London's Low Carbon Market Snapshot

Time Series for 2007/08 to 2017/18

Detailed Update for 2015/16 to 2017/18

London's Low Carbon and Environmental Goods and Services (LCEGS)

Updated Report June 2019

Disclaimer

kMatrix

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Executive Summary

The Low Carbon and Environmental Goods and Services sector has been measured from 2007/08 to 2017/18 for both the UK and London. This time series provides details on total sales, number of companies and number of employees, with respective growth rates.

Sales and growth
The Low Carbon and Environmental Goods and Services sector has grown year on year from 2007/08 to 2017/18. In London, total sales in the sector were worth £20.9bn in 2007/08 and reached £39.7bn in 2017/18. The UK had total sales of £102.6bn in 2007/08 and £184/7bn in 2017/18.

The sector in London has grown by 90% between 2007/08 and 2017/18 with annual growth rates increasing from 5.1% in 2008/9 to 10.2% in 2017/18. This is greater than the overall UK growth of 80% during the same period with annual growth rates increasing from 4.5% in 2008/09 to 7.4% in 2017/18. The accelerated growth in London is due to the Carbon Finance sub-sector, when this is removed from the datasets the annual growth rates for London are lower and generally in-line with those of the UK.

In 2015/16 sales in London's Low Carbon and Environmental Goods and Services was worth £32.98bn and by 2017/18 they had increased to £39.7bn, a growth rate of 20% in the two years since March 2016.

Companies and Growth
The number of companies in London's Low Carbon and Environmental Goods and Services sector in 2007/08 was 9,977 and rose to 13,906 in 2017/18. The number of companies decreased in 2009/10 to 9,213 and remained lower than the 2007/08 figure until 2013/14. This reduction in the number of companies is attributed to the gradual movement of head offices out of London.

The number of companies in the UK's Low Carbon and Environmental Goods and Services sector grew year on year, from 41,496 in 2008/09, to 72,478 in 2017/18.

The number of companies in London grew by 39% between 2007/08 and 2017/18 and in the UK the number of companies grew by 75% over this period. The annual growth rate in the number of companies in London after 2013/14 has been significantly higher than for the UK as a whole.

In 2015/16 there were 11,733 companies working in London's Low Carbon and Environmental Goods and Services and by 2017/18 this had increased to 13,906, a growth rate of over 18% in the two years since March 2016.

Employment and Growth
The number of employees in London's Low Carbon and Environmental Goods and Services sector grew from 155,953 in 20007/08 to 246,073 in 2017/18.

The number of employees in the UK's Low Carbon and Environmental Goods and Services sector grew year on year from 707,867 in 2008/09 to 1,257,182 in 2017/18.

The number of employees in London grew by 58% between 2007/08 and 2017/18 and in the UK the number of employees grew by 78% over this period. The growth rate in the number

of employees in London was slower than for the UK as a whole between 2007/08 and 2011/12 but it was consistently stronger in subsequent years through to 2017/18.

In 2015/16 there were 207,049 people working in London's Low Carbon and Environmental Goods and Services and by 2017/18 this had increased to 246,073, a growth rate of over 18% in the two years since March 2016.

LCEGS sub-sectors - Sales

The Low Carbon and Environmental Goods and Services sector is made up of three sub-sectors: Low Carbon, Renewable Energy and Environmental. Each sub-sector grew in sales throughout the time series between 2007/08 to 2017/18:

- The Low Carbon sub-sector grew by a total of 108% in London from £10.7bn to £22.3bn between 2007/08 and 2017/18 and by 88% in the UK from £49.3bn to £92.8bn
- The Renewable Energy sub-sector also enjoyed high growth, growing by a total of 93% in London from £6.4bn to £12.4bn between 2007/8 and 2017/18 and by 100% in the UK from £30.8bn to £61.6bn
- The Environmental sub-sector is the most mature sector and saw the slowest growth, with a more modest overall growth rate of 33% in London from £3.8bn to £5.0bn between 2007/8 and 2017/18 and a similar overall growth rate of 35% in the UK from £22.4bn to £30.3bn

LCEGS sub-sectors - Companies

The Low Carbon and Environmental Goods and Services sector varied in the growth of the number of companies in the different sub-subsectors and between the UK and London between 2007/08 and 2017/18.

- In the Low Carbon sub-sector the number of companies grew by a total of 44% in London from 5,275 to 7,621 between 2007/08 and 2017/18 and by 85% in the UK from 19,942 to 36,883
- In the Renewable Energy sub-sector the number of companies grew by a total of 42% in London from 2,903 to 4,125 between 2007/08 and 2017/18 and by 91% in the UK from 11,828 to 22,575
- In the Environmental sub-sector the number of companies saw the slowest growth rate, with a modest overall growth rate of 20% in London from 1,799 to 2,160 between 2007/08 and 2017/18 and 34% in the UK from 9,726 to 13,020

A dip in the number of companies in London between 2009/10 and 2011/12 was due to a 13% reduction in the number of companies in the Low Carbon sub-sector and a 4% reduction in companies in the Renewable Energy sub-sector. The UK saw the opposite pattern, with a 13% increase in the Low Carbon sub-sector and a 5% increase in Renewable Energy sub-sector. These changes are attributed to the movement of head offices out of London and into the rest of the UK.

LCEGS sub-sectors - Employees

The Low Carbon and Environmental Goods and Services sector varied in the growth of the number of companies in the different sub-subsectors and between the UK and London between 2007/08 and 2017/18.

- The number of employees in the Low Carbon sub-sector grew by 74% in London from 71,661 to 124,443 between 2007/08 and 2017/18 and 88% in the UK from 328,992 to 619,786.

- The number of employees in the Renewable Energy sub-sector grew by 57% in London from 51,745 to 81,035 between 2007/08 and 2017/18 and by 95% in the UK from 205,388 to 401,423.
- The number of employees in the Environmental sub-sector again had the slowest growth rate, with and overall growth rate of 25% in London from 32,547 to 40,595 between 2007/08 and 2017/18 and 36% in the UK from 173,488 to 235,974.

London and the UK had similar growth rates between 2007/08 and 2012/13, apart from in 2009/10 when growth in the UK was much higher, as this was due to the relocation of some head office operations out of London into the rest of the UK. But from 2013/14 London's growth in employment was consistently higher than that of the UK.

London's sub-sector strengths – value of sales

The five largest sub-sectors in the Low Carbon and Environmental Goods and Services sector by sales in 2017/18 account for 69% of the London total sales and are made up of:

- Carbon Finance (£12.77bn) - this includes Carbon finance trading houses and consultancies
- Wind (£4.14bn) – this includes control systems development and manufacture, drive train development, manufacture and systems integration and consulting houses
- Geothermal (£4.06bn) - this includes head office functions, systems and design and international consultancy
- Building Technologies (£3.28bn) - this includes head office functions, building systems design and consultancy and building systems providers and installers
- Alternative Fuels (£3.07bn) - this includes R&D functions, alternative fuel providers and process implementation accounting

The next six largest sub-sectors by sales account for a further 26% of London's total sales and are made up of:

- Photovoltaics (£2.33bn) - this includes head office functions and providers and installers
- Alternative Fuel Vehicle (£1.88bn) - this includes head office functions, prototype applications and vehicle sales
- Water Supply and Waste Water Treatment (£1.74bn) - this includes systems implementation, maintenance and development
- Biomass (£1.61bn) - this includes systems development and implementation and R&D
- Waste Management (£1.54bn) - this includes process development and new process implementation and consulting
- Recovery and Recycling (£1.22bn) – this includes waste collection, glass stock processing and paper feedstock processing

The Low Carbon and Environmental Goods and Services sector in London is slightly different to that in the rest of the UK due to the fact that the Carbon Finance sub-sector, the largest sub-sector in London, has over 97% of its activity based within London and much of that is in the City of London.

The Low Carbon and Environmental Goods and Services sector in London accounts for 21% of sales, 19% of companies and 19% of employees in the UK.

London's share of the UK's Low Carbon and Environmental Goods and Services market by sales varies between sub-sectors. From 97% of the Carbon Finance sub-sector, 26% of the

Photovoltaic sub-sector and 24% of the Geothermal sub-sector down to 9% of the Contaminated Land sub-sector.

London's Low Carbon and Environmental Goods and Services and the transition to a Low Carbon Circular Economy

The growth in these numbers shows that businesses are responding to the need to reduce their energy use, resource consumption and environmental impact and that this is creating market opportunities for business able to supply these types of goods and services.

The increases seen in London's Low Carbon and Environmental Goods and Services is contributing to economic growth and jobs in London whilst helping to address some of the environmental challenges we face in London and the UK.

Introduction to the Low Carbon and Environmental Goods and Services Sector and the London Time Series

The time series presented in this section of the report runs from 2007/08 to 2017/18 and represents the continuous monitoring of the Low Carbon and Environmental Goods and Services sector (LCEGS) that has been undertaken for the UK and London, using a definition and methodology that has remained the same throughout that period. This has allowed a multi-year dataset to be created that provides real insight into how the sector has developed since 2007/08.

The data used in this report is based upon the work and methodology used by kMatrix to provide datasets on the UK's LCEGS Sector for UK Government and that was reported annually by the Department for Business, Innovation and Skills (BIS) from 2008/09 to 2011/12. The sector has continued to be measured and reported by London providing data from 2007/08 to 2017/18, the latest dataset. The last three years of data, 2014/15 to 2017/18, have now been reported and are presented as a detailed update in Appendix 2 of this report.

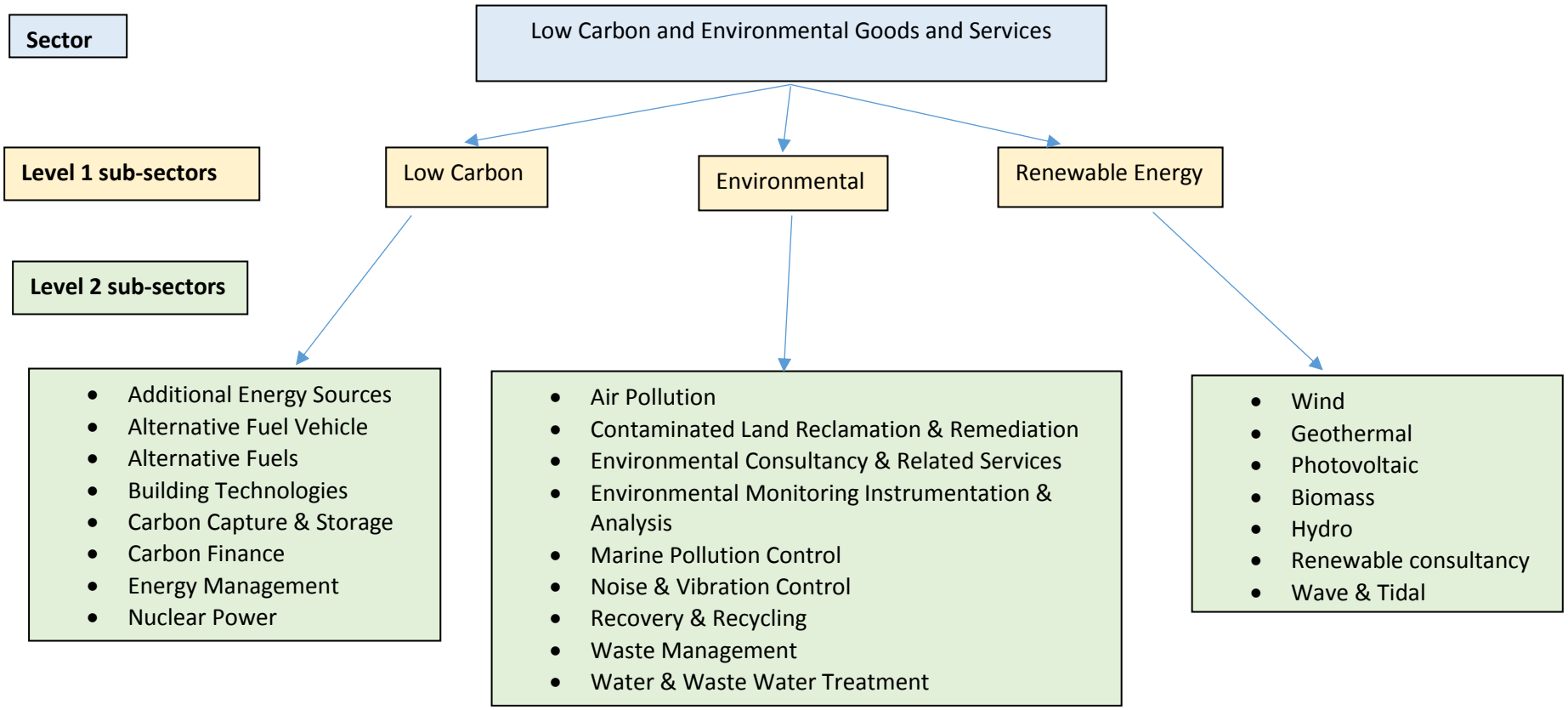
The LCEGS sector has been defined using 24 sub-sectors (or Level 2 markets) and these are grouped into three broad categories (or Level 1 markets) - Environmental, Renewable Energy and Low Carbon. The addition of the Renewable Energy and Low Carbon groupings illustrates the evolution of the current LCEGS sector definition from its original Environmental roots and reflects developments in the market as sectors across the economy evolve to address the environmental challenges that they and the world is facing.

The dataset measures the core activities of the sector along with those in the supply chain, without whom the LCEGS sector could not operate. For example, the Wind sector includes those companies which develop the systems integration software enabling the power generated though turbines to be integrated into the National Grid, but it also includes those companies installing and maintaining the system integration software itself. Another example would be the collection of household waste, where the collection, processing and recycling of the waste is included, along with those companies who design, manufacture and supply the waste collection equipment itself.

The time series provides 11 years of sales, companies and employment data and 10 years of growth rates for the LCEGS sector as a whole. The data is then broken down into three Level 1 sub-sectors (Low Carbon, Environmental and Renewable Energy) and then those three sub-sectors are split into further Level 2 sub-sectors to provide greater resolution and insights for analysing the data.

The kMatrix methodology is based around the production of a taxonomy, similar to that used for biological taxonomic ranking, with similar products and services being grouped together. As an illustration, the sector is LCEGS, which is then broken down into three Level 1 sub-

sectors, one of which is Renewable Energy, which is in turn broken down into seven Level 2 sub-sectors, one of which is Wind that is then broken down into a further three Level 3 sub-sectors and so on:



Although the taxonomy is reported and organised 'top down' as it goes from the sector to Level 1, to Level 2 etc, the data is gathered and organised from the 'bottom up'. The data is collected at the most finite disaggregation and then 'rolled up' to form the different levels. The

current LCEGS sector definition, used in this report, includes 2,800 product and service activities at level 5 that are derived from sector supply chain activities (componentry & assemblies) and value chain activities (R&D, Supply & Training).

A glossary of economic activities included for each sub-sector of LCEGS is included as Appendix 3, a brief explanation of the LCEGS methodology as Appendix 4 and then a high-level comparison of data and methodologies between the Office of National Statistics (ONS) Environmental Goods and Services sector and LCEGS is presented in Appendix 5.

Selected time series from 2007/08 to 2017/18 are presented in the main body of this report, followed by further time series data in Appendix 1 and the detailed 2015/16 to 2017/18 Low Carbon Market Snapshot report and datasets are provided in Appendix 2.

1. LCEGS – London and UK – 2007/08 to 2017/18

In this section of the report we provide a time series dataset from 2007/08 though to 2017/18 for sales, number of companies and number of employees for both London and the UK's overall Low Carbon and Environmental Goods and Services (LCEGS) sector. This highlights trends in the LCEGS sector at both a London and UK level over the time series and the data is presented in both graphical and selected tabular format.

Figure 1: LCEGS London - Total Sales (£m)

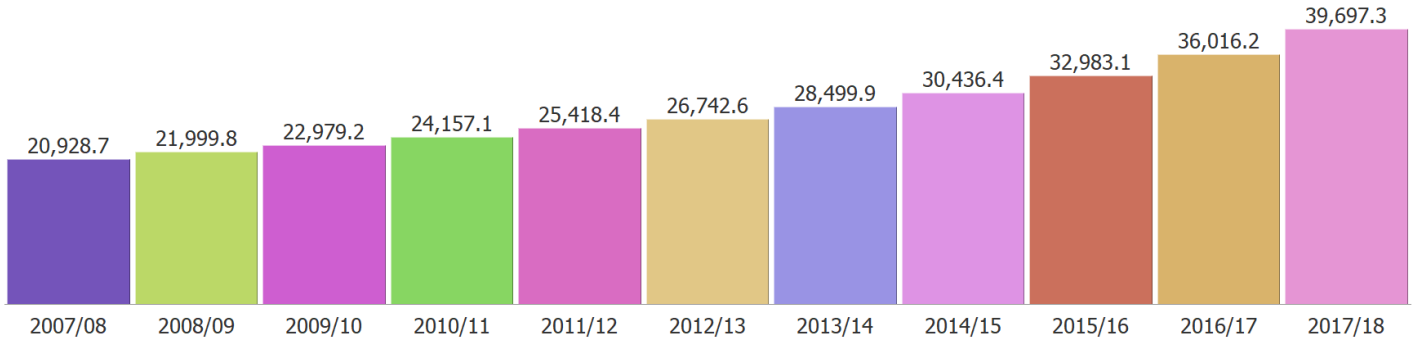
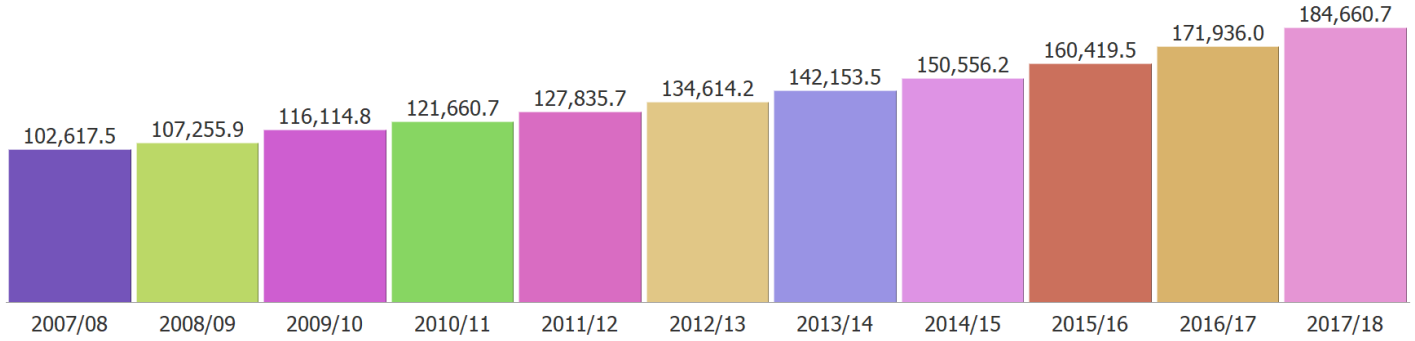


Figure 2: LCEGS UK - Total Sales (£m)



Figures 1 and 2 illustrates the year on year growth of sales for the LCEGS sector for both the UK and London, with the London market growing by 90% and the UK market growing by 80% between 2007/08 and 2017/18. If Carbon Finance is removed from the London figures, growth was 76% in London between 2007/08 and 2017/18.

Figure 3: LCEGS London - Total Number of Companies

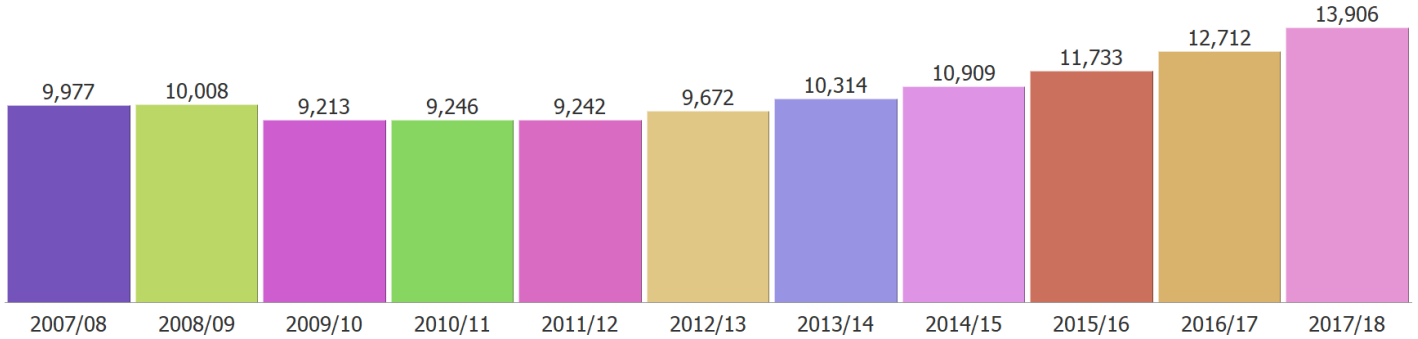
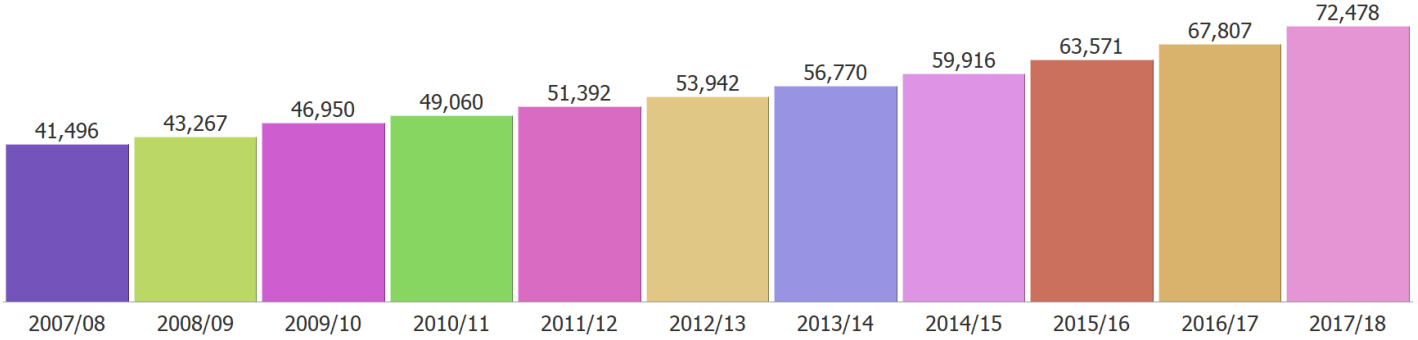


Figure 4: LCEGS UK - Total Number of Companies



Figures 3 and 4 illustrates the year on year growth in the number of companies in the LCEGS sector for the UK and generally for London too, apart from the dip in number of companies located in London in 2009/10. The number of companies in London grew by 39% and in the UK by 75% between 2007/08 and 2017/18. The reason for the dip in number of companies in London in 2009/10 and the difference in the overall growth rate of the number of companies in London compared to the UK is predominately due to the gradual movement of head offices out of London. In many cases the address of the head office of the company may remain the same but the operations themselves and in turn the

bulk of the business has been moved out of London due to the higher cost of operations in the city. An example of this trend can be seen in the financial sector, where many companies are relocating their operations to Swindon. Whilst the financial sector has seen head offices move away from London, the Carbon Finance sub-sector is still generally located within in the city.

