

Life Sciences & Bio-Economy Sector Data Pack

Version Final

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Introduction to the Sector Data Pack

The role of the Sector Data Pack is to bring together the latest socio-economic and labour market data and present both an up-to-date, and future view, of the sector and any underlying issues within the area that could impact upon it. Information and feedback collected from stakeholder consultation (through workshops, meetings, and survey) is also presented and summarised (where available and applicable).

The Data Pack sits below the Sector Skills Plan, with the key findings from the data analysis helping to inform the priorities developed in the plan. In most instances data has been analysed and presented down to local authority level. In some instances, and even where local authority data is available, it has not been presented in the data pack due to issues of unreliability and small sample sizes. This is particularly the case with data from the Annual Population Survey and the Annual Survey of Hours and Earnings.

Throughout the Data Pack findings are also presented for the Local Enterprise Partnership (LEP) areas of Greater Cambridge and Greater Peterborough (GCGP), Hertfordshire, and South East LEP (SELEP). These comparator areas were agreed in consultation with the AgriFood Tech sector group and New Anglia LEP officers.

Introduction to and Definition of the Life Sciences & Bio-Economy Sector

The official Life Sciences definition as set out in the UK Life Sciences Strategy[[1]](#footnote-1) is seen as being too narrow for New Anglia as it only focuses on human health and does not include many other industries which use biology and related life sciences. The New Anglia the life sciences sector needs to be seen as part of the wider bio-economy so it encompasses all the major areas using biological sciences locally.

The science economy in New Anglia is a diverse sector, from long established sub-sectors e.g. human health with steady but moderate growth as well as newer, smaller, but faster growing sub-sectors such as industrial and synthetic biotechnology. This is the approach taken by the East of England Science and Innovation Audit, a Bio-economy review for BIS in 2016, the EU’s Bio-economy programmes and at NRP.

In the UK the life sciences sector is dominated by human health and, whilst New Anglia has a presence in this market, the critical mass of UK investment in health research is in London and the Midlands, with only relatively few companies in New Anglia. Norfolk and Suffolk do though have one significant advantage in human health research, based on its stable and relatively elderly population. This makes it ideally suited to the long term study of conditions normally associated with ageing and the linked rapid growth markets.

New Anglia has nationally/internationally important critical mass in the wider bio-economy, the sector which uses biology (and other sciences) to develop innovations in dietary health, agriculture, marine sciences and equine health. There are exciting new developments from the life sciences research base in areas such as soil health and organisms which affect agriculture as well as the environment and human health.

The New Anglia Life Sciences and Bio-economy sector is therefore defined as:

* Human life sciences including pharmaceuticals, medical devices and technology;
* Agritech, food and the microbiome (gut, soil and rhizosphere);
* Bioinformatics;
* Equine cluster centred on Newmarket;
* Marine Sciences centred on CEFAS;
* Industrial bio-economy including bio-energy.

The Standard Industrial Classification codes that have been used to capture this activity have been drawn from the Association of the British Pharmaceutical Industry report ‘The economic contribution of the UK Life Sciences industry’ (March 2017), prepared by PricewaterhouseCoopers LLP, and are presented in detail in appendix 1.

Key Findings from the Data Analysis:

* The Life Sciences & Bio-Economy sector in New Anglia was worth approximately £1.6bn in 2015
* This £1.6bn equates to 4.5 per cent of New Anglia’s economy total value, slightly less than LEP comparators and nationally
* 25,100 people were employed in the sector in 2015, nearly 4 per cent of the total workforce, which again is slightly below LEP comparator areas and nationally
* There are currently approximately 4,055 Life Sciences & Bio-Economy sector businesses in New Anglia, making up nearly 6 per cent of all businesses
* Growth in employment and business numbers however has been strong locally, with rates above those seen across the New Anglia economy as a whole
* New Anglia’s Life Sciences sector is particularly geared towards the sub sector of Medical Technology Manufacture when compared to other areas
* However, it is employment in Life Sciences Research that has experienced the strongest growth between 2010 and 2015, with employment in that sub sector standing at 11,700 in 2015
* New Anglia’s Life Sciences & Bio-Economy sector location quotient (0.9) is currently below that of its main comparator areas, but it has increased since 2010 (0.7)
* Increases in employment in the sector in New Anglia have been driven by growth in both full-time and part-time employment
* Apprenticeship numbers are dominated by Health & Social Care with very little in the way of apprenticeships that better fit the sector definition (such as Laboratory and Science Technicians)

