Businesses are likely to be impacted in the following ways:
 - Transition costs largely associated with administrative changes to trading, regulatory and employment practices.
 - Increasingly complex trading relationships with EU partners and the need to expand trade to new export markets beyond the EU.
 - Likelihood of continued regulatory compliance with current EU legislation to ease trade, but opportunity for more progressive domestic policy in certain areas.
 - Greater need to support the provision of skills in the local labour market to compensate for skills and jobs previously filled by EU migrants.
 - Uncertain post-Brexit funding and investment environment.
- 4.6 This analysis suggests the following potential policy approaches that GLLEP might make to support businesses in the period ahead. These need to be considered as part of wider discussions on the emerging Local Industrial Strategy (LIS). GLLEP is developing plans for a Greater Lincolnshire LIS with a heavy emphasis on stakeholder engagement throughout the process and a renewed evidence base. Moreover, GLLEP has been selected as one of the places that will receive support from the What Works Centre for Local Growth to help develop a LIS.
- 4.7 Work on the LIS will have to have a high focus on the area’s sectoral strengths and opportunities, but also considering the importance of raising productivity, ensuring that growth is inclusive, and supporting the four Grand Challenges set out in the Industrial Strategy White Paper: artificial

intelligence and big data, clean growth, the future of mobility (public and private transport systems), and meeting the needs of an ageing society.

- 4.8 This list of policy priorities is not exhaustive, nor does it aim to provide detailed policy guidance. It should be interpreted as a starting point for the development of GLLEP’s overall strategy for economic success and inclusive growth, particularly in the post-Brexit context.

Support local businesses to become ‘Brexit ready’

- 4.9 It will be important to ensure local businesses in Greater Lincolnshire have adequate support to address new administrative challenges and costs resulting from Brexit, particularly for companies highly exposed to trade and EU workforce. This could be developed in collaboration with GLLEP Food, Manufacturing and Visitor Economy Boards, the Growth Hub, the Chambers of Commerce and other local business groups/associations or organised through sector workshops for SMEs. It would include both providing advice and helping securing financing for companies to deal, among other, with the following issues:

- The administrative costs of implementing trade barriers, such as complying with new standards and regulations and other potential new legal requirements.
- The administrative costs and required cash-flow to deal with a potential EU VAT payment in advance.
- Provide legal advice and support administrative costs of recruiting new EU citizens and reviewing the legal status of their current workers.
- Support businesses in developing training programmes for current and new employees, and in creating new apprenticeships and developing links to education institutions.

- 4.10 As part of making businesses ‘Brexit ready’, the Local Industrial Strategy should be used as an opportunity to engage with local businesses and the Government. Local partners should use the development of the Local Industrial Strategy as an opportunity to further reinforce the area’s economic strengths and sectoral specialisms and to ensure that central Government is fully aware of the contribution that those specialisations make to the national economy. There may also be an opportunity for GLLEP to contribute to the Grand Challenge of mobility and clean growth through the area’s strengths in manufacturing.

- 4.11 Many of area’s sectors have similar requirements (e.g. for technical skills, leadership skills, new technologies and easier to access funding and partnerships for smaller scale commercial research and innovation), and many face global opportunities for new markets and new products. The LIS is a great opportunity for GLLEP to engage businesses and local partners on how to better address the main challenges of Brexit.

Develop local skills

- 4.12 According to the latest review, the LEP area has a high and growing demand for higher skills. This trend is only expected to increase following Brexit and its potential impacts on the local workforce, particularly for sectors which are highly reliant on an EU workforce, such as food processing, manufacturing, ports and logistics, and the visitor economy.

- 4.13 It will therefore be vital to develop the LEP area's local skills base to ensure young people are ready for work, the current workforce has access to continuous learning opportunities, and local businesses are able to recruit the high-skilled workforce they need to be productive and competitive. Actions might include:
- Increasing the LEP area's offer of technical education (building on existing successful examples, such as Lincoln University Technical College and Grantham College) and apprenticeships. This should also include provision of an adequate offer of adult education.
 - Promoting the future skills required by emerging sectors of the local economy so that young people understand the opportunities available (particularly in STEM subjects).
 - Ensuring that young people receive adequate careers education, information, advice and guidance (CEIAG) and experience of working environments as part of their education (for example, in line with the benchmarks developed by the Gatsby Foundation).
 - Working with the LEP area's main employers to ensure they offer adequate career progression and opportunities for training and upskilling through life to their current staff, and plan for their future skills need.
 - Retaining and attracting skilled workers, by creating the right conditions for young residents to stay in Greater Lincolnshire and develop higher skilled careers, and by promoting (internally and externally) the region as an attractive place for high skilled people to live and work (related to the place marketing strategy).
 - Use Skills Deal activity to proactively reach out to businesses (particularly micro and small companies) which may face skills shortages post-Brexit.