Figure 5: LCEGS London - Total Number of Employees

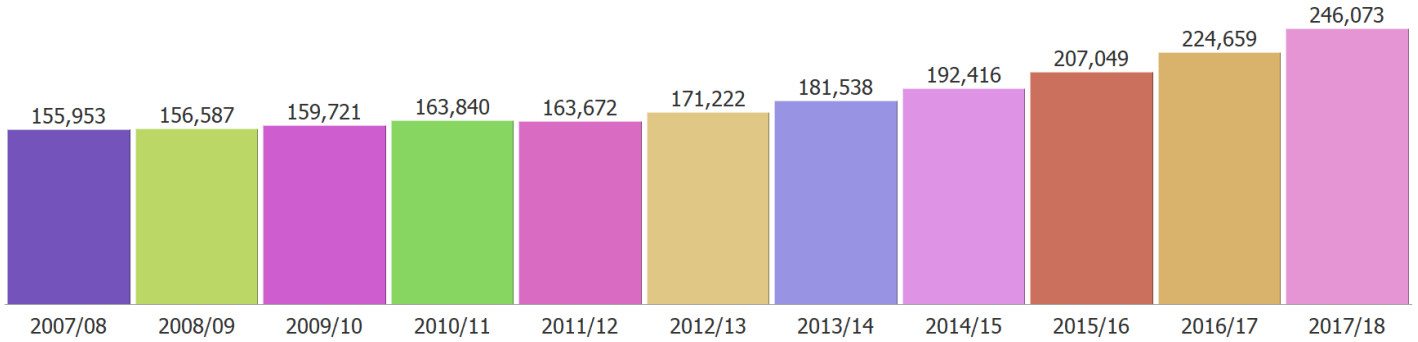
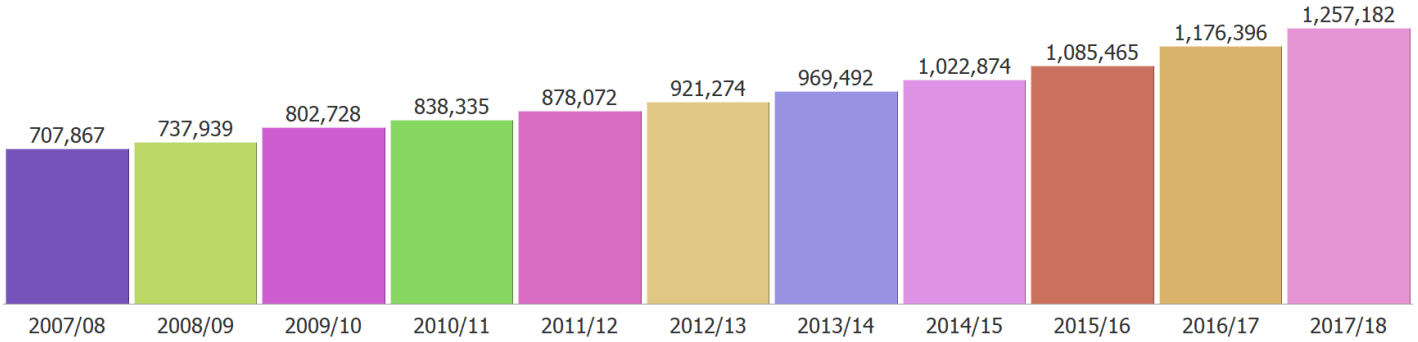


Figure 6: LCEGS UK - Total Number of Employees



Figures 5 and 6 illustrates the year on year growth in the number of employees within the LCEGS sector for both the UK and London. The number of employees in the London market growing by 58% and the UK market growing by 78% between 2007/08 and 2017/18. The UK saw a consistent increase in the number of employees year on year, however London saw a similar and slower increase in the number of employees that was also attributed to the movement of head offices out of London.

Table 1: 2017/18 UK and London - LCEGS Sales Summary Table

	UK Total		London		
Year	Total Sales (£m)	Sales Growth Rate	Total Sales (£m)	Sales Growth Rate	Sales as % of UK
2007/08	102,617.5	-	20,928.7	-	20%
2008/09	107,255.9	4.5%	21,999.8	5.1%	21%
2009/10	116,114.8	8.3%	22,979.2	4.5%	20%
2010/11	121,660.7	4.8%	24,157.1	5.1%	20%
2011/12	127,835.7	5.1%	25,418.4	5.2%	20%
2012/13	134,614.2	5.3%	26,742.6	5.2%	20%
2013/14	142,153.5	5.6%	28,499.9	6.6%	20%
2014/15	150,556.2	5.9%	30,436.4	6.8%	20%
2015/16	160,419.5	6.6%	32,983.1	8.4%	21%
2016/17	171,936.0	7.2%	36,016.2	9.2%	21%
2017/18	184,660.7	7.4%	39,697.3	10.2%	21%

Table 1 shows a time series summary of the sales figures for both the UK and London, the rate of growth in sales each year and the London sales as a percentage of the UK total.

Sales growth rates for London have generally been higher than those for the UK, with the exception of 2009/10 where the UK growth rate was 8.3% and London was 4.5%, there then followed three years of similar growth rates in London and the UK. From 2013/14 through to 2017/18, the growth rate for sales in London have been between 0.9%-2.8% stronger in London than the rest of the UK. Carbon Finance is London's largest Level 2 sub-sector and when this is removed from the London dataset, the growth rates are lower and generally in-line with the UK growth rates.

The London sales as a percentage of the UK figures have remained between 20-21% through the time series and again if Carbon Finance is removed from the dataset then this percentage drops to 16%, highlighting the importance of the Carbon Finance sub-sector to London.

Summary tables for the numbers of companies and employees in the LCEGS sector are provided in Appendix 1.

2. LCEGS Level 1 – London and UK

In this section of the report we provide a time series dataset from 2007/08 though to 2017/18 for sales, number of companies and number of employees for both London and the UK's LCEGS sector divided into its three Level 1 sub-sectors. This highlights trends in the LCEGS sector at both a London and UK level over the time series and the data is presented in both graphical and selected tabular format.

Figure 7: LCEGS Level 1 London - Total Sales (£m)

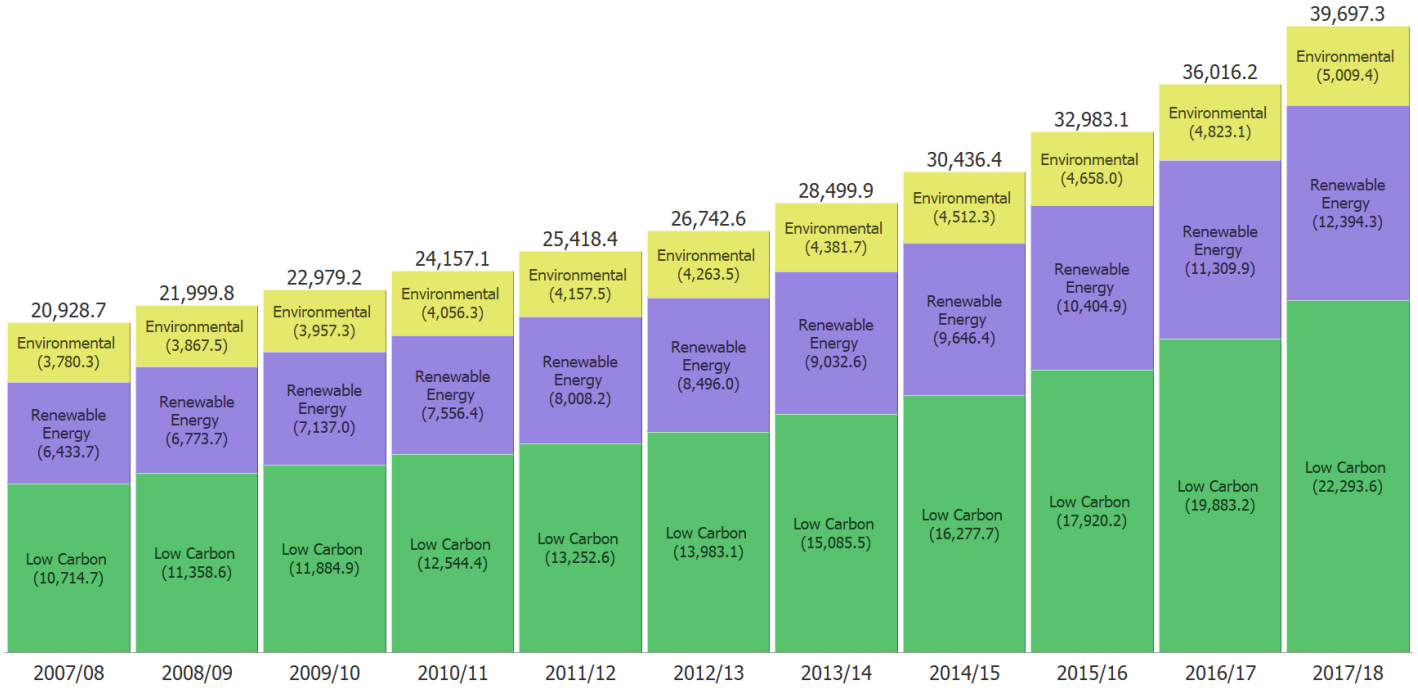
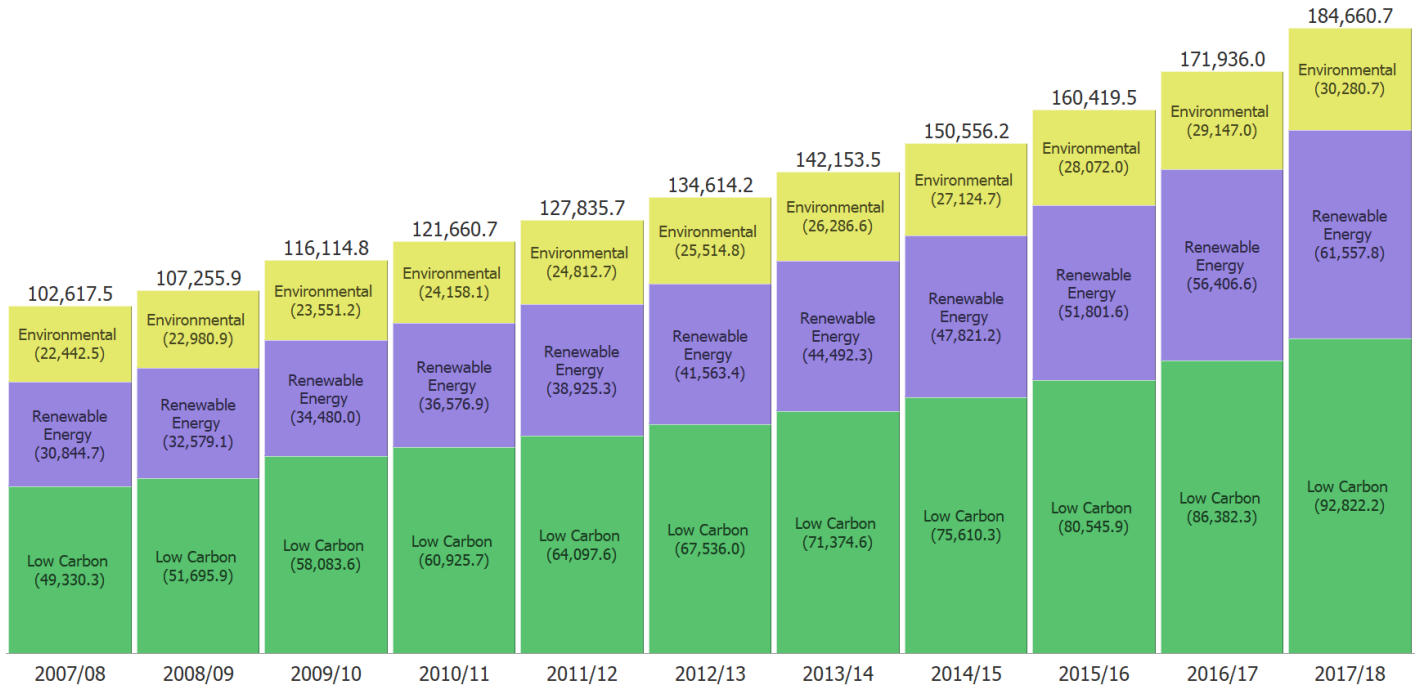


Figure 8: LCEGS Level 1 UK - Total Sales (£m)



Figures 7 and 8 illustrates the year on year growth of sales for the three Level 1 sub-sectors of LCEGS, for both the UK and London between 2007/8 and 2017/18.

- The Low Carbon sub-sector grew by 108% in London and 88% in the UK
- The Renewable Energy sub-sector was also high growth, growing by 93% in London and by 100% in the UK
- The Environmental sub-sector is the most mature sector and saw the slowest growth, with a modest 33% in London and 35% in the UK

Figure 9: LCEGS Level 1 London – Number of Companies

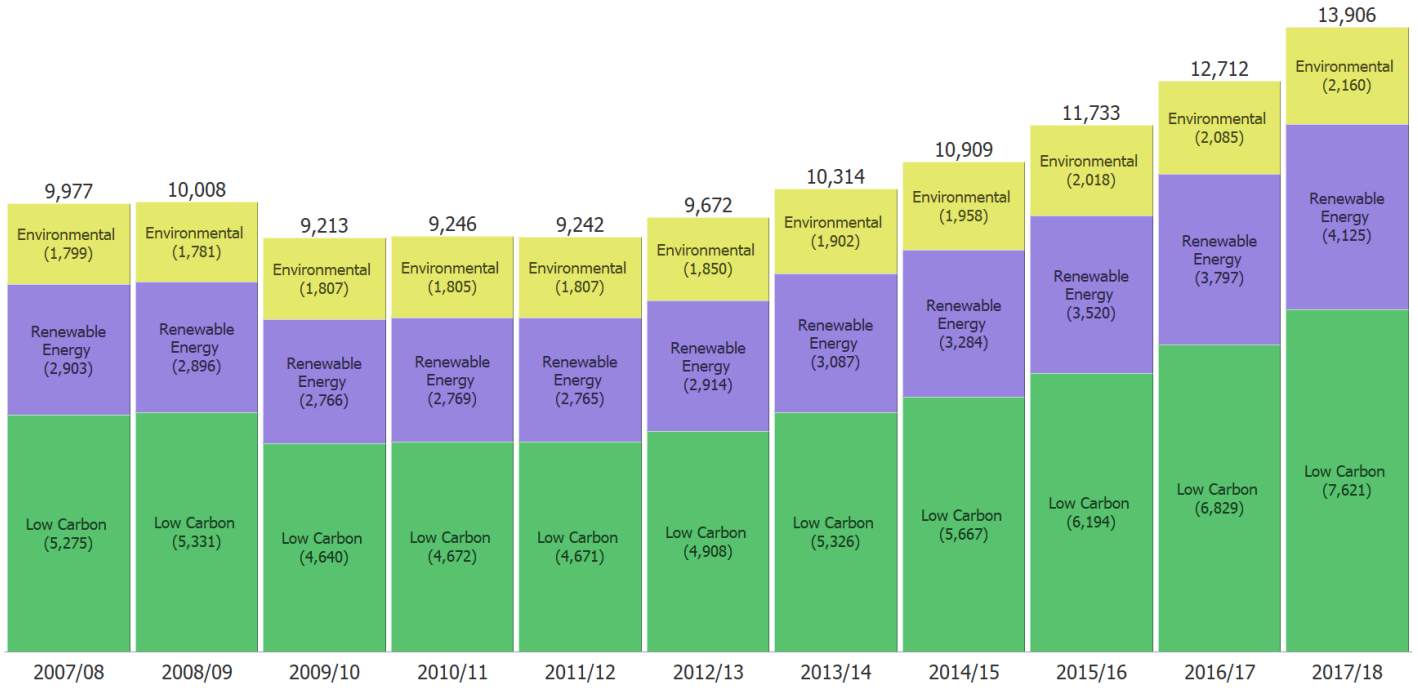
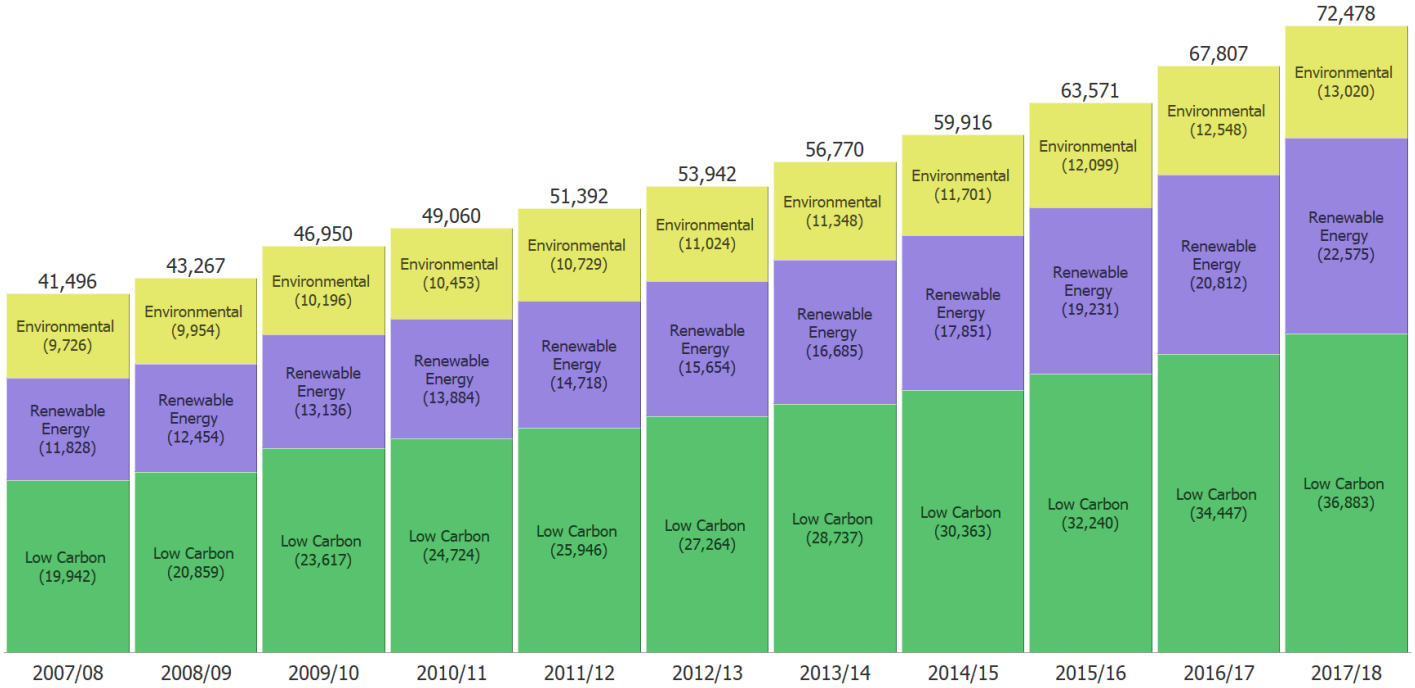


Figure 10: LCEGS Level 1 UK – Number of Companies



Figures 9 and 10 illustrates the year on year growth in the number of companies in the three Level 1 sub-sectors of LCEGS, for both the UK and London between 2007/8 and 2017/18.

- The number of companies in the Low Carbon sub-sector grew by 44% in London and 85% in the UK
- The number of companies in the Renewable Energy sub-sector grew by 42% in London and by 91% in the UK
- The number of companies in the Environmental sub-sector saw the slowest growth, with a modest 20% in London and 34% in the UK

The dip in the number of companies in London 2009/10 and 2011/12 was triggered by a 13% reduction in the number of companies in London in the Low Carbon sub-sector and 4% reduction in companies in the Renewable Energy sub-sector in 2009/10. This does not follow the trend of the UK as a whole, which saw a 13% increase in the number of companies in the Low Carbon sub-sector and a 5% increase in the number of companies in the Renewable Energy sub-sector for the same year. This suggests that more companies have moved operations out of London that are in the Low Carbon and Renewable Energy sub-sectors than for the Environmental sub-sector.

Figure 11: LCEGS Level 1 London – Number of Employees

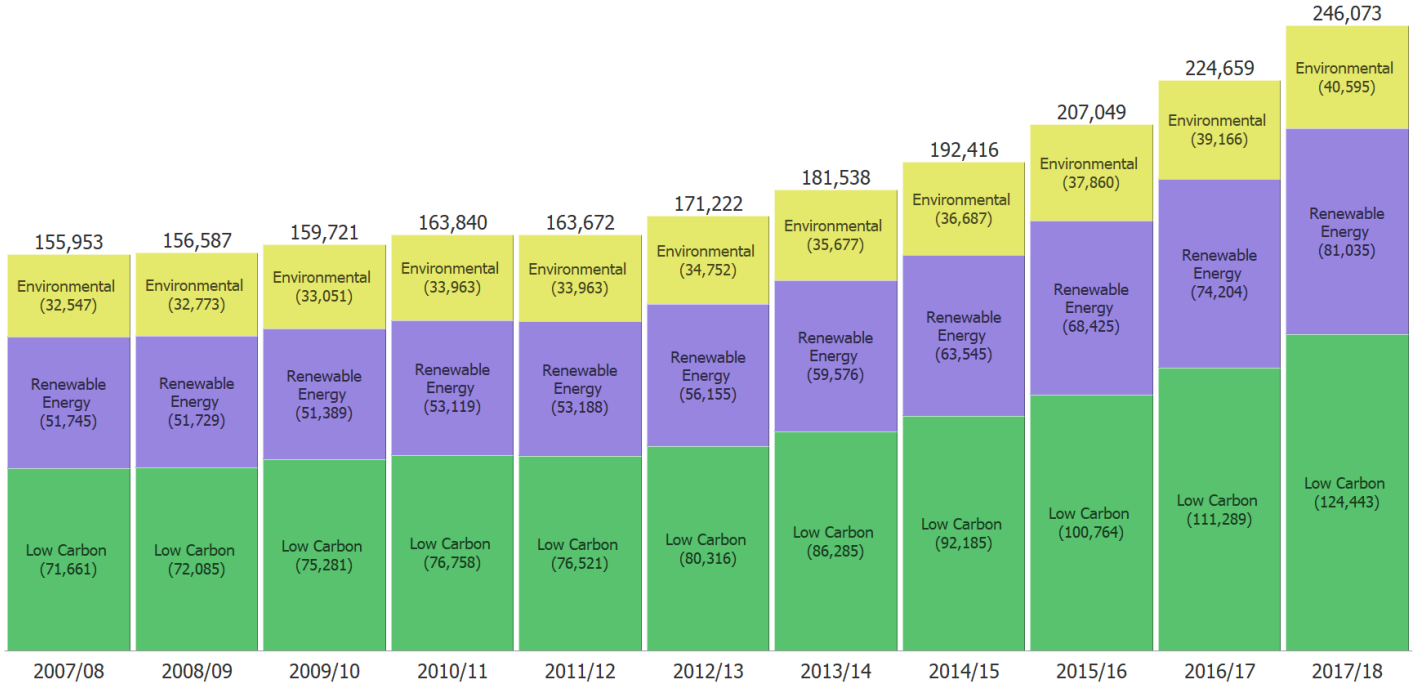
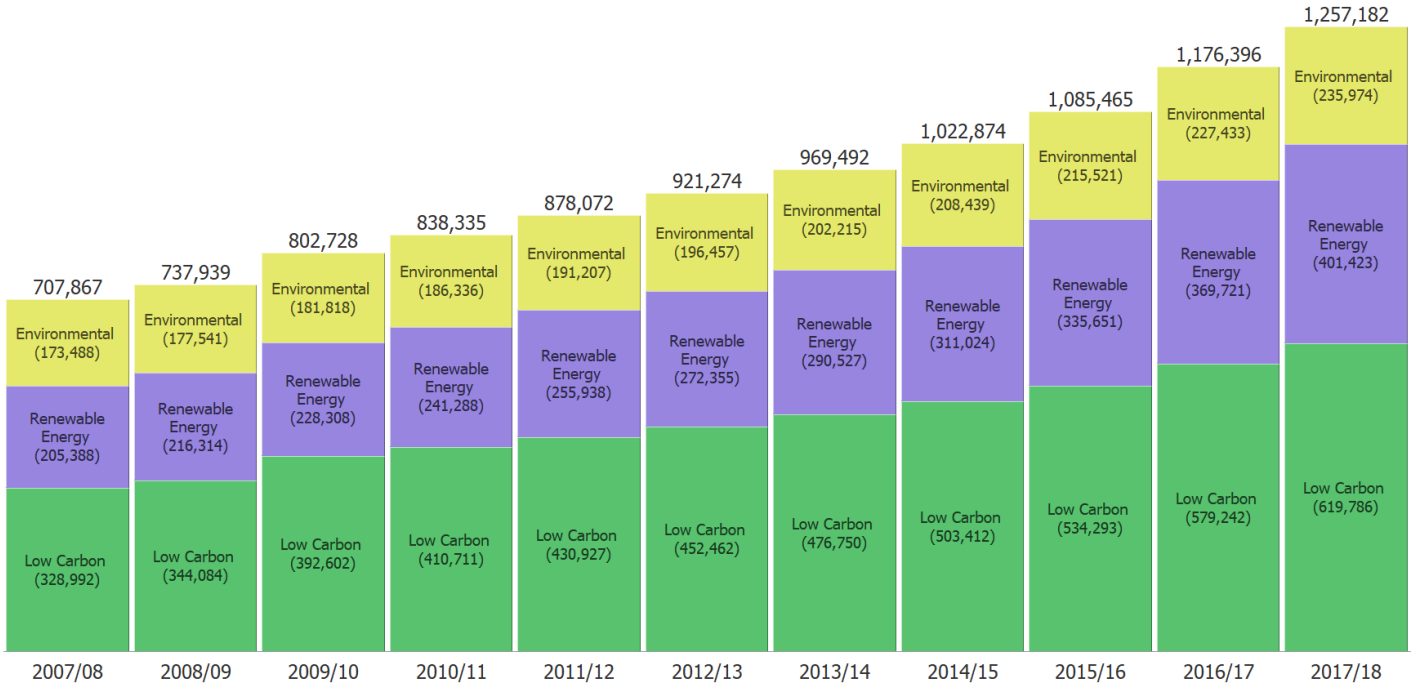


Figure 12: LCEGS Level 1 UK – Number of Employees



Figures 11 and 12 illustrate the year on year growth in the number of employees in the three level 1 sub-sectors of LCEGS, for both the UK and London between 2007/8 and 2017/18.