Life Sciences & Bio-Economy Sector in New Anglia

Life Science & Bio-Economy sector’s contribution to the local economy



**4,055**

**£1.6bn**

**25,100**

**Sources:** Business Register and Employment Survey, UK Business Counts (both Office for National Statistics); GVA calculation based on GVA per employee findings from the PwC report ‘The economic contribution of the UK Life Sciences industry’ (March 2017) – see appendix 2 for full details



**Sources:** Business Register and Employment Survey, UK Business Counts; all Office for National Statistics

Life Science & Bio-Tech sector’s contribution to growth in the local economy (2010=100)



**Source:** Calculation based on PwC report findings of GVA per employee

Life Sciences sector GVA (£m) across comparator areas, 2015



**Source:** Calculation based on PwC report findings of GVA per employee

Proportion of total GVA produced by Life Sciences sector across comparator areas, 2015



**Source:** Business Register and Employment Survey, Office for National Statistics

Employment in the Life Sciences sector across comparator areas, 2015



Proportion of employment provided by the Life Sciences sector across comparator areas, 2015

**Source:** Business Register and Employment Survey, Office for National Statistics



**Source:** Business Register and Employment Survey, Office for National Statistics

Employment in the Life Sciences sector across New Anglia, 2015



Change in Life Sciences sector employment across comparator areas, 2010 - 2015

**Source:** Business Register and Employment Survey, Office for National Statistics



**Source:** Business Register and Employment Survey, Office for National Statistics

Change in Life Sciences sector employment across New Anglia, 2010 - 2015



Split in Life Sciences sector employment by component across comparator areas, 2015

**Source:** Business Register and Employment Survey, Office for National Statistics

**Source:** Business Register and Employment Survey, Office for National Statistics

Split in Life Sciences sector employment by component across New Anglia, 2015



**Source:** Business Register and Employment Survey, Office for National Statistics

Change in Life Sciences sector employment by component, New Anglia

Change in Life Sciences sector employment by component across comparator areas, 2010 - 2015

**Source:** Business Register and Employment Survey, Office for National Statistics

Top 5 Life Sciences sub sectors, 2015

**Source:** Business Register and Employment Survey, Office for National Statistics



**Source:** Business Register and Employment Survey, Office for National Statistics

Top growth Life Sciences sub sectors with 100 employees or more



**Source:** Business Register and Employment Survey, Office for National Statistics

Life Science sector location quotients across comparator areas, 2015

Location quotients (LQs) are a useful way of showing a sectors importance to the local economy relative to the national picture. The analysis presented here uses employment with an LQ above 1 showing a higher concentration than nationally, and an LQ of below than 1 a lower concentration.

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**Source:** Business Register and Employment Survey, Office for National Statistics

Life Sciences sector location quotients across New Anglia, 2015



**Source:** Business Register and Employment Survey 2015, Office for National Statistics

Life Science sub sectors with location quotients (LQs) above 1



Life Sciences sector employment by full-time / part-time split across comparator areas, 2015

**Source:** Business Register and Employment Survey, Office for National Statistics

Life Sciences sector employment by full-time / part-time split across New Anglia, 2015



**Source:** Business Register and Employment Survey, Office for National Statistics



**Source:** Business Register and Employment Survey, Office for National Statistics

Change in Life Sciences sector full-time and part-time employment across comparator areas, 2010-2015

Change in Life Sciences sector full-time and part-time employment across New Anglia, 2010-2015