Ensure Greater Lincolnshire is 'open for business'

Strengthen the local strategies for place marketing and inward investment

- 4.14 As the labour market continues to tighten and if migration continues to slow, then there is a strong case for further focussing and strengthening place marketing and inward investment in order to reach out to the people you need to attract and retain as well as the investment needed to drive productivity. This will require developing a strategic vision and securing the necessary funds. GLLEP could build on the work it recently did of the Marketing Lincolnshire website and interactive toolkit, and work with partners such as the Midlands Engine. Effectively presenting Lincolnshire as a welcoming region and a great place to live, work, invest and visit will be increasingly important following Brexit.

Continue to support the growth of the visitor economy

- 4.15 This might include actions to continually promoting the key destinations in Greater Lincolnshire for domestic visitors, increasing local provision of training and apprenticeships to develop local key skills for this sector (hospitality workers, chefs, etc.), and supporting innovative projects linking to other areas of local strength (e.g. agriculture and food) which would create new tourism offer while increasing the value added of activities in those sectors. In line with the

strategy for place marketing, projecting an image of Lincolnshire, both internally as externally, and a welcoming and friendly place for residents, workers and visitors will also be crucial.

Strengthen key sectors

Encourage innovation in key sectors

4.16 There is an opportunity for GLLEP to work with Growth Hubs, Innovation Hubs, and use the UK Shared Prosperity Fund to proactively reach out to those businesses (particularly micro and small companies) which could have opportunities for growth and/or be more challenged by Brexit. These would include, among others:

- Encouraging innovation and developing automation in food processing, manufacturing, ports and logistics and visitor economy in order to decrease reliance on low-skilled EU workers and develop high-productivity, high-skill businesses.
- Developing new products for different markets, including the necessary market research, investment, and export finance.
- Establishing new connections and business relationships with overseas markets, starting with existing local institutional and business ties.

Collaborate with other regions to promote and strengthen key sectors

4.17 This will be particularly relevant in places where there is a common interest in reaching out to new markets or designing new products. For example, New Anglia LEP shares a border with GLLEP and has a reasonably similar economic base. The Midlands Engine might also be instrumental in providing critical mass and in understanding sectoral opportunities and synergies with other areas. For instance, Future Food Processing has been identified as one of four Market-Driven Priorities in the Midlands Engine Science and Innovation Audit.

Continue to implement and develop priority sector plans

4.18 GLLEP has detailed sector plans for agri-food and manufacturing. These identify a series of actions around the areas of innovation and research, exports, inward investment, infrastructure, logistics, supply chains and skills to take forward to support the sectors. Brexit offers a key opportunity to refocus these existing sector plans and develop new sector plans for ports and logistics and the visitor economy.

Carry out a comprehensive review of LEP area's infrastructure

4.19 Developing a strategic vision of the local infrastructure and how it aligns with development schemes is key to unlock growth in investment and to raise productivity. This will be particularly relevant to the logistics sector, which represents one of the main economic strengths of the GLLEP. There are three good ports in the GLLEP area which are key economic assets for the region. It is vital to ensure they will continue to be successful and have the adequate capacity and equipment (including structures for the likely new requirements for customs/border checks) as well as good transport links to the rest of the UK, continuing to contribute to the economic competitiveness of the region. Reviewing key logistics infrastructure in GLLEP will allow the development of a strategic vision ensuring the region takes full advantage of its current infrastructure and identifying potential needs and priorities for infrastructure investment.

- 4.20 It is important to note that the final outcomes of Brexit are still highly uncertain and the extent of the impact on different economic sectors will vary depending on the result of the current UK-EU negotiation process. It is vital that GLLEP remains up-to-date as this process continues and is responsive to emerging agreements and potential different scenarios.

5 Appendices

Appendix 1: Summary of high-level analysis




		Size of employment and specialisation, and strategic importance in GLLEP	BREXIT EXPOSURE			POTENTIAL IMPACT IN GREATER LINCOLNSHIRE LEP ECONOMY
			Trade & regulations 	Workforce 	Funding & investment 	
Key sectors considered in detailed analysis	Food processing	Very large	High	High	Medium	<u>Very high</u>
	Manufacturing (excluding food)	Very large	High	High	Medium	<u>Very high</u>
	Ports and logistics	Very large	High	High	Lower	High
	Visitor economy	Large	Lower	High	Lower	Medium
Other sectors considered in high-level analysis	Health and social care	Large	Lower	High	Lower	Medium
	Agriculture	Very large	High	High	Medium	<u>Very high</u>
	Offshore wind (low carbon)	Large	Lower	Medium	Medium	Medium
	Life sciences and medical research (including pharma)	Medium	Medium	High	High	Lower
	Construction	Very large	Medium	High	Medium	High

Table 3 – High-level assessment of Brexit exposure in GLLEP’s key economic sectors