- The number of employees in the Low Carbon sub-sector grew by 74% in London and 88% in the UK
- The number of employees in the Renewable Energy sub-sector grew by 57% in London and by 95% in the UK
- The number of employees in the Environmental sub-sector again had the slowest growth, with 25% in London and 36% in the UK

The UK saw a consistent increase in the number of employees year on year, however London saw a less dramatic but similar pattern to the figures for the number of companies and is again attributed to the movement of head offices and staff out of London.

Table 2: 2017/18 UK and London - LCEGS Level 1 Sales Growth Summary Table

UK										
Level 1	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**
Environmental	2.4%	2.5%	2.6%	2.7%	2.8%	3.0%	3.2%	3.5%	3.8%	3.9%
Low Carbon	4.8%	12.4%	4.9%	5.2%	5.4%	5.7%	5.9%	6.5%	7.2%	7.5%
Renewable Energy	5.6%	5.8%	6.1%	6.4%	6.8%	7.0%	7.5%	8.3%	8.9%	9.1%
Total	**4.5%**	**8.3%**	**4.8%**	**5.1%**	**5.3%**	**5.6%**	**5.9%**	**6.6%**	**7.2%**	**7.4%**

London										
Level 1	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**
Environmental	2.3%	2.3%	2.5%	2.5%	2.5%	2.8%	3.0%	3.2%	3.5%	3.9%
Low Carbon	6.0%	4.6%	5.5%	5.6%	5.5%	7.9%	7.9%	10.1%	11.0%	12.1%
Renewable Energy	5.3%	5.4%	5.9%	6.0%	6.1%	6.3%	6.8%	7.9%	8.7%	9.6%
Total	**5.1%**	**4.5%**	**5.1%**	**5.2%**	**5.2%**	**6.6%**	**6.8%**	**8.4%**	**9.2%**	**10.2%**

Table 2 shows a time series summary of the sales growth rates for both the UK and London for each of the three Level 1 sub-sectors of LCEGS.

- The sales growth rates for the Environmental sub-sector have been slightly lower in London than the rest of the UK, but only by up to 0.3%. In this sub-sector the London market is operating almost in line with the country trend
- The sales growth rates for the Low Carbon sub-sector have been higher than the UK trend, with the exception of 2009/10, where the London growth rate was 4.6% compared with the UK growth rate of 12.4%. The rest of the time series shows London generally seeing stronger growth than the national average, with the final three years being significantly stronger
- The sales growth rates for the Renewable Energy sub-sector have been slightly slower, although within 1% of the national average

Summary tables for sales, the numbers of companies and employees in the LCEGS sector are provided in Appendix 1.

Appendix 1

Further Time Series Data

This appendix provides more time series and summary tables for LCEGS Levels 1 and 2.

1. LCEGS – London and UK

Summary tables for LCEGS for number of companies and number of employees and their associated growth rates from 2007/08 to 2017/18 are presented in this section.

Table 3: 2017/18 UK and London - LCEGS Number of Companies and Growth Summary Table

	UK Total		London		
Year	# Companies	Company Growth Rate	# Companies	Company Growth Rate	# Companies as % of UK
2007/08	41,496	-	9,977	-	24%
2008/09	43,267	4.3%	10,008	0.3%	23%
2009/10	46,950	8.5%	9,213	-7.9%	20%
2010/11	49,060	4.5%	9,246	0.4%	19%
2011/12	51,392	4.8%	9,242	0.0%	18%
2012/13	53,942	5.0%	9,672	4.7%	18%
2013/14	56,770	5.2%	10,314	6.6%	18%
2014/15	59,916	5.5%	10,909	5.8%	18%
2015/16	63,571	6.1%	11,733	7.6%	18%
2016/17	67,807	6.7%	12,712	8.3%	19%
2017/18	72,478	6.9%	13,906	9.4%	19%

Table 4: 2017/18 UK and London LCEGS - Number of Employees and Growth Summary Table

	UK Total		London		
Year	# Employees	Employee Growth Rate	# Employees	Employee Growth Rate	# Employees as % of UK
2007/08	707,867	-	155,953	-	22%
2008/09	737,939	4.2%	156,587	0.4%	21%
2009/10	802,728	8.8%	159,721	2.0%	20%
2010/11	838,335	4.4%	163,840	2.6%	20%
2011/12	878,072	4.7%	163,672	-0.1%	19%
2012/13	921,274	4.9%	171,222	4.6%	19%
2013/14	969,492	5.2%	181,538	6.0%	19%
2014/15	1,022,874	5.5%	192,416	6.0%	19%
2015/16	1,085,465	6.1%	207,049	7.6%	19%
2016/17	1,176,396	8.4%	224,659	8.5%	19%
2017/18	1,257,182	6.9%	246,073	9.5%	20%

2. LCEGS Level 1 – London and UK

Summary tables for LCEGS Level 1 for sales, number of companies and number of employees and their associated growth rates from 2007/08 to 2017/18 are presented in this section.

Table 5a: 2017/18 UK and London - LCEGS Level 1 Sales and Growth Summary Table

		UK Total		London		
Year	**Level 1**	**Total Sales (£m)**	**Growth Rate**	**Total Sales (£m)**	**Growth Rate**	**Sales as % of UK**
2007/08	Low Carbon	49,330.3	-	10,714.7	-	22%
	Environmental	22,442.5	-	3,780.3	-	17%
	Renewable Energy	30,844.7	-	6,433.7	-	21%
2008/09	Low Carbon	51,695.9	4.8%	11,358.6	6.0%	22%
	Environmental	22,980.9	2.4%	3,867.5	2.3%	17%
	Renewable Energy	32,579.1	5.6%	6,773.7	5.3%	21%
2009/10	Low Carbon	58,083.6	12.4%	11,884.9	4.6%	20%
	Environmental	23,551.2	2.5%	3,957.3	2.3%	17%
	Renewable Energy	34,480.0	5.8%	7,137.0	5.4%	21%
2010/11	Low Carbon	60,925.7	4.9%	12,544.4	5.5%	21%
	Environmental	24,158.1	2.6%	4,056.3	2.5%	17%
	Renewable Energy	36,576.9	6.1%	7,556.4	5.9%	21%
2011/12	Low Carbon	64,097.6	5.2%	13,252.6	5.6%	21%
	Environmental	24,812.7	2.7%	4,157.5	2.5%	17%
	Renewable Energy	38,925.3	6.4%	8,008.2	6.0%	21%

Table 5b: 2017/18 UK and London - LCEGS Level 1 Sales and Growth Summary Table

		UK Total		London		
Year	**Level 1**	**Total Sales (£m)**	**Growth Rate**	**Total Sales (£m)**	**Growth Rate**	**Sales as % of UK**
2012/13	Low Carbon	67,536.0	5.4%	13,983.1	5.5%	21%
	Environmental	25,514.8	2.8%	4,263.5	2.5%	17%
	Renewable Energy	41,563.4	6.8%	8,496.0	6.1%	20%
2013/14	Low Carbon	71,374.6	5.7%	15,085.5	7.9%	21%
	Environmental	26,286.6	3.0%	4,381.7	2.8%	17%
	Renewable Energy	44,492.3	7.0%	9,032.6	6.3%	20%
2014/15	Low Carbon	75,610.3	5.9%	16,277.7	7.9%	22%
	Environmental	27,124.7	3.2%	4,512.3	3.0%	17%
	Renewable Energy	47,821.2	7.5%	9,646.4	6.8%	20%
2015/16	Low Carbon	80,545.9	6.5%	17,920.2	10.1%	22%
	Environmental	28,072.0	3.5%	4,658.0	3.2%	17%
	Renewable Energy	51,801.6	8.3%	10,404.9	7.9%	20%
2016/17	Low Carbon	86,382.3	7.2%	19,883.2	11.0%	23%
	Environmental	29,147.0	3.8%	4,823.1	3.5%	17%
	Renewable Energy	56,406.6	8.9%	11,309.9	8.7%	20%
2017/18	Low Carbon	92,822.2	7.5%	22,293.6	12.1%	24%
	Environmental	30,280.7	3.9%	5,009.4	3.9%	17%
	Renewable Energy	61,557.8	9.1%	12,394.3	9.6%	20%

Table 6a: 2017/18 UK and London - LCEGS Level 1 Number of Companies and Growth Summary Table

		UK Total		London		
Year	**Level 1**	**# Companies**	**Growth Rate**	**# Companies**	**Growth Rate**	**Companies as % of UK**
2007/08	Low Carbon	19,942	-	5,275	-	26%
	Environmental	9,726	-	1,799	-	18%
	Renewable Energy	11,828	-	2,903	-	25%
2008/09	Low Carbon	20,859	4.6%	5,331	1.1%	26%
	Environmental	9,954	2.3%	1,781	-1.0%	18%
	Renewable Energy	12,454	5.3%	2,896	-0.2%	23%
2009/10	Low Carbon	23,617	13.2%	4,640	-13.0%	20%
	Environmental	10,196	2.4%	1,807	1.5%	18%
	Renewable Energy	13,136	5.5%	2,766	-4.5%	21%
2010/11	Low Carbon	24,724	4.7%	4,672	0.7%	19%
	Environmental	10,453	2.5%	1,805	-0.1%	17%
	Renewable Energy	13,884	5.7%	2,769	0.1%	20%
2011/12	Low Carbon	25,946	4.9%	4,671	0.0%	18%
	Environmental	10,729	2.6%	1,807	0.1%	17%
	Renewable Energy	14,718	6.0%	2,765	-0.1%	19%

Table 6b: 2017/18 UK and London - LCEGS Level 1 Number of Companies and Growth Summary Table

		UK Total		London		
Year	**Level 1**	**# Companies**	**Growth Rate**	**# Companies**	**Growth Rate**	**Companies as % of UK**
2012/13	Low Carbon	27,264	5.1%	4,908	5.1%	18%
	Environmental	11,024	2.8%	1,850	2.4%	17%
	Renewable Energy	15,654	6.4%	2,914	5.4%	19%
2013/14	Low Carbon	28,737	5.4%	5,326	8.5%	19%
	Environmental	11,348	2.9%	1,902	2.8%	17%
	Renewable Energy	16,685	6.6%	3,087	5.9%	19%
2014/15	Low Carbon	30,363	5.7%	5,667	6.4%	19%
	Environmental	11,701	3.1%	1,958	3.0%	17%
	Renewable Energy	17,851	7.0%	3,284	6.4%	18%
2015/16	Low Carbon	32,240	6.2%	6,194	9.3%	19%
	Environmental	12,099	3.4%	2,018	3.1%	17%
	Renewable Energy	19,231	7.7%	3,520	7.2%	18%
2016/17	Low Carbon	34,447	6.8%	6,829	10.2%	20%
	Environmental	12,548	3.7%	2,085	3.3%	17%
	Renewable Energy	20,812	8.2%	3,797	7.9%	18%
2017/18	Low Carbon	36,883	7.1%	7,621	11.6%	21%
	Environmental	13,020	3.8%	2,160	3.6%	17%
	Renewable Energy	22,575	8.5%	4,125	8.6%	18%

Table 7a: 2017/18 UK and London - LCEGS Level 1 Number of Employees and Growth Summary Table

		UK Total		London		
Year	**Level 1**	**# Employees**	**Growth Rate**	**# Employees**	**Growth Rate**	**Employees as % of UK**
2007/08	Low Carbon	328,992	-	71,661	-	22%
	Environmental	173,488	-	32,547	-	19%
	Renewable Energy	205,388	-	51,745	-	25%
2008/09	Low Carbon	344,084	4.6%	72,085	0.6%	21%
	Environmental	177,541	2.3%	32,773	0.7%	18%
	Renewable Energy	216,314	5.3%	51,729	0.0%	24%
2009/10	Low Carbon	392,602	14.1%	75,281	4.4%	19%
	Environmental	181,818	2.4%	33,051	0.8%	18%
	Renewable Energy	228,308	5.5%	51,389	-0.7%	23%
2010/11	Low Carbon	410,711	4.6%	76,758	2.0%	19%
	Environmental	186,336	2.5%	33,963	2.8%	18%
	Renewable Energy	241,288	5.7%	53,119	3.4%	22%
2011/12	Low Carbon	430,927	4.9%	76,521	-0.3%	18%
	Environmental	191,207	2.6%	33,963	0.0%	18%
	Renewable Energy	255,938	6.1%	53,188	0.1%	21%

Table 7b: 2017/18 UK and London - LCEGS Level 1 Number of Employees and Growth Summary Table

		UK Total		London		
Year	**Level 1**	**# Employees**	**Growth Rate**	**# Employees**	**Growth Rate**	**Employees as % of UK**
2012/13	Low Carbon	452,462	5.0%	80,316	5.0%	18%
	Environmental	196,457	2.7%	34,752	2.3%	18%
	Renewable Energy	272,355	6.4%	56,155	5.6%	21%
2013/14	Low Carbon	476,750	5.4%	86,285	7.4%	18%
	Environmental	202,215	2.9%	35,677	2.7%	18%
	Renewable Energy	290,527	6.7%	59,576	6.1%	21%
2014/15	Low Carbon	503,412	5.6%	92,185	6.8%	18%
	Environmental	208,439	3.1%	36,687	2.8%	18%
	Renewable Energy	311,024	7.1%	63,545	6.7%	20%
2015/16	Low Carbon	534,293	6.1%	100,764	9.3%	19%
	Environmental	215,521	3.4%	37,860	3.2%	18%
	Renewable Energy	335,651	7.9%	68,425	7.7%	20%
2016/17	Low Carbon	579,242	8.4%	111,289	10.4%	19%
	Environmental	227,433	5.5%	39,166	3.4%	17%
	Renewable Energy	369,721	10.2%	74,204	8.4%	20%
2017/18	Low Carbon	619,786	7.0%	124,443	11.8%	20%
	Environmental	235,974	3.8%	40,595	3.6%	17%
	Renewable Energy	401,423	8.6%	81,035	9.2%	20%

3. LCEGS Level 2 – London and UK

Time series graphs and summary tables for LCEGS Level 2 for sales, number of companies and number of employees and their associated growth rates from 2007/08 to 2017/18 are presented in this section.

Figure 13: LCEGS Low Carbon by Level 2 Sub-Sectors London - Sales (£m)

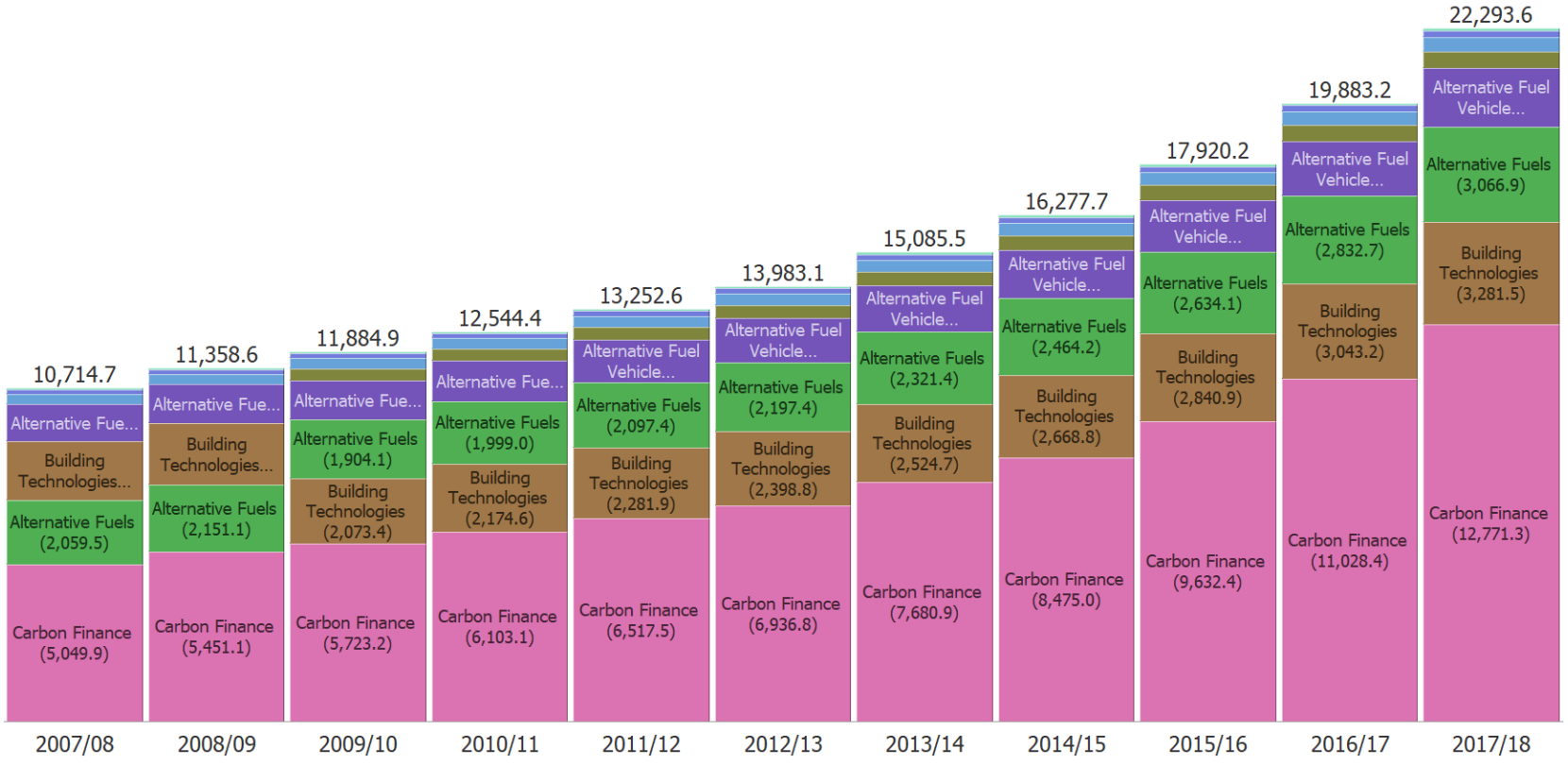


Figure 14: LCEGS Low Carbon by Level 2 Sub-Sectors UK - Sales (£m)