**Source:** Business Register and Employment Survey, Office for National Statistics

Self Employment in the Life Sciences & Bio-Economy Sector

Awaiting content from New Anglia LEP

Life Science sector business numbers across comparator areas, 2016



New Anglia

Norfolk

Suffolk

GCGP LEP

Hertfordshire LEP

South East LEP

East of England

England

**Number of Business Units per 10,000 Population**

**Number of Business Units**

**Source:** UK Business Counts, and Sub-national Population Estimates, Office for National Statistics



Life Science sector business unit numbers across New Anglia, 2016

**Source:** UK Business Counts, Office for National Statistics



No. of employees

**Source:** UK Business Counts, Office for National Statistics

Life Science sector business numbers by size across New Anglia, 2016

Life Science sector business numbers by size across comparator areas, 2016

**Source:** UK Business Counts, Office for National Statistics

Change in Life Science business units across comparator areas, 2010 - 2016



Change in Life Science business units across New Anglia, 2010 - 2016

**Sources:** UK Business Counts, Office for National Statistics

Life Science sector wages (selected occupations) – Median gross annual pay all employees (UK)



(-15%)

(12%)

*Figures in brackets denote percentage change between 2014 and 2016*

(5%)

(2%)

(1%)

(0%)

(1%)

**Source:** Annual Survey of Hours and Earnings, Office for National Statistics



Life Science sector wages (selected occupations) – Median gross annual pay full time employees (UK)

(-16%)

(8%)

(-3%)

(-5%)

(-1%)

(4%)

(1%)

*Figures in brackets denote percentage change between 2014 and 2016*

**Source:** Annual Survey of Hours and Earnings, Office for National Statistics

Latest data shows that the shift towards higher level qualifications in New Anglia has continued

Life Sciences & Bio-Economy Sectors Apprenticeships

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**Source:** Skills Funding Agency Data Cube

Life Sciences sector vacancies across New Anglia, Jan 2012 – Dec 2016



According to the Labour Insight Jobs tool, then there were 1,295 postings for the sector in New Anglia between Jan. 1, 2012 and Dec. 31, 2016. A further 228 postings had the potential to be within the sector but a final judgement could not be made on these due to their unspecified or unclassified nature.

The definition for the Life Sciences sector in this exercise is slightly different to that we have defined using SIC codes. The definition used captures the following industry and sectors: ‘Scientific research and development’, ‘Veterinary activities’, ‘Manufacture of basic pharmaceutical products and preparations’, ‘Manufacture of medical and dental instruments and supplies’, ‘Manufacture of irradiation, electromedical and electrotherapeutic equipment’, ‘Manufacture of optical instruments and photographic equipment’, and ‘Wholesale of pharmaceutical goods’.

*Please note that some caution needs to be applied to this data as results may reflect the way different sectors recruit rather than real differences in the number of jobs.*

**Source:** Labour Insight Jobs, Burning Glass Technologies



**Source:** Labour Insight Jobs, Burning Glass Technologies

Top Life Sciences Sector Employers across New Anglia, Jan 2012 – Dec 2016



**Source:** Labour Insight Jobs, Burning Glass Technologies

Life Sciences sector vacancies by occupation, Jan 2012 – Dec 2016

**Source:** Labour Insight Jobs, Burning Glass Technologies

Life Sciences sector vacancies by job title, Jan 2012 – Dec 2016

**Source:** Labour Insight Jobs, Burning Glass Technologies

Life Sciences sector vacancies by qualification level required, Jan 2012 – Dec 2016

**Source:** Labour Insight Jobs, Burning Glass Technologies

Life Sciences sector vacancies by skills required, Jan 2012 – Dec 2016

Appendices

**Appendix 1 – Life Sciences & Bio-Economy sector definition (2007 SIC codes)**

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**Appendix 2 – Estimates for GVA per employee by Life Sciences & Bio-Economy sub sector**

**GVA per employee**

Life Sciences Research £60,000

Pharmaceutical development and manufacture £81,000

Medical Technology manufacture £65,000

These values were calculated for each of the three sub sectors and used to estimate the economic value and employment for small companies where financial information was not able to be directly collected. The values are based on the median figures obtained in order to minimise the impact of outliers. These results are based on data for a sample of 107 smaller firms out of the population of around 1,400.

**Source:** Association of the British Pharmaceutical Industry report ‘The economic contribution of the UK Life Sciences industry’ (March 2017), prepared by PricewaterhouseCoopers LLP

1. BIS (2011), Strategy for UK Life Sciences [↑](#footnote-ref-1)