Appendix 2: Location Quotient (LQ) tables for key sectors

Food processing

Top sub-sectors (SIC-5) in food processing	No. jobs (2016)	LQ (2016)	Job change (2011-16)
Manufacture of prepared meals and dishes	4,250	10.41	1,000
Processing and preserving of fish, crustaceans and molluscs	4,000	18.02	1,250
Processing and preserving of poultry meat	3,750	12.18	250
Other processing and preserving of fruit and vegetables	3,500	10.86	1,000
Production of meat and poultry meat products	1,500	3.17	-375
Processing and preserving of meat	1,250	3.71	250
Manufacture of bread; manufacture of fresh pastry goods and cakes	1,125	1.03	425
Manufacture of other food products nec	1,000	2.12	200
Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	1,000	2.97	650
Processing and preserving of potatoes	950	7.37	0
Manufacture of prepared pet foods	425	4.95	175
Manufacture of condiments and seasonings	400	3.72	50
Other	470		-125
Total	23,620		4,750

Table 4 - Top sub-sectors (SIC 5) in food processing (Source: BRES, 2016)

Manufacturing (excluding food)

Top sub-sectors (SIC-5) in metals	No. jobs (2016)	LQ (2016)	Job change (2011-16)
Manufacture of basic iron and steel and of ferro-alloys	3500	11.37	-1000
Machining	1125	0.79	-375
Manufacture of metal structures and parts structures	700	0.90	-250
Manufacture of doors and windows of metal	475	1.79	125
Manufacture of other fabricated metal products nec	450	1.07	-50

Manufacture of light metal packaging	250	3.17	100
Other – manufacture	1095		-320
Total	7,595		-1770

Table 5 - Top sub-sectors (SIC 5) in metals (Source: BRES, 2016)

Top sub-sectors (SIC-5) in machinery	No. jobs (2016)	LQ (2016)	Job change (2011-16)
Repair of machinery	1625	2.95	0
Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	700	3.26	670
Manufacture of agricultural and forestry machinery	475	5.53	25
Manufacture of other general-purpose machinery nec	450	1.46	100
Manufacture of machinery for food, beverage and tobacco processing	425	5.40	125
Manufacture of bearings, gears and driving elements	300	2.62	-50
Other – machinery	1705		-95
Total	5,680		775

Table 6 - Top sub-sectors (SIC 5) in machinery (Source: BRES, 2016)

Top sub-sectors (SIC-5) in wood and furniture	No. jobs (2016)	LQ (2016)	Job change (2011-16)
Manufacture of kitchen furniture	1500	5.66	1400
Manufacture of other builders' carpentry and joinery	1375	1.86	125
Manufacture of other furniture	1000	1.64	150
Other - wood and furniture	735		180
Total	4,610		1,855

Table 7 - Top sub-sectors (SIC 5) in wood and furniture (Source: BRES, 2016)

Top sub-sectors (SIC-5) in plastics & rubber products	No. jobs (2016)	LQ (2016)	Job change (2011-16)
Manufacture of plastic plates, sheets, tubes, profiles	1000	2.97	250
Manufacture of builders ware of plastic	900	1.61	50

Manufacture of plastic packing goods	750	2.49	0
Other - plastics and rubber products	1625		200
Total	4,275		500

Table 8 - Top sub-sectors (SIC 5) in plastics and rubber products (Source: BRES, 2016)

Ports and logistics

Top sub-sectors (SIC-5) in ports and logistics	No. jobs (2016)	LQ (2016)	Job change (2011-16)
Freight transport by road	9,500	2.50	1,000
Operation of warehousing and storage facilities for land transport	3,750	0.90	250
Other transportation support activities	2,250	2.36	0
Service activities incidental to water transportation	1,625	4.63	375
Other service activities incidental to land transportation, nec	1,125	1.05	675
Unlicensed Carriers	500	0.43	-625
Cargo handling for water transport activities (sea and coastal)	220	5.59	80
Other	620		-130
Total	19,590		1,625

Table 9 - Top sub-sectors (SIC 5) in ports and logistics (Source: BRES, 2016)

Visitor economy

Top sub-sectors (SIC-5) in visitor economy	No. jobs (2016)	LQ (2016)	Job change (2011-16)
Public houses and bars	8000	1.24	3000
Hotels and similar accommodation	6500	1.18	3000
Licensed restaurants	5500	0.84	500
Unlicensed restaurants and cafes	4750	1.07	1250
Take away food shops and mobile food stands	3250	1.13	0
Camping grounds, RV parks and trailer parks	2750	5.12	1375
Operation of sports facilities	2000	0.86	-500
Holiday centres and villages	1750	4.70	250
Licensed clubs	1500	1.20	250

Gambling and betting activities	1500	1.13	125
Other food service activities	1375	0.75	475
Other passenger land transport nec	1000	1.01	-500
Event catering activities	950	0.48	-925
Other amusement and recreation activities	850	1.16	100
Taxi operation	600	0.86	0
Travel agency activities	600	0.70	150
Other - visitor economy	3545		240
Total	46,420		8,790

Table 10 - Top sub-sectors (SIC 5) in visitor economy (Source: BRES, 2016)



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