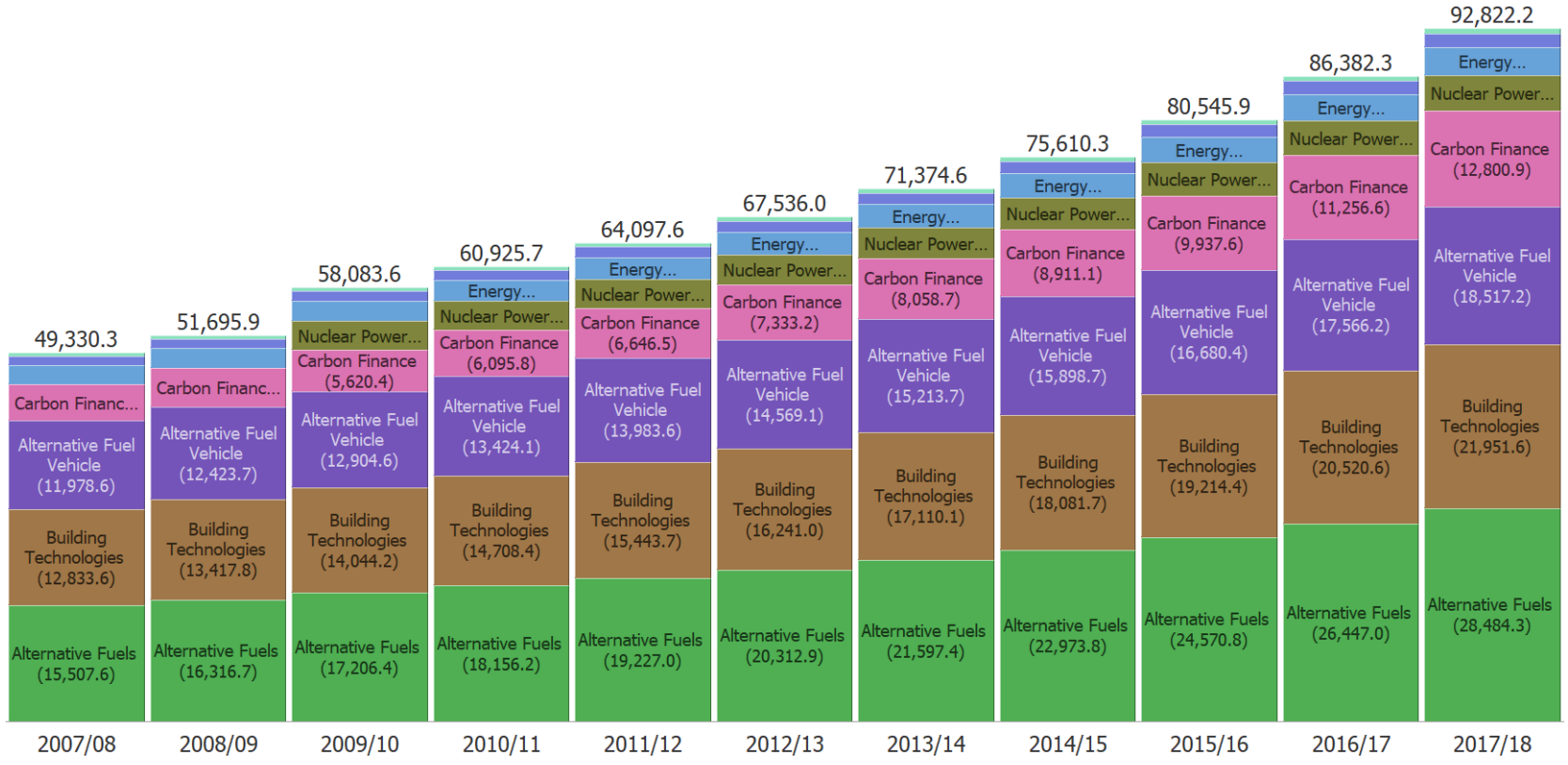


Figure 15: LCEGS Low Carbon by Level 2 Sub-Sectors London – Number of Companies

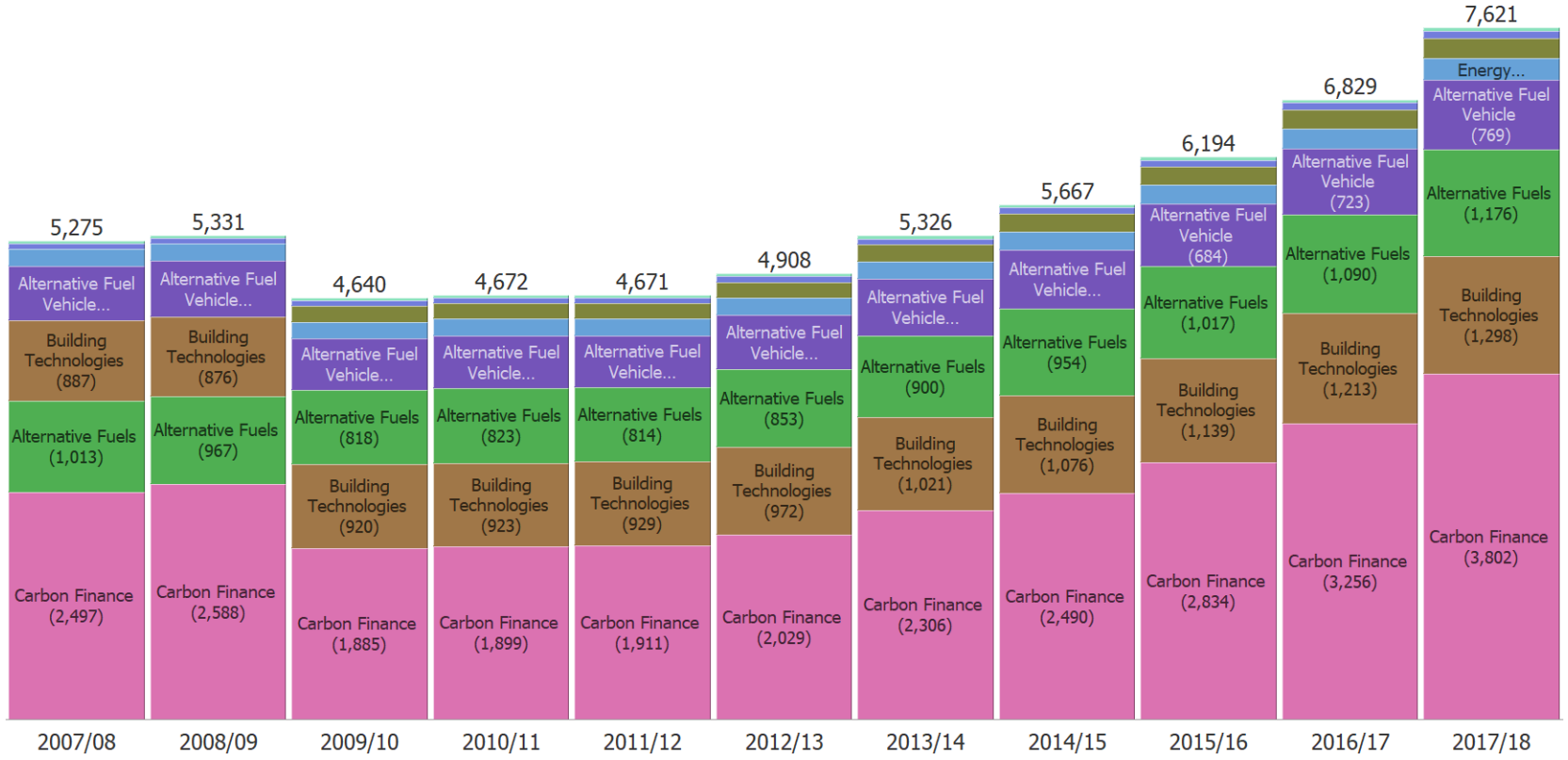


Figure 16: LCEGS Low Carbon by Level 2 Sub-Sectors UK – Number of Companies

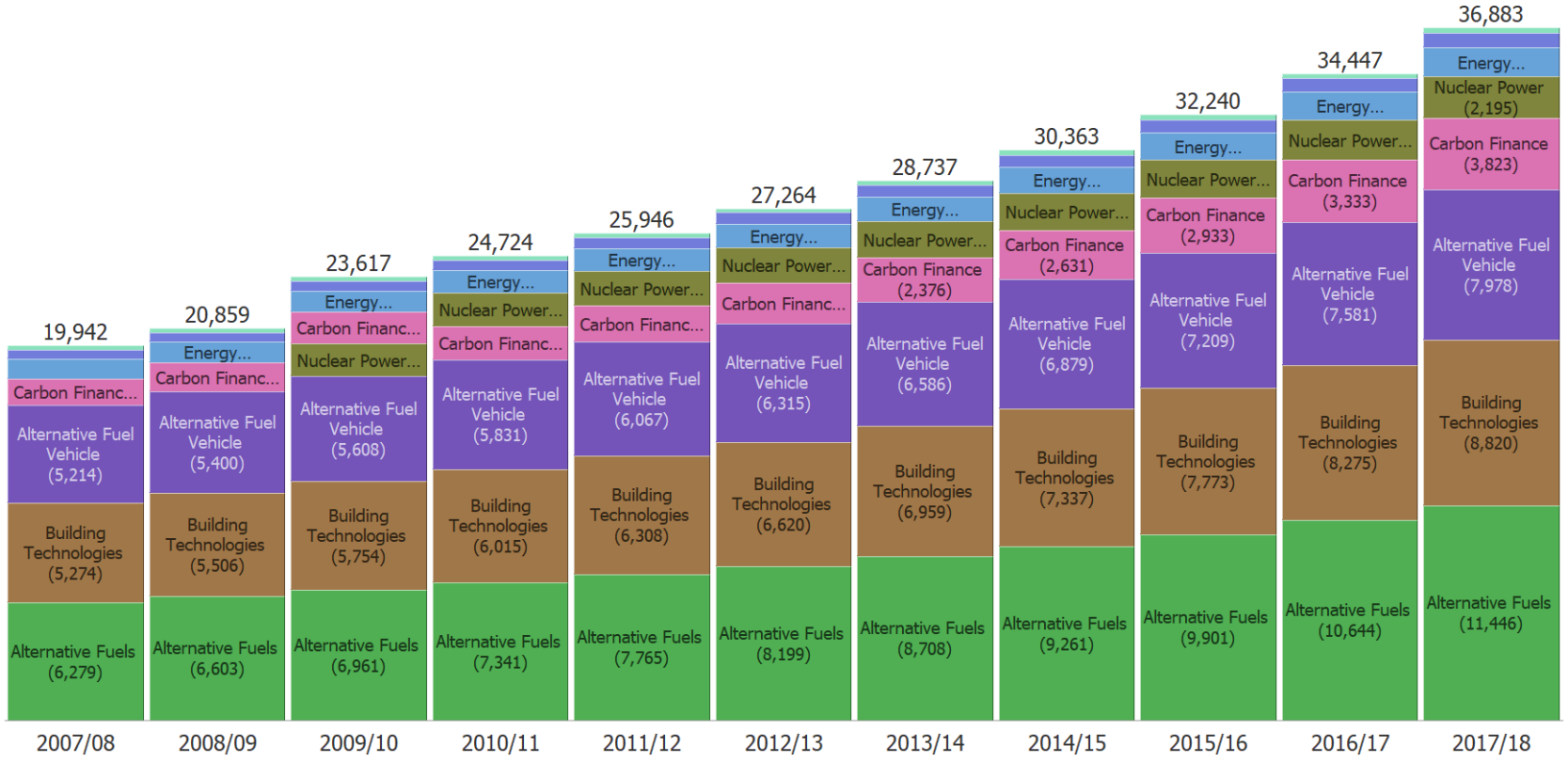


Figure 17: LCEGS Low Carbon by Level 2 Sub-Sectors London – Number of Employees

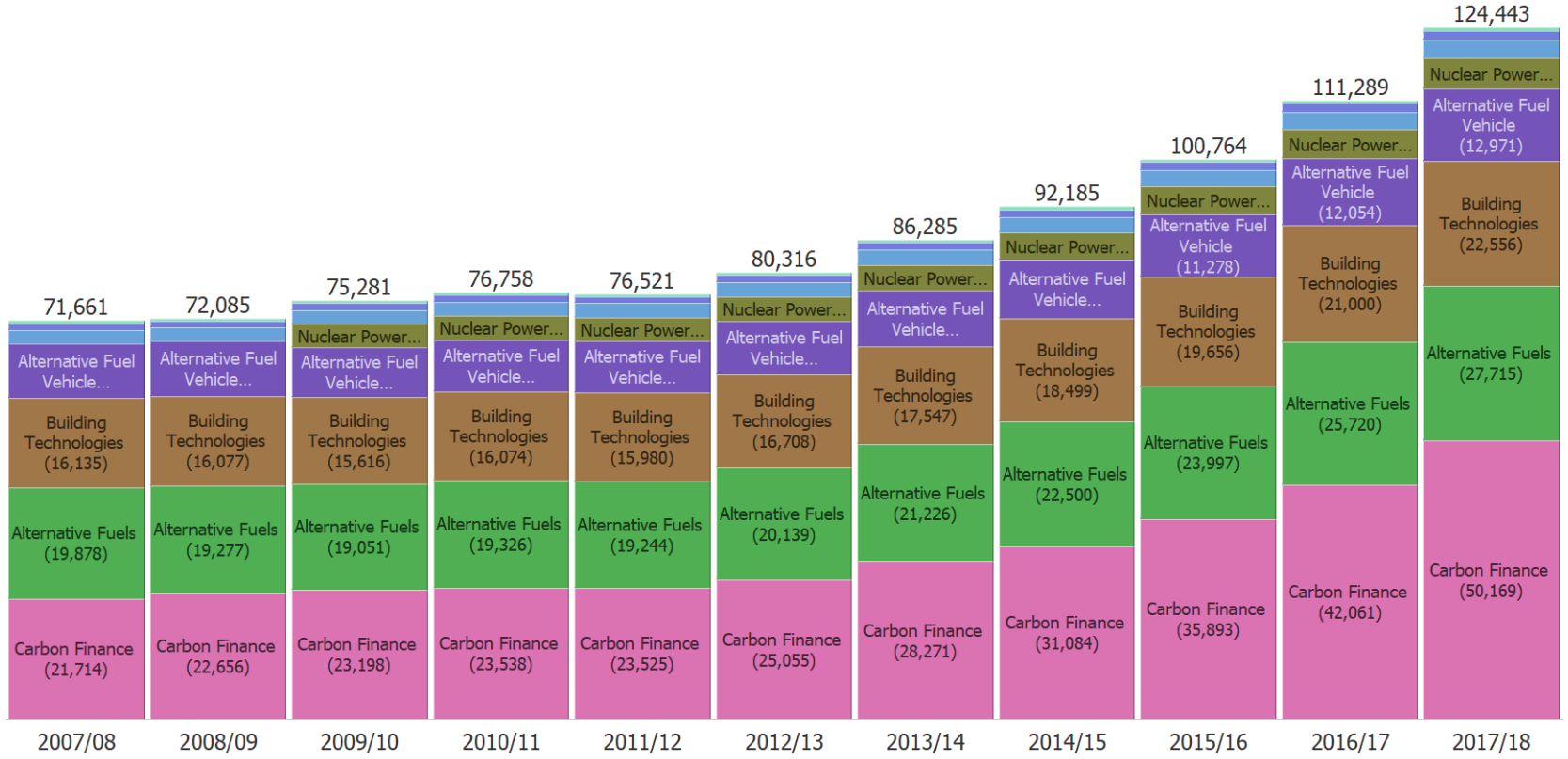


Figure 18: LCEGS Low Carbon by Level 2 Sub-Sectors UK – Number of Employees

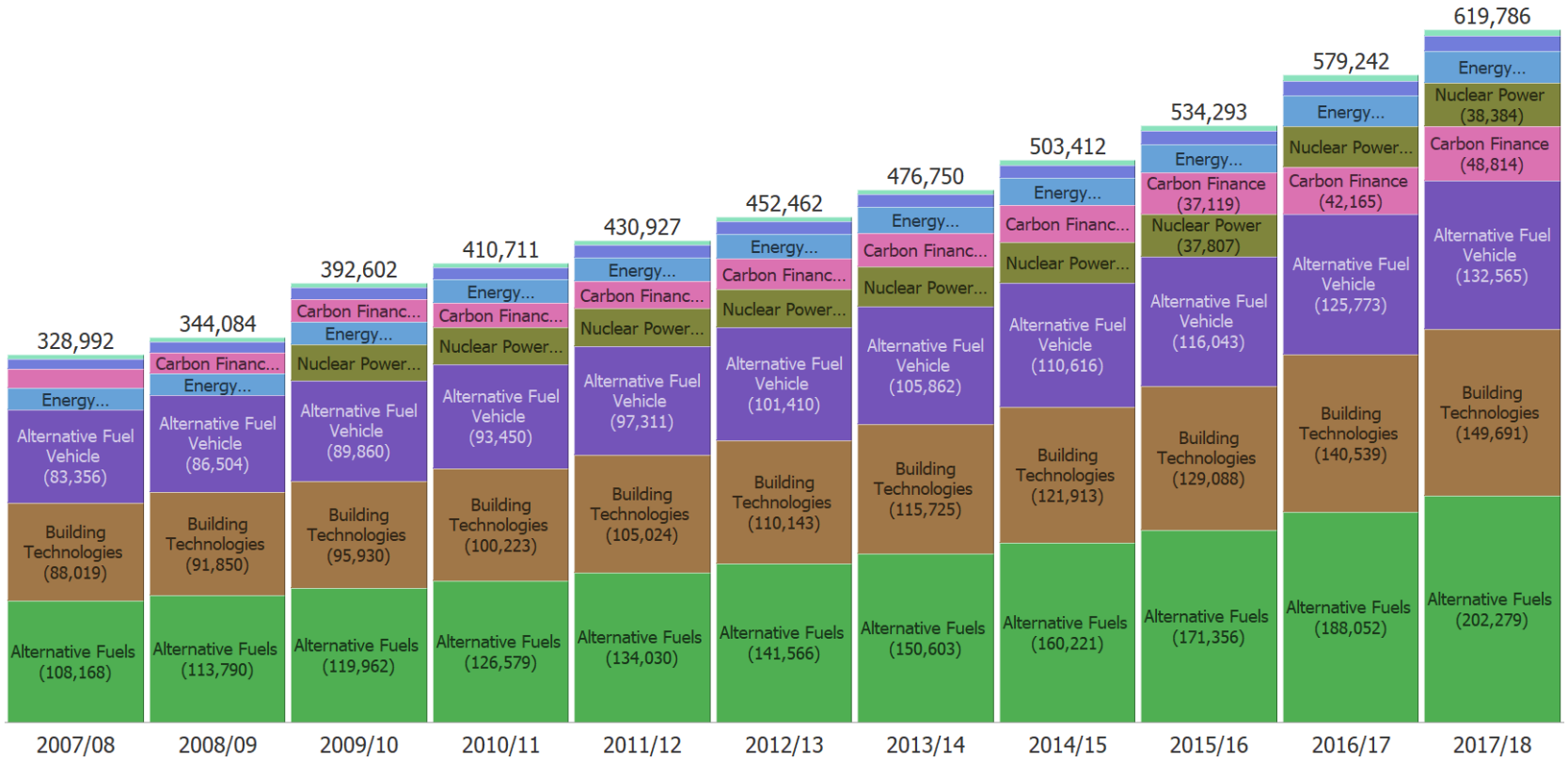


Figure 19: LCEGS Renewable Energy by Level 2 Sub-Sectors London – Sales (£m)

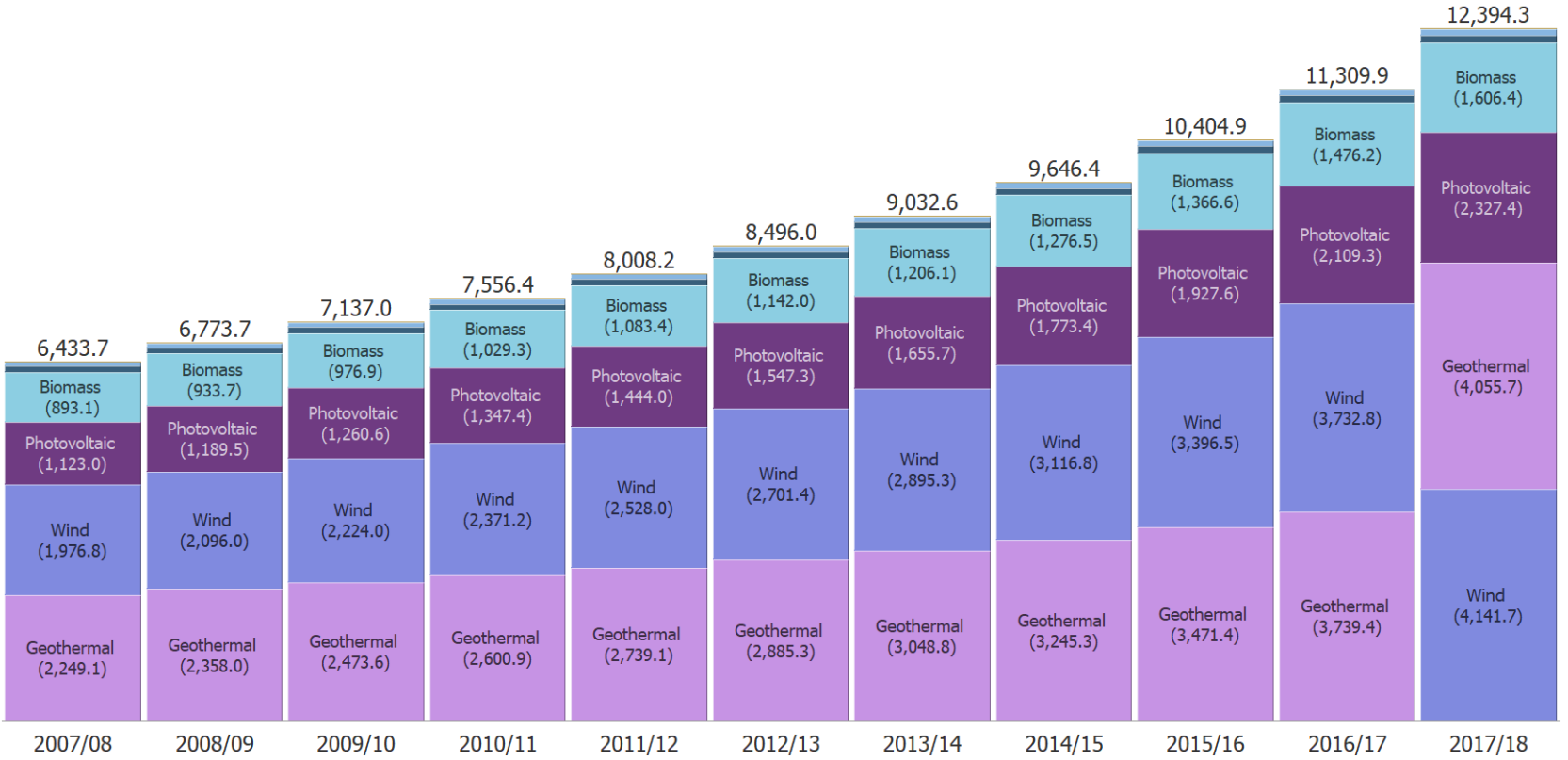


Figure 20: LCEGS Renewable Energy by Level 2 Sub-Sectors UK – Sales (£m)

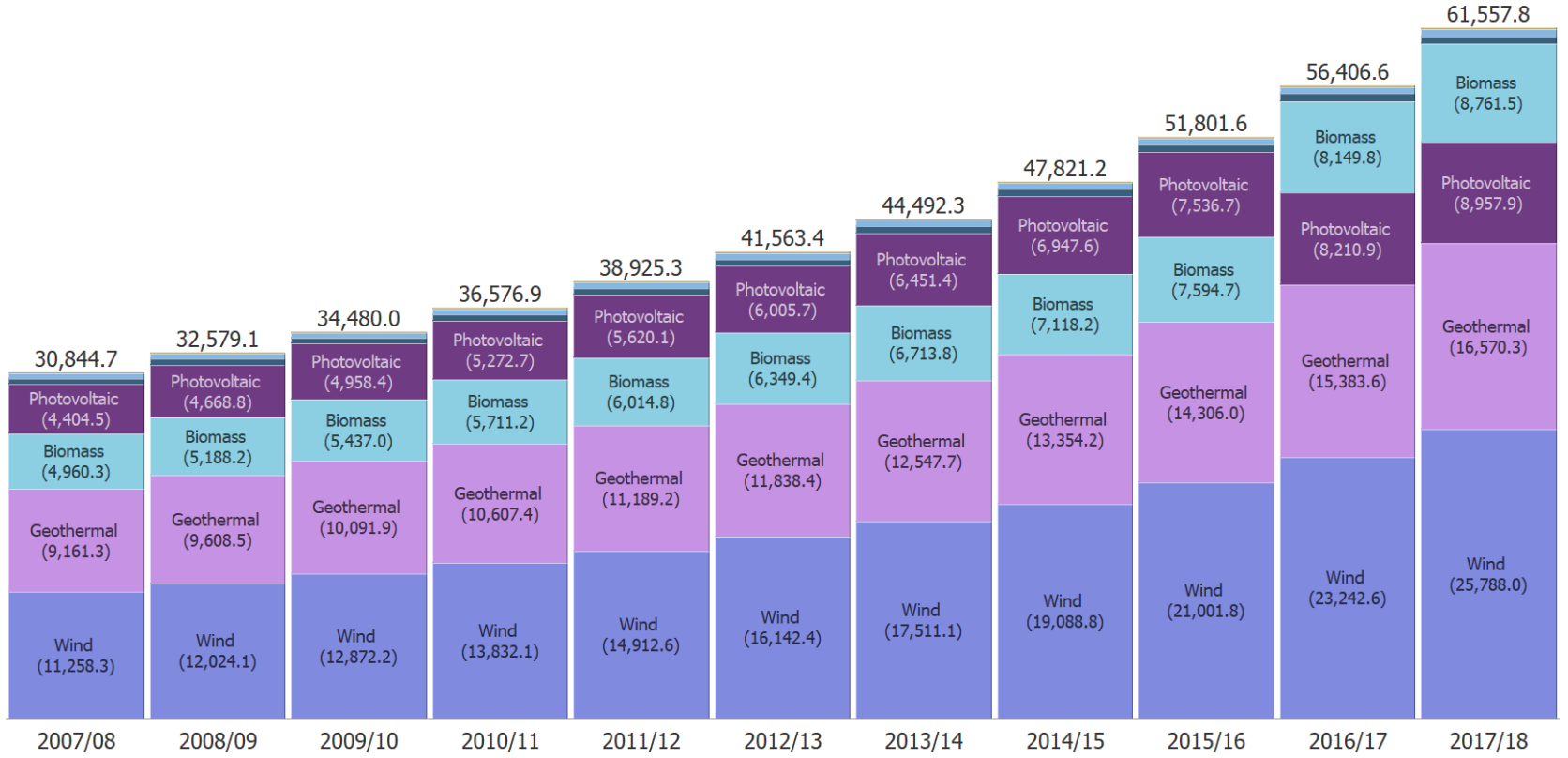


Figure 21: LCEGS Renewable Energy by Level 2 Sub-Sectors London – Number of Companies

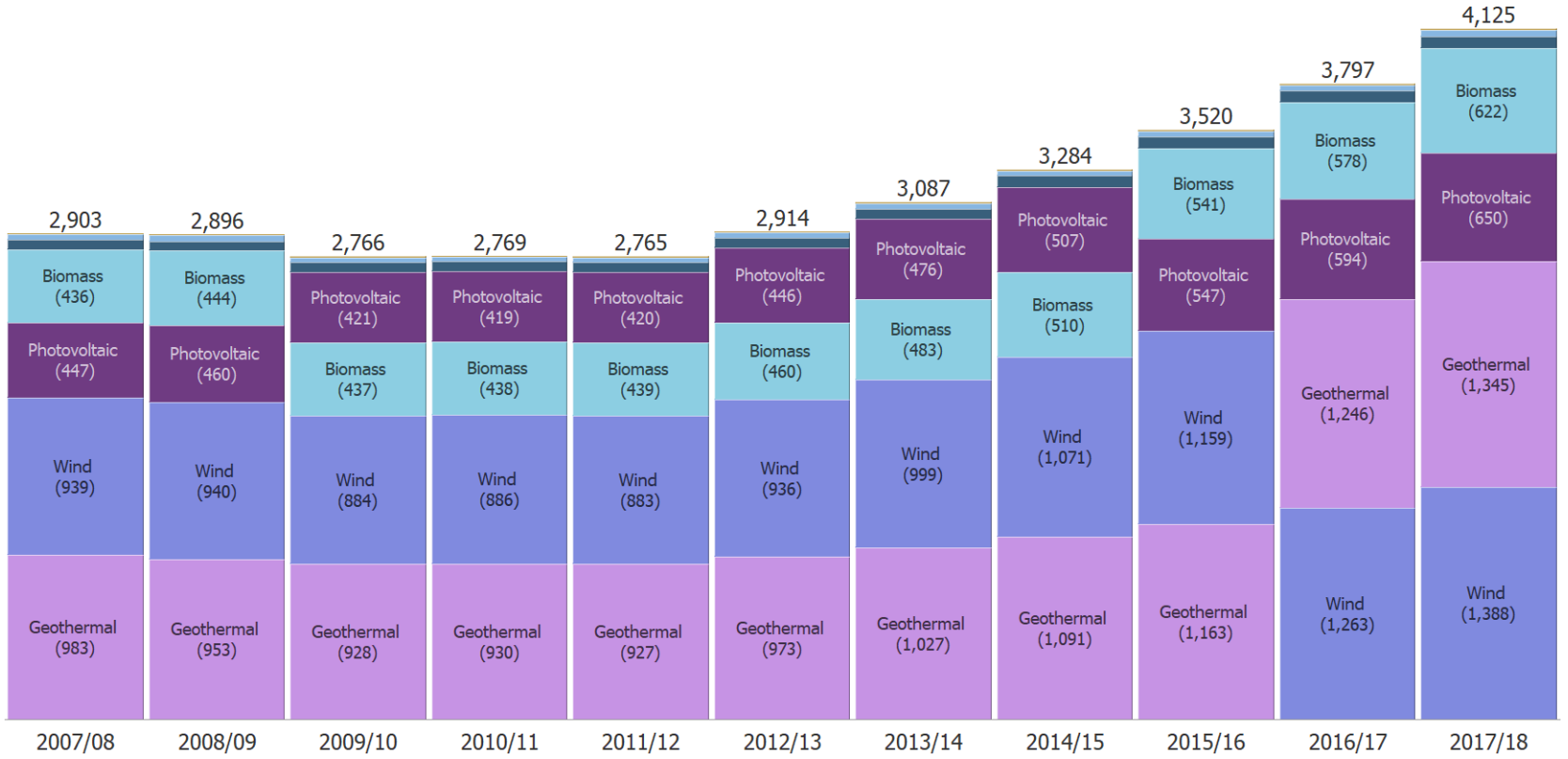


Figure 22: LCEGS Renewable Energy by Level 2 Sub-Sectors UK – Number of Companies

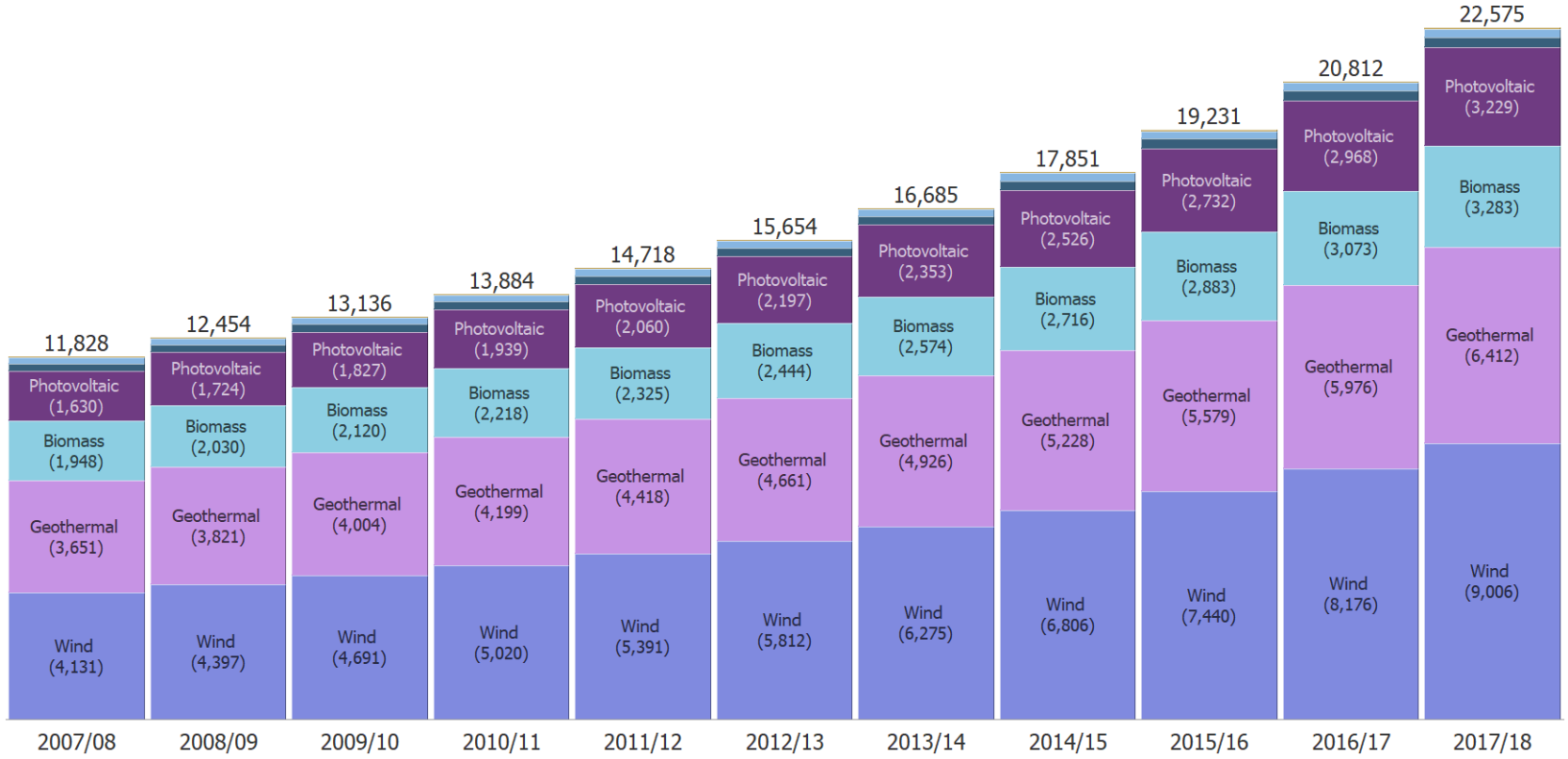


Figure 23: LCEGS Renewable Energy by Level 2 Sub-Sectors London – Number of Employees

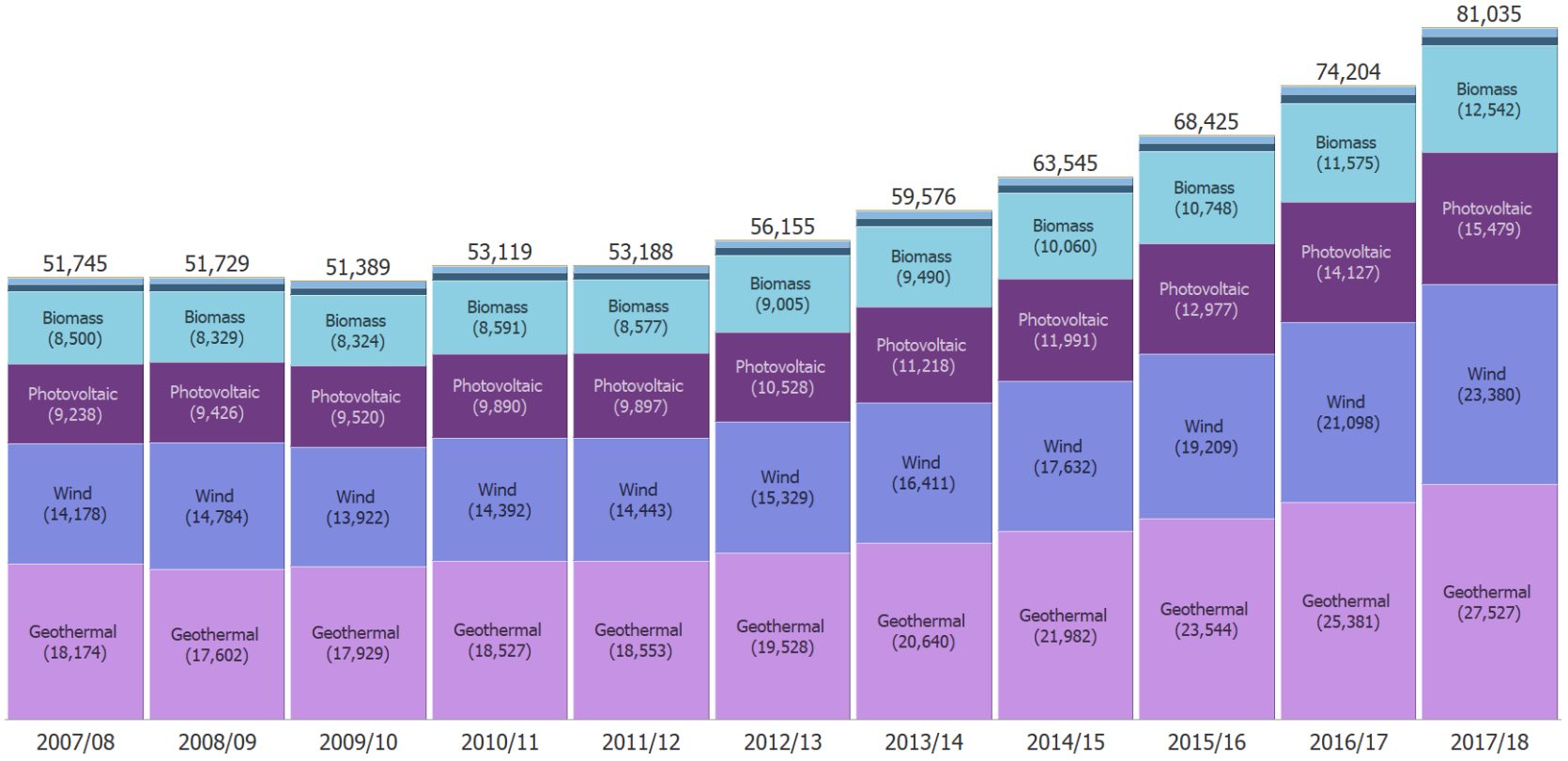


Figure 24: LCEGS Renewable Energy by Level 2 Sub-Sectors UK – Number of Employees

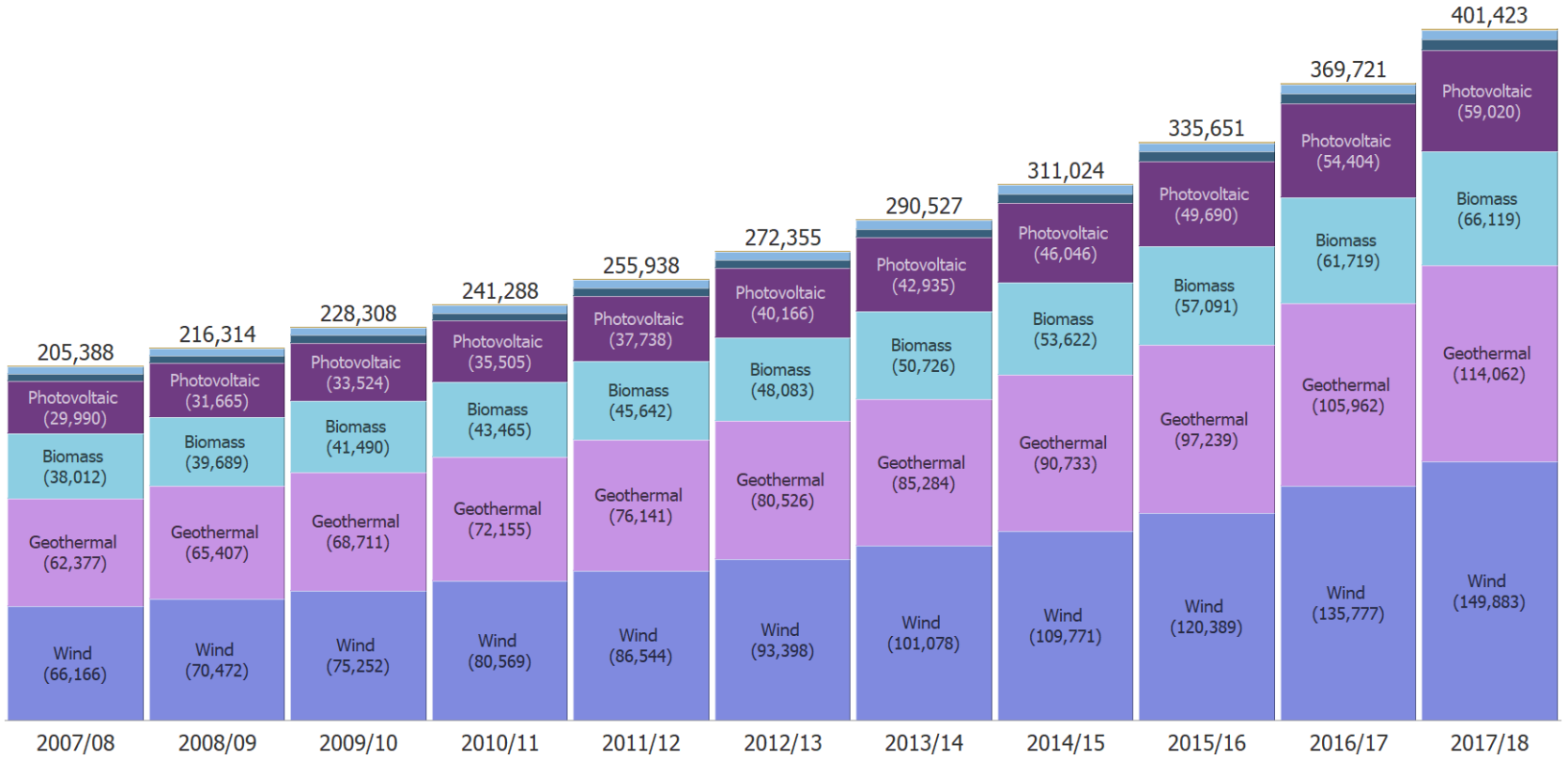


Figure 25: LCEGS Environmental by Level 2 Sub-Sectors London – Sales (£m)

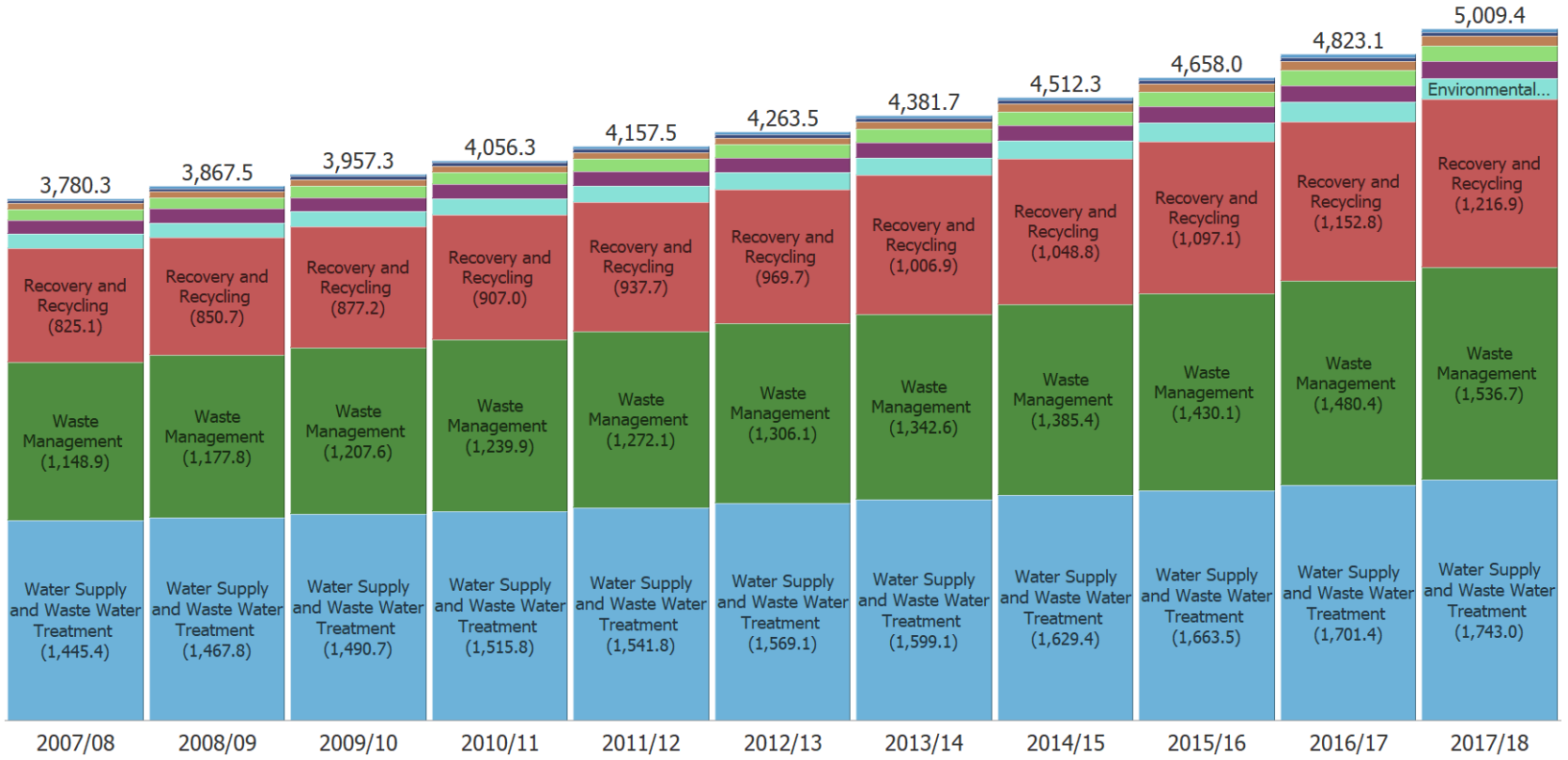


Figure 26: Figure 25: LCEGS Environmental by Level 2 Sub-Sectors UK – Sales (£m)

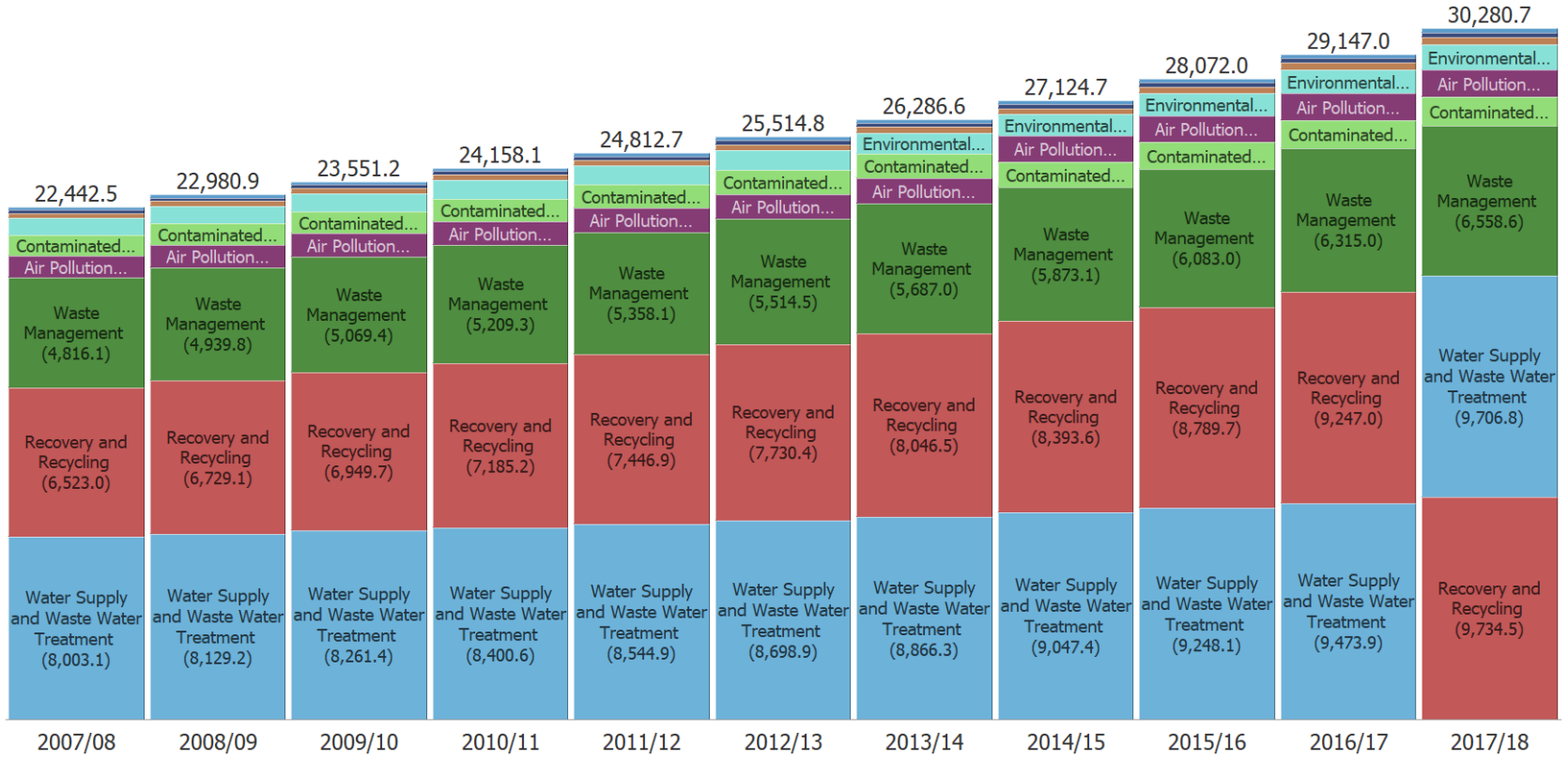


Figure 27: LCEGS Environmental by Level 2 Sub-Sectors London – Number of Companies

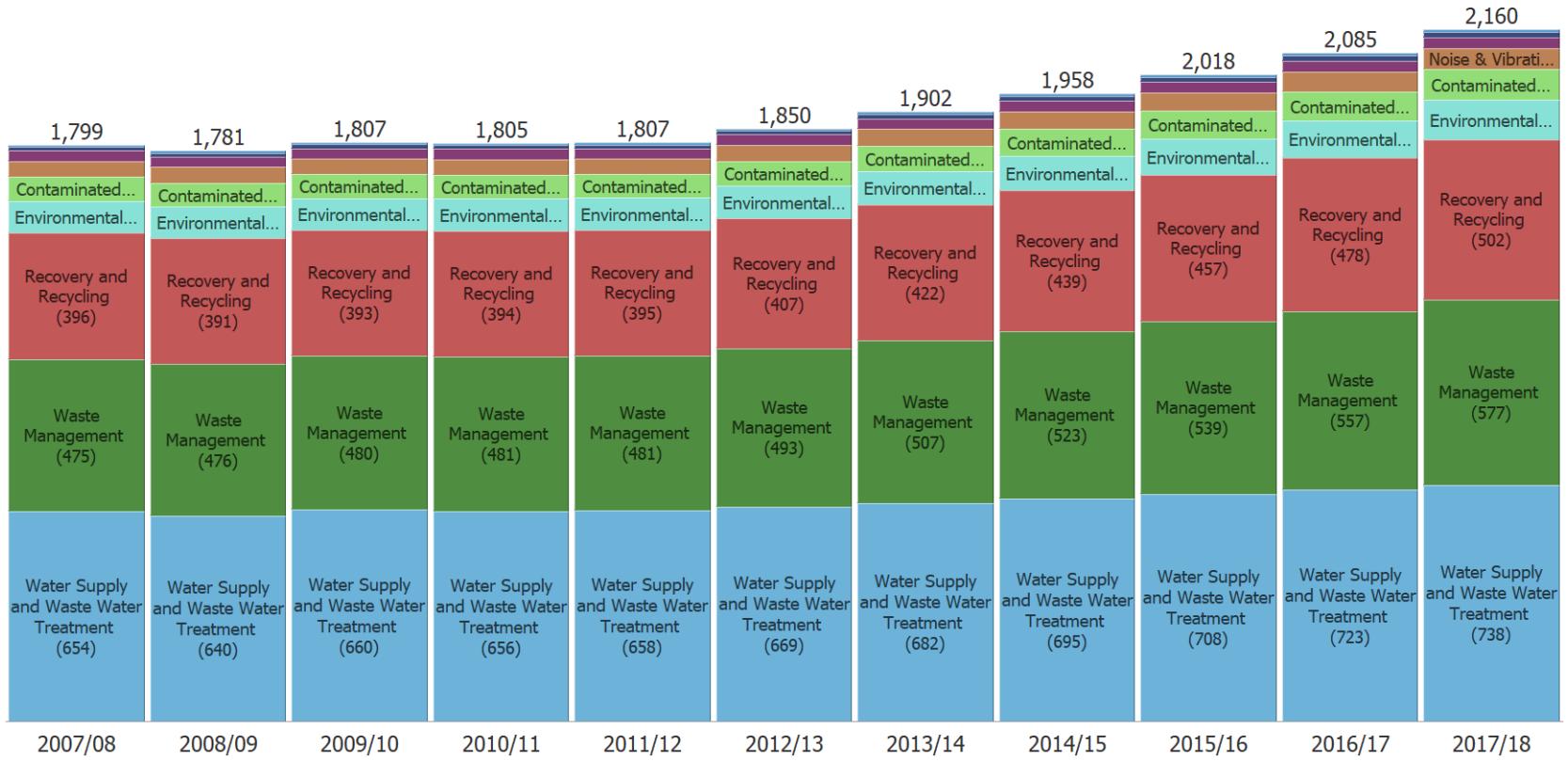


Figure 28: LCEGS Environmental by Level 2 Sub-Sectors UK – Number of Companies

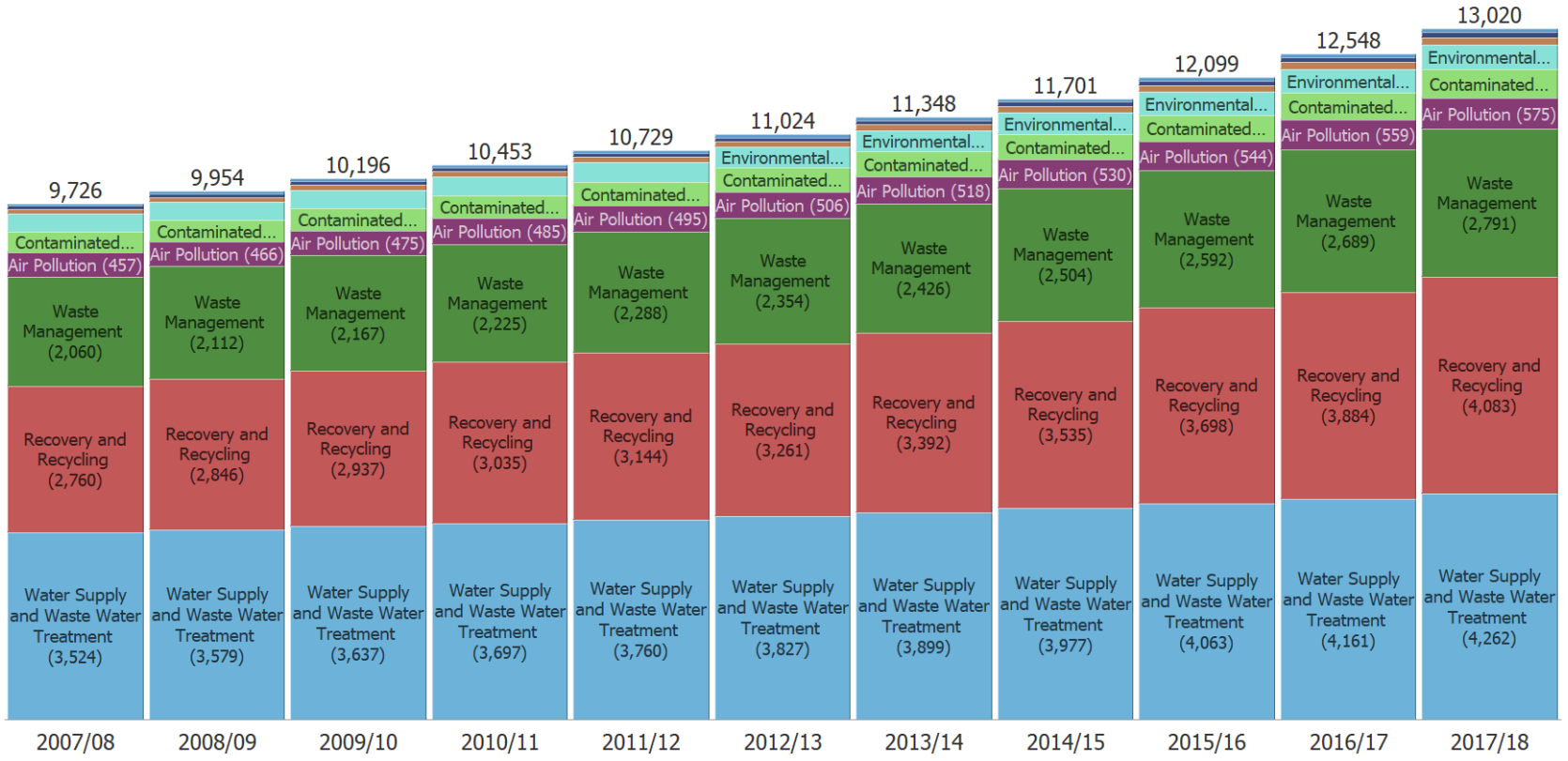


Figure 29: LCEGS Environmental by Level 2 Sub-Sectors London – Number of Employees

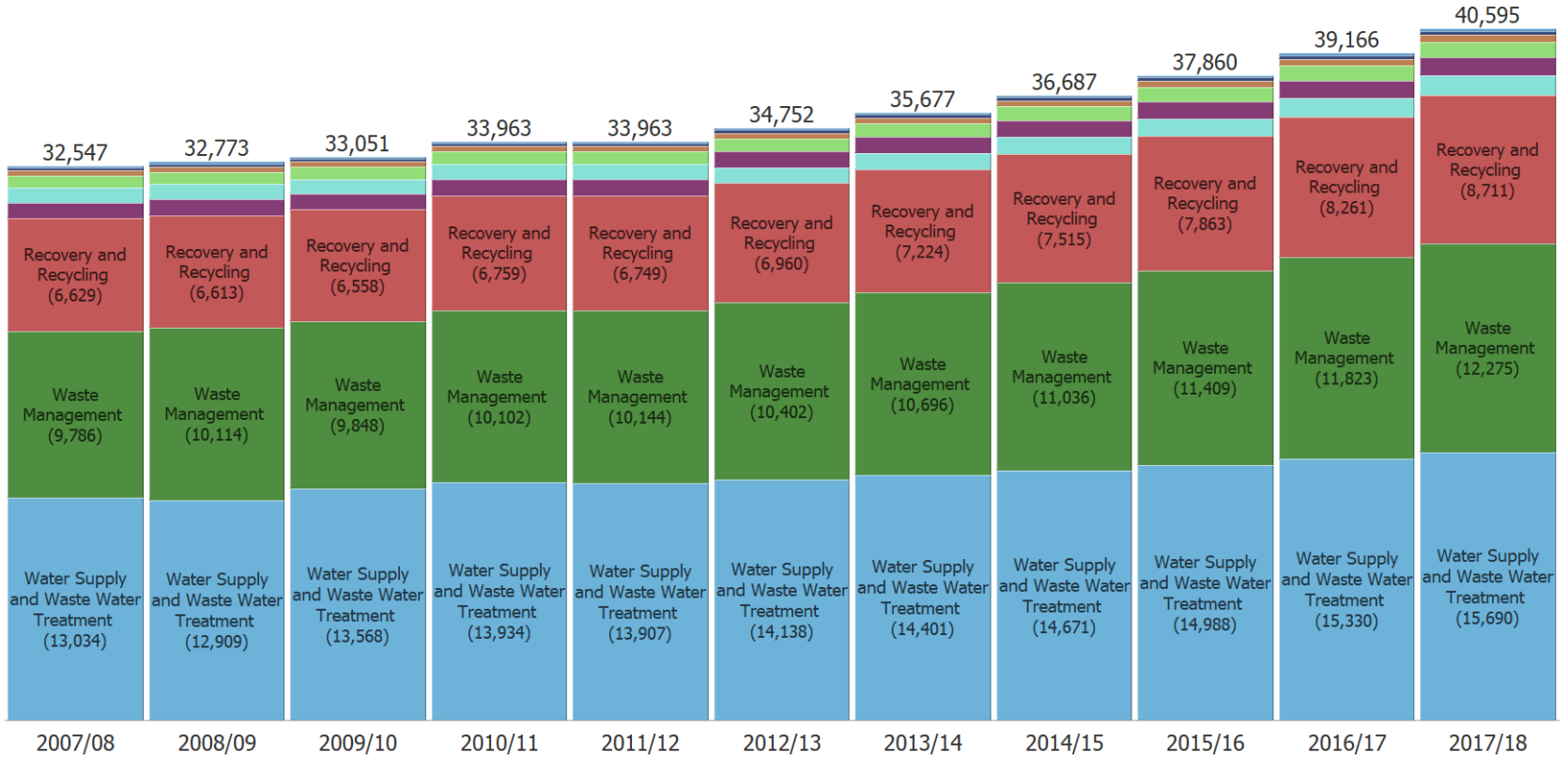


Figure 30: LCEGS Environmental by Level 2 Sub-Sectors UK – Number of Employees

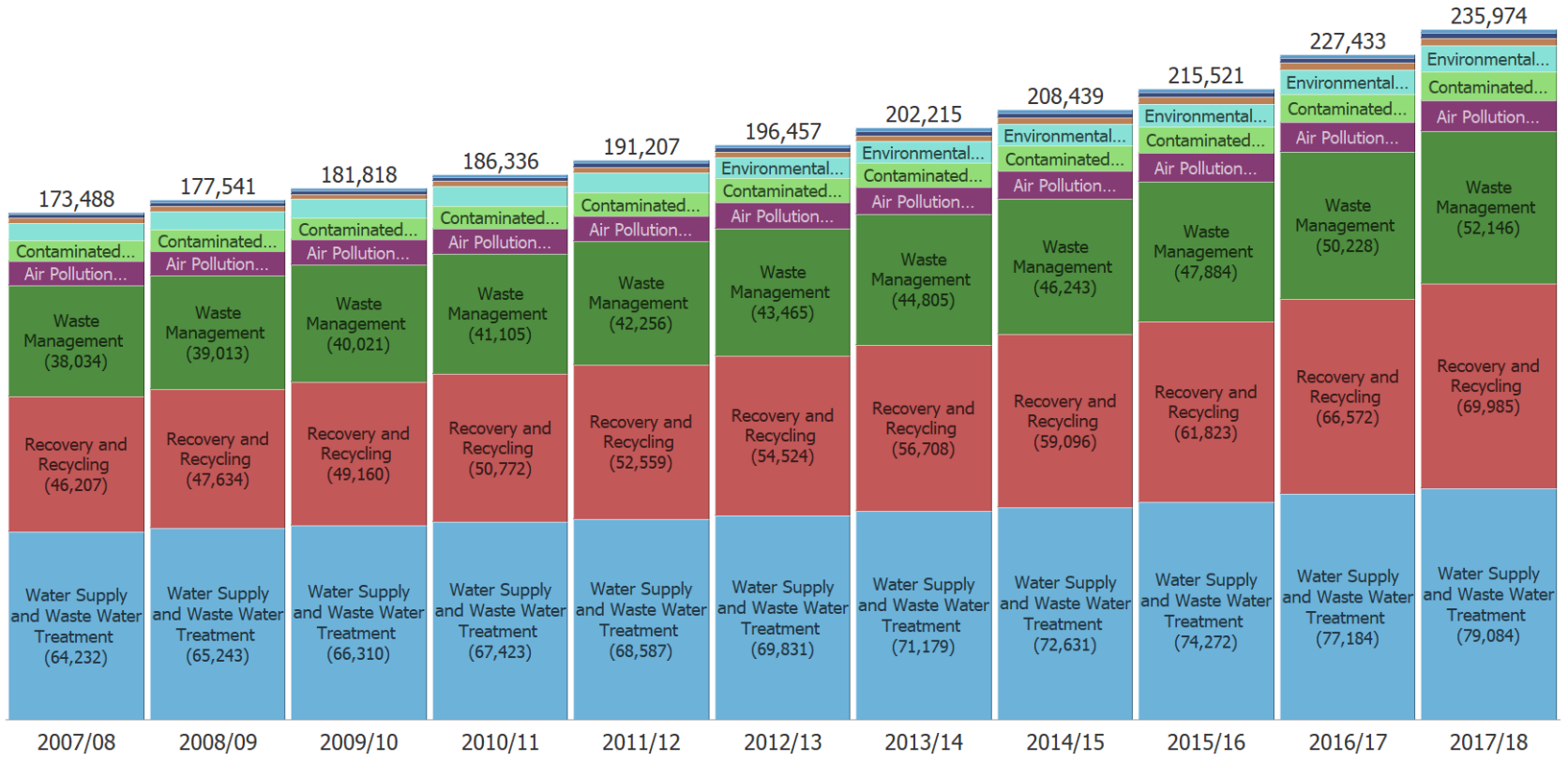


Table 8a: 2007/08 to 2012/13 UK - LCEGS Level 2 Sales and Growth Summary Table

UK													
Level 1	**Level 2**	**Sales 2007/08**	**Growth 2007/08**	**Sales 2008/09**	**Growth 2008/09**	**Sales 2009/10**	**Growth 2009/10**	**Sales 2010/11**	**Growth 2010/11**	**Sales 2011/12**	**Growth 2011/12**	**Sales 2012/13**	**Growth 2012/13**
Environmental	Air Pollution	963.2	-	981.7	1.9%	1,001.3	2.0%	1,021.6	2.0%	1,043.4	2.1%	1,066.5	2.2%
Environmental	Contaminated Land Reclamation & Remediation	917.4	-	941.4	2.6%	966.8	2.7%	993.8	2.8%	1,022.6	2.9%	1,053.8	3.0%
Environmental	Environmental Consultancy and Related Services	745.0	-	768.2	3.1%	793.0	3.2%	819.3	3.3%	848.0	3.5%	879.6	3.7%
Environmental	Environmental Monitoring, Instrumentation and Analysis	150.4	-	155.2	3.2%	160.4	3.3%	165.9	3.4%	171.6	3.4%	178.0	3.7%
Environmental	Marine Pollution Control	119.6	-	123.9	3.6%	128.5	3.7%	133.4	3.8%	138.6	4.0%	144.4	4.1%
Environmental	Noise & Vibration Control	204.8	-	212.4	3.7%	220.6	3.9%	229.1	3.9%	238.6	4.1%	248.8	4.3%
Environmental	Recovery and Recycling	6,523.0	-	6,729.1	3.2%	6,949.7	3.3%	7,185.2	3.4%	7,446.9	3.6%	7,730.4	3.8%
Environmental	Waste Management	4,816.1	-	4,939.8	2.6%	5,069.4	2.6%	5,209.3	2.8%	5,358.1	2.9%	5,514.5	2.9%
Environmental	Water Supply and Waste Water Treatment	8,003.1	-	8,129.2	1.6%	8,261.4	1.6%	8,400.6	1.7%	8,544.9	1.7%	8,698.9	1.8%
Low Carbon	Additional Energy Sources	1,206.1	-	1,249.8	3.6%	1,296.9	3.8%	1,347.6	3.9%	1,400.6	3.9%	1,459.0	4.2%
Low Carbon	Alternative Fuel Vehicle	11,978.6	-	12,423.7	3.7%	12,904.6	3.9%	13,424.1	4.0%	13,983.6	4.2%	14,569.1	4.2%
Low Carbon	Alternative Fuels	15,507.6	-	16,316.7	5.2%	17,206.4	5.5%	18,156.2	5.5%	19,227.0	5.9%	20,312.9	5.6%
Low Carbon	Building Technologies	12,833.6	-	13,417.8	4.6%	14,044.2	4.7%	14,708.4	4.7%	15,443.7	5.0%	16,241.0	5.2%
Low Carbon	Carbon Capture & Storage	467.9	-	482.9	3.2%	499.1	3.3%	516.0	3.4%	534.4	3.6%	554.9	3.8%
Low Carbon	Carbon Finance	4,789.5	-	5,176.3	8.1%	5,620.4	8.6%	6,095.8	8.5%	6,646.5	9.0%	7,333.2	10.3%
Low Carbon	Energy Management	2,547.0	-	2,628.6	3.2%	2,715.5	3.3%	2,807.7	3.4%	2,906.6	3.5%	3,012.5	3.6%
Low Carbon	Nuclear Power	-	-	-	-	3,796.6	-	3,869.9	1.9%	3,955.3	2.2%	4,053.5	2.5%
Renewable Energy	Biomass	4,960.3	-	5,188.2	4.6%	5,437.0	4.8%	5,711.2	5.0%	6,014.8	5.3%	6,349.4	5.6%
Renewable Energy	Geothermal	9,161.3	-	9,608.5	4.9%	10,091.9	5.0%	10,607.4	5.1%	11,189.2	5.5%	11,838.4	5.8%
Renewable Energy	Hydro	502.9	-	516.2	2.6%	530.1	2.7%	545.0	2.8%	561.0	2.9%	578.4	3.1%
Renewable Energy	Photovoltaic	4,404.5	-	4,668.8	6.0%	4,958.4	6.2%	5,272.7	6.3%	5,620.1	6.6%	6,005.7	6.9%
Renewable Energy	Renewable Energy General Consultancy	484.4	-	496.5	2.5%	509.2	2.6%	522.8	2.7%	536.8	2.7%	552.6	2.9%
Renewable Energy	Wave & Tidal	73.0	-	76.9	5.3%	81.1	5.5%	85.8	5.7%	90.8	5.9%	96.4	6.2%
Renewable Energy	Wind	11,258.3	-	12,024.1	6.8%	12,872.2	7.1%	13,832.1	7.5%	14,912.6	7.8%	16,142.4	8.2%
Total		**102,617.5**	**-**	**107,255.9**	**4.5%**	**116,114.8**	**8.3%**	**121,660.7**	**4.8%**	**127,835.7**	**5.1%**	**134,614.2**	**5.3%**

Table 8b: 2013/14 to 2017/18 UK - LCEGS Level 2 Sales and Growth Summary Table

UK											
Level 1	**Level 2**	**Sales 2013/14**	**Growth 2013/14**	**Sales 2014/15**	**Growth 2014/15**	**Sales 2015/16**	**Growth 2015/16**	**Sales 2016/17**	**Growth 2016/17**	**Sales 2017/18**	**Growth 2017/18**
Environmental	Air Pollution	1,091.0	2.3%	1,117.0	2.4%	1,146.1	2.6%	1,179.1	2.9%	1,213.5	2.9%
Environmental	Contaminated Land Reclamation & Remediation	1,087.3	3.2%	1,122.8	3.3%	1,162.8	3.6%	1,208.7	3.9%	1,257.1	4.0%
Environmental	Environmental Consultancy and Related Services	913.1	3.8%	949.1	3.9%	990.2	4.3%	1,036.5	4.7%	1,086.1	4.8%
Environmental	Environmental Monitoring, Instrumentation and Analysis	184.8	3.8%	192.2	4.0%	200.7	4.4%	210.4	4.8%	220.7	4.9%
Environmental	Marine Pollution Control	150.5	4.3%	157.3	4.5%	165.1	4.9%	173.8	5.3%	183.1	5.4%
Environmental	Noise & Vibration Control	260.1	4.5%	272.3	4.7%	286.4	5.2%	302.7	5.7%	320.2	5.8%
Environmental	Recovery and Recycling	8,046.5	4.1%	8,393.6	4.3%	8,789.7	4.7%	9,247.0	5.2%	9,734.5	5.3%
Environmental	Waste Management	5,687.0	3.1%	5,873.1	3.3%	6,083.0	3.6%	6,315.0	3.8%	6,558.6	3.9%
Environmental	Water Supply and Waste Water Treatment	8,866.3	1.9%	9,047.4	2.0%	9,248.1	2.2%	9,473.9	2.4%	9,706.8	2.5%
Low Carbon	Additional Energy Sources	1,521.9	4.3%	1,588.2	4.4%	1,663.2	4.7%	1,747.5	5.1%	1,837.1	5.1%
Low Carbon	Alternative Fuel Vehicle	15,213.7	4.4%	15,898.7	4.5%	16,680.4	4.9%	17,566.2	5.3%	18,517.2	5.4%
Low Carbon	Alternative Fuels	21,597.4	6.3%	22,973.8	6.4%	24,570.8	7.0%	26,447.0	7.6%	28,484.3	7.7%
Low Carbon	Building Technologies	17,110.1	5.4%	18,081.7	5.7%	19,214.4	6.3%	20,520.6	6.8%	21,951.6	7.0%
Low Carbon	Carbon Capture & Storage	576.5	3.9%	599.1	3.9%	624.8	4.3%	654.3	4.7%	685.6	4.8%
Low Carbon	Carbon Finance	8,058.7	9.9%	8,911.1	10.6%	9,937.6	11.5%	11,256.6	13.3%	12,800.9	13.7%
Low Carbon	Energy Management	3,128.5	3.9%	3,255.7	4.1%	3,400.2	4.4%	3,564.8	4.8%	3,739.5	4.9%
Low Carbon	Nuclear Power	4,167.7	2.8%	4,302.0	3.2%	4,454.5	3.5%	4,625.2	3.8%	4,806.0	3.9%
Renewable Energy	Biomass	6,713.8	5.7%	7,118.2	6.0%	7,594.7	6.7%	8,149.8	7.3%	8,761.5	7.5%
Renewable Energy	Geothermal	12,547.7	6.0%	13,354.2	6.4%	14,306.0	7.1%	15,383.6	7.5%	16,570.3	7.7%
Renewable Energy	Hydro	596.6	3.1%	616.5	3.3%	638.9	3.6%	664.2	4.0%	690.9	4.0%
Renewable Energy	Photovoltaic	6,451.4	7.4%	6,947.6	7.7%	7,536.7	8.5%	8,210.9	8.9%	8,957.9	9.1%
Renewable Energy	Renewable Energy General Consultancy	569.0	3.0%	586.4	3.0%	605.7	3.3%	628.4	3.7%	651.9	3.7%
Renewable Energy	Wave & Tidal	102.7	6.5%	109.6	6.8%	117.8	7.4%	127.1	7.9%	137.3	8.0%
Renewable Energy	Wind	17,511.1	8.5%	19,088.8	9.0%	21,001.8	10.0%	23,242.6	10.7%	25,788.0	11.0%
Total		**142,153.5**	**5.6%**	**150,556.2**	**5.9%**	**160,419.5**	**6.6%**	**171,936.0**	**7.2%**	**184,660.7**	**7.4%**

Table 9a: 2007/08 to 2012/13 London - LCEGS Level 2 Sales and Growth Summary Table

London													
Level 1	**Level 2**	**Sales 2007/08**	**Growth 2007/08**	**Sales 2008/09**	**Growth 2008/09**	**Sales 2009/10**	**Growth 2009/10**	**Sales 2010/11**	**Growth 2010/11**	**Sales 2011/12**	**Growth 2011/12**	**Sales 2012/13**	**Growth 2012/13**
Environmental	Air Pollution	98.2	-	100.1	1.9%	102.0	1.9%	104.1	2.1%	106.3	2.1%	108.6	2.1%
Environmental	Contaminated Land Reclamation & Remediation	80.1	-	82.5	3.0%	85.0	2.9%	87.6	3.1%	90.4	3.2%	93.4	3.3%
Environmental	Environmental Consultancy and Related Services	104.0	-	107.1	3.0%	110.4	3.1%	114.1	3.3%	117.9	3.3%	121.8	3.3%
Environmental	Environmental Monitoring, Instrumentation and Analysis	21.3	-	22.0	3.2%	22.7	3.3%	23.5	3.5%	24.4	3.6%	25.2	3.6%
Environmental	Marine Pollution Control	15.5	-	16.0	3.4%	16.6	3.5%	17.2	3.7%	17.8	3.7%	18.5	3.6%
Environmental	Noise & Vibration Control	41.9	-	43.5	3.9%	45.2	3.8%	47.0	4.1%	49.1	4.3%	51.1	4.3%
Environmental	Recovery and Recycling	825.1	-	850.7	3.1%	877.2	3.1%	907.0	3.4%	937.7	3.4%	969.7	3.4%
Environmental	Waste Management	1,148.9	-	1,177.8	2.5%	1,207.6	2.5%	1,239.9	2.7%	1,272.1	2.6%	1,306.1	2.7%
Environmental	Water Supply and Waste Water Treatment	1,445.4	-	1,467.8	1.6%	1,490.7	1.6%	1,515.8	1.7%	1,541.8	1.7%	1,569.1	1.8%
Low Carbon	Additional Energy Sources	138.3	-	143.3	3.6%	148.1	3.4%	153.7	3.8%	159.5	3.8%	165.6	3.8%
Low Carbon	Alternative Fuel Vehicle	1,203.0	-	1,250.5	3.9%	1,254.3	0.3%	1,307.4	4.2%	1,363.9	4.3%	1,425.2	4.5%
Low Carbon	Alternative Fuels	2,059.5	-	2,151.1	4.4%	1,904.1	-11.5%	1,999.0	5.0%	2,097.4	4.9%	2,197.4	4.8%
Low Carbon	Building Technologies	1,894.7	-	1,981.7	4.6%	2,073.4	4.6%	2,174.6	4.9%	2,281.9	4.9%	2,398.8	5.1%
Low Carbon	Carbon Capture & Storage	55.8	-	57.3	2.8%	59.0	2.9%	60.8	3.1%	62.8	3.2%	64.8	3.3%
Low Carbon	Carbon Finance	5,049.9	-	5,451.1	7.9%	5,723.2	5.0%	6,103.1	6.6%	6,517.5	6.8%	6,936.8	6.4%
Low Carbon	Energy Management	313.5	-	323.7	3.2%	334.1	3.2%	346.0	3.6%	358.6	3.7%	371.6	3.6%
Low Carbon	Nuclear Power	-	-	-	-	388.8	-	399.7	2.8%	411.1	2.8%	422.8	2.8%
Renewable Energy	Biomass	893.1	-	933.7	4.5%	976.9	4.6%	1,029.3	5.4%	1,083.4	5.3%	1,142.0	5.4%
Renewable Energy	Geothermal	2,249.1	-	2,358.0	4.8%	2,473.6	4.9%	2,600.9	5.1%	2,739.1	5.3%	2,885.3	5.3%
Renewable Energy	Hydro	101.4	-	103.7	2.3%	106.1	2.3%	108.8	2.5%	111.6	2.6%	114.5	2.6%
Renewable Energy	Photovoltaic	1,123.0	-	1,189.5	5.9%	1,260.6	6.0%	1,347.4	6.9%	1,444.0	7.2%	1,547.3	7.2%
Renewable Energy	Renewable Energy General Consultancy	81.1	-	83.2	2.5%	85.6	3.0%	88.1	2.9%	90.6	2.9%	93.3	2.9%
Renewable Energy	Wave & Tidal	9.2	-	9.7	5.6%	10.2	5.5%	10.8	6.1%	11.5	6.2%	12.2	6.3%
Renewable Energy	Wind	1,976.8	-	2,096.0	6.0%	2,224.0	6.1%	2,371.2	6.6%	2,528.0	6.6%	2,701.4	6.9%
Total		**20,928.7**	-	**21,999.8**	**5.1%**	**22,979.2**	**4.5%**	**24,157.1**	**5.1%**	**25,418.4**	**5.2%**	**26,742.6**	**5.2%**

Table 9b: 2013/14 to 2017/18 London - LCEGS Level 2 Sales and Growth Summary Table

London											
Level 1	Level 2	Sales 2013/14	Growth 2013/14	Sales 2014/15	Growth 2014/15	Sales 2015/16	Growth 2015/16	Sales 2016/17	Growth 2016/17	Sales 2017/18	Growth 2017/18
Environmental	Air Pollution	111.1	2.3%	113.9	2.5%	116.9	2.6%	120.3	3.0%	124.2	3.2%
Environmental	Contaminated Land Reclamation & Remediation	96.8	3.6%	100.5	3.9%	104.9	4.3%	109.8	4.7%	115.3	5.1%
Environmental	Environmental Consultancy and Related Services	126.3	3.7%	130.7	3.5%	136.4	4.4%	142.9	4.8%	150.4	5.2%
Environmental	Environmental Monitoring, Instrumentation and Analysis	26.3	4.1%	27.4	4.1%	28.7	4.9%	30.2	5.3%	32.0	5.8%
Environmental	Marine Pollution Control	19.2	3.9%	20.0	4.4%	20.9	4.5%	22.0	5.0%	23.2	5.5%
Environmental	Noise & Vibration Control	53.5	4.7%	56.2	4.9%	59.5	5.8%	63.3	6.4%	67.6	6.9%
Environmental	Recovery and Recycling	1,006.9	3.8%	1,048.8	4.2%	1,097.1	4.6%	1,152.8	5.1%	1,216.9	5.6%
Environmental	Waste Management	1,342.6	2.8%	1,385.4	3.2%	1,430.1	3.2%	1,480.4	3.5%	1,536.7	3.8%
Environmental	Water Supply and Waste Water Treatment	1,599.1	1.9%	1,629.4	1.9%	1,663.5	2.1%	1,701.4	2.3%	1,743.0	2.4%
Low Carbon	Additional Energy Sources	171.9	3.8%	180.2	4.8%	188.2	4.4%	197.4	4.9%	207.7	5.3%
Low Carbon	Alternative Fuel Vehicle	1,492.6	4.7%	1,559.2	4.5%	1,648.9	5.8%	1,754.2	6.4%	1,879.6	7.1%
Low Carbon	Alternative Fuels	2,321.4	5.6%	2,464.2	6.1%	2,634.1	6.9%	2,832.7	7.5%	3,066.9	8.3%
Low Carbon	Building Technologies	2,524.7	5.2%	2,668.9	5.7%	2,840.9	6.4%	3,043.2	7.1%	3,281.5	7.8%
Low Carbon	Carbon Capture & Storage	67.0	3.3%	69.5	3.8%	72.1	3.7%	75.1	4.2%	78.5	4.5%
Low Carbon	Carbon Finance	7,680.9	10.7%	8,475.0	10.3%	9,632.4	13.7%	11,028.4	14.5%	12,771.3	15.8%
Low Carbon	Energy Management	386.7	4.1%	401.8	3.9%	421.4	4.9%	443.9	5.3%	469.6	5.8%
Low Carbon	Nuclear Power	440.4	4.2%	459.2	4.3%	482.2	5.0%	508.5	5.4%	538.5	5.9%
Renewable Energy	Biomass	1,206.1	5.6%	1,276.5	5.8%	1,366.6	7.1%	1,476.2	8.0%	1,606.4	8.8%
Renewable Energy	Geothermal	3,048.8	5.7%	3,245.3	6.4%	3,471.4	7.0%	3,739.4	7.7%	4,055.7	8.5%
Renewable Energy	Hydro	117.8	2.9%	121.7	3.3%	125.8	3.4%	130.5	3.7%	135.8	4.1%
Renewable Energy	Photovoltaic	1,655.7	7.0%	1,773.4	7.1%	1,927.6	8.7%	2,109.3	9.4%	2,327.4	10.3%
Renewable Energy	Renewable Energy General Consultancy	95.9	2.8%	98.9	3.1%	102.1	3.2%	105.6	3.5%	109.7	3.8%
Renewable Energy	Wave & Tidal	13.0	6.2%	13.8	6.6%	14.8	7.4%	16.1	8.4%	17.6	9.2%
Renewable Energy	Wind	2,895.3	7.2%	3,116.8	7.7%	3,396.5	9.0%	3,732.8	9.9%	4,141.7	11.0%
Total		**28,499.9**	**6.6%**	**30,436.4**	**6.8%**	**32,983.1**	**8.4%**	**36,016.2**	**9.2%**	**39,697.3**	**10.2%**

Table 10a: 2007/08 to 2012/13 UK - LCEGS Level 2 Number of Companies and Growth Summary Table

UK													
Level 1	**Level 2**	**# Comp. 2007/08**	**Growth 2007/08**	**# Comp. 2008/09**	**Growth 2008/09**	**# Comp. 2009/10**	**Growth 2009/10**	**# Comp. 2010/11**	**Growth 2010/11**	**# Comp. 2011/12**	**Growth 2011/12**	**# Comp. 2012/13**	**Growth 2012/13**
Environmental	Air Pollution	457	-	466	1.9%	475	2.0%	485	2.0%	495	2.1%	506	2.2%
Environmental	Contaminated Land Reclamation & Remediation	395	-	405	2.5%	416	2.6%	427	2.7%	439	2.8%	452	2.9%
Environmental	Environmental Consultancy and Related Services	330	-	340	3.0%	350	3.1%	361	3.2%	373	3.3%	386	3.5%
Environmental	Environmental Monitoring, Instrumentation and Analysis	62	-	64	3.3%	66	3.5%	69	3.6%	71	3.6%	74	3.9%
Environmental	Marine Pollution Control	49	-	50	3.3%	52	3.4%	54	3.5%	56	3.7%	58	3.8%
Environmental	Noise & Vibration Control	89	-	92	3.6%	96	3.8%	99	3.8%	103	4.0%	108	4.2%
Environmental	Recovery and Recycling	2,760	-	2,846	3.1%	2,937	3.2%	3,035	3.3%	3,144	3.6%	3,261	3.7%
Environmental	Waste Management	2,060	-	2,112	2.5%	2,167	2.6%	2,225	2.7%	2,288	2.8%	2,354	2.9%
Environmental	Water Supply and Waste Water Treatment	3,524	-	3,579	1.6%	3,637	1.6%	3,697	1.7%	3,760	1.7%	3,827	1.8%
Low Carbon	Additional Energy Sources	502	-	520	3.6%	539	3.7%	560	3.9%	582	3.9%	606	4.2%
Low Carbon	Alternative Fuel Vehicle	5,214	-	5,400	3.6%	5,608	3.8%	5,831	4.0%	6,067	4.1%	6,315	4.1%
Low Carbon	Alternative Fuels	6,279	-	6,603	5.2%	6,961	5.4%	7,341	5.5%	7,765	5.8%	8,199	5.6%
Low Carbon	Building Technologies	5,274	-	5,506	4.4%	5,754	4.5%	6,015	4.5%	6,308	4.9%	6,620	4.9%
Low Carbon	Carbon Capture & Storage	203	-	209	3.1%	216	3.3%	224	3.3%	231	3.5%	240	3.7%
Low Carbon	Carbon Finance	1,401	-	1,517	8.3%	1,648	8.6%	1,791	8.7%	1,950	8.9%	2,157	10.6%
Low Carbon	Energy Management	1,069	-	1,104	3.2%	1,139	3.3%	1,178	3.4%	1,219	3.5%	1,263	3.6%
Low Carbon	Nuclear Power	-	-	-	-	1,751	-	1,784	1.9%	1,821	2.1%	1,865	2.4%
Renewable Energy	Biomass	1,948	-	2,030	4.3%	2,120	4.4%	2,218	4.6%	2,325	4.8%	2,444	5.1%
Renewable Energy	Geothermal	3,651	-	3,821	4.7%	4,004	4.8%	4,199	4.9%	4,418	5.2%	4,661	5.5%
Renewable Energy	Hydro	235	-	241	2.5%	247	2.6%	254	2.7%	261	2.8%	269	2.9%
Renewable Energy	Photovoltaic	1,630	-	1,724	5.8%	1,827	6.0%	1,939	6.1%	2,060	6.3%	2,197	6.6%
Renewable Energy	Renewable Energy General Consultancy	207	-	213	2.5%	218	2.6%	224	2.7%	230	2.7%	237	3.0%
Renewable Energy	Wave & Tidal	26	-	27	5.2%	29	5.3%	30	5.6%	32	5.7%	34	6.0%
Renewable Energy	Wind	4,131	-	4,397	6.5%	4,691	6.7%	5,020	7.0%	5,391	7.4%	5,812	7.8%
Total		**41,496**	-	**43,267**	**4.3%**	**46,950**	**8.5%**	**49,060**	**4.5%**	**51,392**	**4.8%**	**53,942**	**5.0%**

Table 10b: 2013/14 to 2017/18 UK - LCEGS Level 2 Number of Companies and Growth Summary Table

UK											
Level 1	**Level 2**	**# Comp. 2013/14**	**Growth 2013/14**	**# Comp. 2014/15**	**Growth 2014/15**	**# Comp. 2015/16**	**Growth 2015/16**	**# Comp. 2016/17**	**Growth 2016/17**	**# Comp. 2017/18**	**Growth 2017/18**
Environmental	Air Pollution	518	2.3%	530	2.4%	544	2.6%	559	2.8%	575	2.9%
Environmental	Contaminated Land Reclamation & Remediation	465	3.1%	480	3.2%	497	3.5%	515	3.7%	535	3.8%
Environmental	Environmental Consultancy and Related Services	400	3.6%	415	3.7%	432	4.1%	451	4.5%	472	4.5%
Environmental	Environmental Monitoring, Instrumentation and Analysis	77	3.9%	80	4.2%	84	4.5%	88	5.1%	93	5.2%
Environmental	Marine Pollution Control	60	4.0%	63	4.2%	66	4.6%	69	4.8%	72	4.8%
Environmental	Noise & Vibration Control	113	4.4%	118	4.6%	123	5.0%	130	5.6%	138	5.6%
Environmental	Recovery and Recycling	3,392	4.0%	3,535	4.2%	3,698	4.6%	3,884	5.0%	4,083	5.1%
Environmental	Waste Management	2,426	3.1%	2,504	3.2%	2,592	3.5%	2,689	3.7%	2,791	3.8%
Environmental	Water Supply and Waste Water Treatment	3,899	1.9%	3,977	2.0%	4,063	2.2%	4,161	2.4%	4,262	2.4%
Low Carbon	Additional Energy Sources	632	4.3%	659	4.3%	690	4.7%	725	5.1%	762	5.1%
Low Carbon	Alternative Fuel Vehicle	6,586	4.3%	6,879	4.4%	7,209	4.8%	7,581	5.2%	7,978	5.2%
Low Carbon	Alternative Fuels	8,708	6.2%	9,261	6.4%	9,901	6.9%	10,644	7.5%	11,446	7.5%
Low Carbon	Building Technologies	6,959	5.1%	7,337	5.4%	7,773	5.9%	8,275	6.5%	8,820	6.6%
Low Carbon	Carbon Capture & Storage	249	3.8%	259	3.8%	269	4.2%	282	4.6%	295	4.6%
Low Carbon	Carbon Finance	2,376	10.2%	2,631	10.7%	2,933	11.5%	3,333	13.7%	3,823	14.7%
Low Carbon	Energy Management	1,311	3.8%	1,364	4.0%	1,424	4.4%	1,491	4.8%	1,564	4.8%
Low Carbon	Nuclear Power	1,915	2.7%	1,974	3.1%	2,041	3.4%	2,116	3.7%	2,195	3.7%
Renewable Energy	Biomass	2,574	5.3%	2,716	5.5%	2,883	6.1%	3,073	6.6%	3,283	6.8%
Renewable Energy	Geothermal	4,926	5.7%	5,228	6.1%	5,579	6.7%	5,976	7.1%	6,412	7.3%
Renewable Energy	Hydro	277	3.0%	286	3.2%	296	3.5%	307	3.8%	319	3.8%
Renewable Energy	Photovoltaic	2,353	7.1%	2,526	7.4%	2,732	8.1%	2,968	8.6%	3,229	8.8%
Renewable Energy	Renewable Energy General Consultancy	244	2.9%	251	3.1%	260	3.3%	269	3.7%	279	3.7%
Renewable Energy	Wave & Tidal	36	6.4%	38	6.7%	41	7.4%	44	7.1%	47	7.2%
Renewable Energy	Wind	6,275	8.0%	6,806	8.5%	7,440	9.3%	8,176	9.9%	9,006	10.2%
Total		**56,770**	**5.2%**	**59,916**	**5.5%**	**63,571**	**6.1%**	**67,807**	**6.7%**	**72,478**	**6.9%**

Table 11a: 2007/08 to 2012/13 London - LCEGS Level 2 Number of Companies and Growth Summary Table

London													
Level 1	**Level 2**	**# Comp. 2007/08**	**Growth 2007/08**	**# Comp. 2008/09**	**Growth 2008/09**	**# Comp. 2009/10**	**Growth 2009/10**	**# Comp. 2010/11**	**Growth 2010/11**	**# Comp. 2011/12**	**Growth 2011/12**	**# Comp. 2012/13**	**Growth 2012/13**
Environmental	Air Pollution	32	-	32	0.0%	32	0.0%	32	-0.2%	31	-1.7%	32	1.6%
Environmental	Contaminated Land Reclamation & Remediation	75	-	75	0.0%	75	0.0%	75	-0.1%	75	-0.2%	77	3.3%
Environmental	Environmental Consultancy and Related Services	99	-	99	0.0%	99	0.0%	99	0.2%	99	-0.3%	102	2.9%
Environmental	Environmental Monitoring, Instrumentation and Analysis	12	-	12	0.0%	12	0.0%	12	-2.6%	12	-0.2%	12	3.6%
Environmental	Marine Pollution Control	7	-	7	0.0%	7	0.0%	7	-1.1%	7	0.5%	7	3.8%
Environmental	Noise & Vibration Control	49	-	49	0.0%	49	0.0%	49	-0.6%	49	-0.2%	50	3.8%
Environmental	Recovery and Recycling	396	-	391	-1.3%	393	0.5%	394	0.3%	395	0.2%	407	3.1%
Environmental	Waste Management	475	-	476	0.2%	480	0.8%	481	0.2%	481	0.0%	493	2.5%
Environmental	Water Supply and Waste Water Treatment	654	-	640	-2.1%	660	3.1%	656	-0.6%	658	0.3%	669	1.6%
Low Carbon	Additional Energy Sources	65	-	63	-3.1%	62	-1.6%	62	-0.6%	62	0.5%	64	3.8%
Low Carbon	Alternative Fuel Vehicle	598	-	623	4.2%	573	-8.0%	581	1.4%	572	-1.6%	595	4.2%
Low Carbon	Alternative Fuels	1,013	-	967	-4.5%	818	-15.4%	823	0.6%	814	-1.1%	853	4.7%
Low Carbon	Building Technologies	887	-	876	-1.2%	920	5.0%	923	0.3%	929	0.7%	972	4.6%
Low Carbon	Carbon Capture & Storage	30	-	29	-3.3%	29	0.0%	29	-0.6%	29	0.8%	30	3.3%
Low Carbon	Carbon Finance	2,497	-	2,588	3.6%	1,885	-27.2%	1,899	0.8%	1,911	0.6%	2,029	6.2%
Low Carbon	Energy Management	185	-	185	0.0%	181	-2.2%	183	1.1%	183	0.0%	189	3.4%
Low Carbon	Nuclear Power	-	-	-	-	172	-	173	0.6%	172	-0.6%	176	2.5%
Renewable Energy	Biomass	436	-	444	1.8%	437	-1.6%	438	0.2%	439	0.3%	460	4.7%
Renewable Energy	Geothermal	983	-	953	-3.1%	928	-2.6%	930	0.2%	927	-0.3%	973	5.0%
Renewable Energy	Hydro	59	-	58	-1.7%	59	1.7%	59	0.4%	59	-0.1%	61	2.9%
Renewable Energy	Photovoltaic	447	-	460	2.9%	421	-8.5%	419	-0.5%	420	0.2%	446	6.3%
Renewable Energy	Renewable Energy General Consultancy	31	-	33	6.5%	29	-12.1%	29	0.3%	29	-0.5%	30	2.8%
Renewable Energy	Wave & Tidal	8	-	8	0.0%	8	0.0%	8	-0.4%	8	-0.8%	8	5.4%
Renewable Energy	Wind	939	-	940	0.1%	884	-6.0%	886	0.3%	883	-0.3%	936	5.9%
Total		**9,977**	-	**10,008**	**0.3%**	**9,213**	**-7.9%**	**9,246**	**0.4%**	**9,242**	**0.0%**	**9,672**	**4.7%**

Table 11b: 2013/14 to 2017/18 London - LCEGS Level 2 Number of Companies and Growth Summary Table

London											
Level 1	**Level 2**	**# Comp. 2013/14**	**Growth 2013/14**	**# Comp. 2014/15**	**Growth 2014/15**	**# Comp. 2015/16**	**Growth 2015/16**	**# Comp. 2016/17**	**Growth 2016/17**	**# Comp. 2017/18**	**Growth 2017/18**
Environmental	Air Pollution	32	2.0%	33	1.9%	34	2.1%	35	2.1%	35	2.3%
Environmental	Contaminated Land Reclamation & Remediation	80	3.7%	83	4.1%	87	4.3%	91	4.6%	96	5.0%
Environmental	Environmental Consultancy and Related Services	105	3.3%	109	3.3%	113	3.8%	117	4.1%	122	4.4%
Environmental	Environmental Monitoring, Instrumentation and Analysis	13	4.6%	13	4.7%	14	5.5%	15	5.9%	16	6.3%
Environmental	Marine Pollution Control	8	4.6%	8	6.1%	8	5.3%	9	5.9%	10	6.3%
Environmental	Noise & Vibration Control	53	4.3%	55	4.6%	58	5.0%	61	5.5%	65	5.9%
Environmental	Recovery and Recycling	422	3.7%	439	3.9%	457	4.2%	478	4.6%	502	4.9%
Environmental	Waste Management	507	2.8%	523	3.1%	539	3.1%	557	3.3%	577	3.5%
Environmental	Water Supply and Waste Water Treatment	682	1.9%	695	1.9%	708	1.9%	723	2.0%	738	2.1%
Low Carbon	Additional Energy Sources	67	3.8%	70	4.8%	73	4.4%	77	4.8%	80	5.1%
Low Carbon	Alternative Fuel Vehicle	622	4.5%	649	4.4%	684	5.3%	723	5.8%	769	6.4%
Low Carbon	Alternative Fuels	900	5.5%	954	6.0%	1,017	6.6%	1,090	7.2%	1,176	7.9%
Low Carbon	Building Technologies	1,021	5.0%	1,076	5.4%	1,139	5.9%	1,213	6.5%	1,298	7.0%
Low Carbon	Carbon Capture & Storage	31	3.5%	32	3.9%	34	4.0%	35	4.2%	37	4.5%
Low Carbon	Carbon Finance	2,306	13.6%	2,490	8.0%	2,834	13.8%	3,256	14.9%	3,802	16.8%
Low Carbon	Energy Management	197	4.1%	205	4.1%	215	4.7%	226	5.2%	238	5.6%
Low Carbon	Nuclear Power	183	4.0%	191	4.2%	199	4.7%	210	5.1%	221	5.4%
Renewable Energy	Biomass	483	5.0%	510	5.6%	541	6.1%	578	6.9%	622	7.5%
Renewable Energy	Geothermal	1,027	5.5%	1,091	6.2%	1,163	6.6%	1,246	7.2%	1,345	7.9%
Renewable Energy	Hydro	63	3.5%	66	4.0%	68	3.9%	71	4.3%	74	4.7%
Renewable Energy	Photovoltaic	476	6.6%	507	6.5%	547	8.0%	594	8.6%	650	9.3%
Renewable Energy	Renewable Energy General Consultancy	31	2.8%	32	3.1%	33	3.1%	34	3.2%	35	3.5%
Renewable Energy	Wave & Tidal	9	5.3%	9	5.9%	10	6.2%	11	6.7%	11	7.2%
Renewable Energy	Wind	999	6.8%	1,071	7.1%	1,159	8.2%	1,263	9.0%	1,388	9.9%
Total		**10,314**	**6.6%**	**10,909**	**5.8%**	**11,733**	**7.5%**	**12,712**	**8.3%**	**13,906**	**9.4%**

Table 12a: 2007/08 to 2012/13 UK - LCEGS Level 2 Number of Employees and Growth Summary Table

UK													
Level 1	**Level 2**	**# Emp. 2007/08**	**Growth 2007/08**	**# Emp. 2008/09**	**Growth 2008/09**	**# Emp. 2009/10**	**Growth 2009/10**	**# Emp. 2010/11**	**Growth 2010/11**	**# Emp. 2011/12**	**Growth 2011/12**	**# Emp. 2012/13**	**Growth 2012/13**
Environmental	Air Pollution	8,169	-	8,325	1.9%	8,489	2.0%	8,658	2.0%	8,841	2.1%	9,036	2.2%
Environmental	Contaminated Land Reclamation & Remediation	7,129	-	7,308	2.5%	7,499	2.6%	7,701	2.7%	7,917	2.8%	8,147	2.9%
Environmental	Environmental Consultancy and Related Services	6,027	-	6,204	2.9%	6,392	3.0%	6,590	3.1%	6,810	3.3%	7,051	3.5%
Environmental	Environmental Monitoring, Instrumentation and Analysis	1,226	-	1,264	3.2%	1,305	3.2%	1,349	3.3%	1,394	3.3%	1,444	3.6%
Environmental	Marine Pollution Control	850	-	880	3.5%	912	3.6%	945	3.7%	982	3.9%	1,022	4.1%
Environmental	Noise & Vibration Control	1,613	-	1,670	3.5%	1,730	3.6%	1,793	3.7%	1,862	3.8%	1,937	4.0%
Environmental	Recovery and Recycling	46,207	-	47,634	3.1%	49,160	3.2%	50,772	3.3%	52,559	3.5%	54,524	3.7%
Environmental	Waste Management	38,034	-	39,013	2.6%	40,021	2.6%	41,105	2.7%	42,256	2.8%	43,465	2.9%
Environmental	Water Supply and Waste Water Treatment	64,232	-	65,243	1.6%	66,310	1.6%	67,423	1.7%	68,587	1.7%	69,831	1.8%
Low Carbon	Additional Energy Sources	9,131	-	9,455	3.6%	9,800	3.7%	10,176	3.8%	10,570	3.9%	11,002	4.1%
Low Carbon	Alternative Fuel Vehicle	83,356	-	86,504	3.8%	89,860	3.9%	93,450	4.0%	97,311	4.1%	101,410	4.2%
Low Carbon	Alternative Fuels	108,168	-	113,790	5.2%	119,962	5.4%	126,579	5.5%	134,030	5.9%	141,566	5.6%
Low Carbon	Building Technologies	88,019	-	91,850	4.4%	95,930	4.4%	100,223	4.5%	105,024	4.8%	110,143	4.9%
Low Carbon	Carbon Capture & Storage	3,818	-	3,939	3.2%	4,067	3.2%	4,203	3.3%	4,349	3.5%	4,512	3.8%
Low Carbon	Carbon Finance	17,285	-	18,745	8.4%	20,408	8.9%	22,215	8.9%	24,341	9.6%	26,934	10.7%
Low Carbon	Energy Management	19,215	-	19,801	3.0%	20,425	3.1%	21,084	3.2%	21,785	3.3%	22,542	3.5%
Low Carbon	Nuclear Power	-	-	-	-	32,150	-	32,782	2.0%	33,517	2.2%	34,352	2.5%
Renewable Energy	Biomass	38,012	-	39,689	4.4%	41,490	4.5%	43,465	4.8%	45,642	5.0%	48,083	5.3%
Renewable Energy	Geothermal	62,377	-	65,407	4.9%	68,711	5.1%	72,155	5.0%	76,141	5.5%	80,526	5.8%
Renewable Energy	Hydro	4,303	-	4,416	2.6%	4,533	2.7%	4,655	2.7%	4,788	2.8%	4,933	3.0%
Renewable Energy	Photovoltaic	29,990	-	31,665	5.6%	33,524	5.9%	35,505	5.9%	37,738	6.3%	40,166	6.4%
Renewable Energy	Renewable Energy General Consultancy	4,112	-	4,214	2.5%	4,324	2.6%	4,438	2.6%	4,557	2.7%	4,691	2.9%
Renewable Energy	Wave & Tidal	429	-	451	5.1%	474	5.3%	500	5.4%	528	5.6%	559	5.9%
Renewable Energy	Wind	66,166	-	70,472	6.5%	75,252	6.8%	80,569	7.1%	86,544	7.4%	93,398	7.9%
Total		**707,867**	**-**	**737,939**	**4.2%**	**802,728**	**8.8%**	**838,335**	**4.4%**	**878,072**	**4.7%**	**921,274**	**4.9%**

Table 12b: 2013/14 to 2017/18 UK - LCEGS Level 2 Number of Employees and Growth Summary Table

UK											
Level 1	**Level 2**	**# Emp. 2013/14**	**Growth 2013/14**	**# Emp. 2014/15**	**Growth 2014/15**	**# Emp. 2015/16**	**Growth 2015/16**	**# Emp. 2016/17**	**Growth 2016 /17**	**# Emp. 2017/18**	**Growth 2017/18**
Environmental	Air Pollution	9,241	2.3%	9,460	2.4%	9,704	2.6%	10,206	5.2%	10,502	2.9%
Environmental	Contaminated Land Reclamation & Remediation	8,396	3.1%	8,659	3.1%	8,957	3.4%	9,505	6.1%	9,871	3.8%
Environmental	Environmental Consultancy and Related Services	7,304	3.6%	7,574	3.7%	7,881	4.1%	8,386	6.4%	8,760	4.5%
Environmental	Environmental Monitoring, Instrumentation and Analysis	1,498	3.7%	1,557	3.9%	1,624	4.3%	1,730	6.5%	1,812	4.8%
Environmental	Marine Pollution Control	1,064	4.2%	1,111	4.4%	1,165	4.9%	1,252	7.4%	1,318	5.2%
Environmental	Noise & Vibration Control	2,020	4.2%	2,109	4.4%	2,211	4.8%	2,370	7.2%	2,497	5.4%
Environmental	Recovery and Recycling	56,708	4.0%	59,096	4.2%	61,823	4.6%	66,572	7.7%	69,985	5.1%
Environmental	Waste Management	44,805	3.1%	46,243	3.2%	47,884	3.5%	50,228	4.9%	52,146	3.8%
Environmental	Water Supply and Waste Water Treatment	71,179	1.9%	72,631	2.0%	74,272	2.3%	77,184	3.9%	79,084	2.5%
Low Carbon	Additional Energy Sources	11,469	4.2%	11,956	4.3%	12,511	4.6%	13,414	7.2%	14,089	5.0%
Low Carbon	Alternative Fuel Vehicle	105,862	4.4%	110,616	4.5%	116,043	4.9%	125,773	8.4%	132,565	5.4%
Low Carbon	Alternative Fuels	150,603	6.4%	160,221	6.4%	171,356	6.9%	188,052	9.7%	202,279	7.6%
Low Carbon	Building Technologies	115,725	5.1%	121,913	5.3%	129,088	5.9%	140,539	8.9%	149,691	6.5%
Low Carbon	Carbon Capture & Storage	4,683	3.8%	4,863	3.8%	5,067	4.2%	5,397	6.5%	5,643	4.6%
Low Carbon	Carbon Finance	29,702	10.3%	33,071	11.3%	37,119	12.2%	42,165	13.6%	48,814	15.8%
Low Carbon	Energy Management	23,370	3.7%	24,276	3.9%	25,302	4.2%	27,059	6.9%	28,320	4.7%
Low Carbon	Nuclear Power	35,336	2.9%	36,495	3.3%	37,807	3.6%	36,843	-2.5%	38,384	4.2%
Renewable Energy	Biomass	50,726	5.5%	53,622	5.7%	57,091	6.5%	61,719	8.1%	66,119	7.1%
Renewable Energy	Geothermal	85,284	5.9%	90,733	6.4%	97,239	7.2%	105,962	9.0%	114,062	7.6%
Renewable Energy	Hydro	5,082	3.0%	5,245	3.2%	5,430	3.5%	5,722	5.4%	5,944	3.9%
Renewable Energy	Photovoltaic	42,935	6.9%	46,046	7.2%	49,690	7.9%	54,404	9.5%	59,020	8.5%
Renewable Energy	Renewable Energy General Consultancy	4,830	3.0%	4,976	3.0%	5,137	3.2%	5,392	5.0%	5,592	3.7%
Renewable Energy	Wave & Tidal	593	6.2%	632	6.4%	676	7.1%	746	10.3%	803	7.6%
Renewable Energy	Wind	101,078	8.2%	109,771	8.6%	120,389	9.7%	135,777	12.8%	149,883	10.4%
Total		**969,492**	**5.2%**	**1,022,874**	**5.5%**	**1,085,465**	**6.1%**	**1,176,396**	**8.4%**	**1,257,182**	**6.9%**

Table 13a: 2007/08 to 2012/13 London - LCEGS Level 2 Number of Employees and Growth Summary Table

London													
Level 1	**Level 2**	**# Emp. 2007/08**	**Growth 2007/08**	**# Emp. 2008/09**	**Growth 2008/09**	**# Emp. 2009/10**	**Growth 2009/10**	**# Emp. 2010/11**	**Growth 2010/11**	**# Emp. 2011/12**	**Growth 2011/12**	**# Emp. 2012/13**	**Growth 2012/13**
Environmental	Air Pollution	913	-	912	-0.1%	893	-2.1%	919	3.0%	916	-0.4%	934	2.0%
Environmental	Contaminated Land Reclamation & Remediation	724	-	729	0.7%	727	-0.3%	750	3.2%	748	-0.3%	769	2.9%
Environmental	Environmental Consultancy and Related Services	880	-	906	3.0%	886	-2.2%	910	2.8%	911	0.1%	938	3.0%
Environmental	Environmental Monitoring, Instrumentation and Analysis	167	-	174	4.2%	163	-6.3%	168	2.8%	169	0.7%	174	3.3%
Environmental	Marine Pollution Control	121	-	122	0.8%	118	-3.3%	121	2.4%	121	0.1%	125	3.4%
Environmental	Noise & Vibration Control	293	-	294	0.3%	290	-1.4%	300	3.3%	300	0.0%	311	3.8%
Environmental	Recovery and Recycling	6,629	-	6,613	-0.2%	6,558	-0.8%	6,759	3.1%	6,749	-0.2%	6,960	3.1%
Environmental	Waste Management	9,786	-	10,114	3.4%	9,848	-2.6%	10,102	2.6%	10,144	0.4%	10,402	2.5%
Environmental	Water Supply and Waste Water Treatment	13,034	-	12,909	-1.0%	13,568	5.1%	13,934	2.7%	13,907	-0.2%	14,138	1.7%
Low Carbon	Additional Energy Sources	1,166	-	1,108	-5.0%	1,233	11.3%	1,230	-0.2%	1,228	-0.1%	1,272	3.6%
Low Carbon	Alternative Fuel Vehicle	9,806	-	10,012	2.1%	8,947	-10.6%	9,300	3.9%	9,256	-0.5%	9,649	4.3%
Low Carbon	Alternative Fuels	19,878	-	19,277	-3.0%	19,051	-1.2%	19,326	1.4%	19,244	-0.4%	20,139	4.7%
Low Carbon	Building Technologies	16,135	-	16,077	-0.4%	15,616	-2.9%	16,074	2.9%	15,980	-0.6%	16,708	4.6%
Low Carbon	Carbon Capture & Storage	499	-	489	-2.0%	500	2.2%	500	0.0%	500	0.0%	514	2.9%
Low Carbon	Carbon Finance	21,714	-	22,656	4.3%	23,198	2.4%	23,538	1.5%	23,525	-0.1%	25,055	6.5%
Low Carbon	Energy Management	2,463	-	2,466	0.1%	2,431	-1.4%	2,507	3.1%	2,507	0.0%	2,591	3.3%
Low Carbon	Nuclear Power	-	-	-	-	4,306	-	4,284	-0.5%	4,281	-0.1%	4,388	2.5%
Renewable Energy	Biomass	8,500	-	8,329	-2.0%	8,324	-0.1%	8,591	3.2%	8,577	-0.2%	9,005	5.0%
Renewable Energy	Geothermal	18,174	-	17,602	-3.1%	17,929	1.9%	18,527	3.3%	18,553	0.1%	19,528	5.3%
Renewable Energy	Hydro	902	-	905	0.3%	873	-3.5%	901	3.2%	900	-0.1%	920	2.2%
Renewable Energy	Photovoltaic	9,238	-	9,426	2.0%	9,520	1.0%	9,890	3.9%	9,897	0.1%	10,528	6.4%
Renewable Energy	Renewable Energy General Consultancy	686	-	617	-10.1%	758	22.9%	753	-0.6%	754	0.1%	776	2.9%
Renewable Energy	Wave & Tidal	67	-	66	-1.5%	63	-4.5%	65	2.5%	65	0.2%	69	6.1%
Renewable Energy	Wind	14,178	-	14,784	4.3%	13,922	-5.8%	14,392	3.4%	14,443	0.4%	15,329	6.1%
Total		**155,953**	-	**156,587**	**0.4%**	**159,721**	**2.0%**	**163,840**	**2.6%**	**163,672**	**-0.1%**	**171,222**	**4.6%**

Table 13b: 2013/14 to 2017/18 London - LCEGS Level 2 Number of Employees and Growth Summary Table

London											
Level 1	**Level 2**	**# Emp. 2013/14**	**Growth 2013/14**	**# Emp. 2014/15**	**Growth 2014/15**	**# Emp. 2015/16**	**Growth 2015/16**	**# Emp. 2016/17**	**Growth 2016 /17**	**# Emp. 2017/18**	**Growth 2017/18**
Environmental	Air Pollution	955	2.2%	977	2.4%	1,004	2.7%	1,033	2.9%	1,064	3.1%
Environmental	Contaminated Land Reclamation & Remediation	795	3.4%	823	3.5%	857	4.1%	895	4.4%	937	4.7%
Environmental	Environmental Consultancy and Related Services	970	3.4%	1,002	3.3%	1,044	4.2%	1,091	4.5%	1,144	4.8%
Environmental	Environmental Monitoring, Instrumentation and Analysis	181	3.9%	188	3.9%	197	4.8%	208	5.2%	219	5.5%
Environmental	Marine Pollution Control	129	3.6%	135	3.9%	140	4.3%	147	4.7%	154	5.0%
Environmental	Noise & Vibration Control	325	4.4%	339	4.6%	358	5.4%	378	5.8%	402	6.2%
Environmental	Recovery and Recycling	7,224	3.8%	7,515	4.0%	7,863	4.6%	8,261	5.1%	8,711	5.4%
Environmental	Waste Management	10,696	2.8%	11,036	3.2%	11,409	3.4%	11,823	3.6%	12,275	3.8%
Environmental	Water Supply and Waste Water Treatment	14,401	1.9%	14,671	1.9%	14,988	2.2%	15,330	2.3%	15,690	2.3%
Low Carbon	Additional Energy Sources	1,320	3.8%	1,383	4.8%	1,446	4.5%	1,516	4.9%	1,594	5.2%
Low Carbon	Alternative Fuel Vehicle	10,132	5.0%	10,615	4.8%	11,278	6.2%	12,054	6.9%	12,971	7.6%
Low Carbon	Alternative Fuels	21,226	5.4%	22,500	6.0%	23,997	6.7%	25,720	7.2%	27,715	7.8%
Low Carbon	Building Technologies	17,547	5.0%	18,499	5.4%	19,656	6.3%	21,000	6.8%	22,556	7.4%
Low Carbon	Carbon Capture & Storage	530	3.1%	549	3.5%	569	3.7%	592	4.0%	617	4.2%
Low Carbon	Carbon Finance	28,271	12.8%	31,084	10.0%	35,893	15.5%	42,061	17.2%	50,169	19.3%
Low Carbon	Energy Management	2,696	4.1%	2,795	3.7%	2,934	5.0%	3,091	5.4%	3,269	5.7%
Low Carbon	Nuclear Power	4,563	4.0%	4,759	4.3%	4,992	4.9%	5,255	5.3%	5,551	5.6%
Renewable Energy	Biomass	9,490	5.4%	10,060	6.0%	10,748	6.8%	11,575	7.7%	12,542	8.4%
Renewable Energy	Geothermal	20,640	5.7%	21,982	6.5%	23,544	7.1%	25,381	7.8%	27,527	8.5%
Renewable Energy	Hydro	945	2.7%	976	3.3%	1,008	3.3%	1,044	3.6%	1,083	3.8%
Renewable Energy	Photovoltaic	11,218	6.6%	11,991	6.9%	12,977	8.2%	14,127	8.9%	15,479	9.6%
Renewable Energy	Renewable Energy General Consultancy	799	3.0%	826	3.3%	855	3.6%	888	3.8%	923	4.0%
Renewable Energy	Wave & Tidal	73	6.5%	78	6.3%	84	8.2%	92	9.0%	100	9.7%
Renewable Energy	Wind	16,411	7.1%	17,632	7.4%	19,209	8.9%	21,098	9.8%	23,380	10.8%
Total		**181,538**	**6.0%**	**192,416**	**6.0%**	**207,049**	**7.6%**	**224,659**	**8.5%**	**246,073**	**9.5%**

Appendix 2

London's Low Carbon Market Snapshot - 2019

London's Low Carbon and Environmental Goods and Services 2015/16 – 2017/18 Update Report

Executive Summary

London's Low Carbon and Environmental Goods and Services (LCEGS) sector was worth £39.7bn to London's economy in 2017/18, as indicated by the value of sales in the sector. These sales were generated by over 13,900 businesses that employed over 246,000 people in the sector in 2017/18.

Sales and growth
The Low Carbon and Environmental Goods and Services sector in London has continued to grow year on year since 2007/08. In 2007/08 total sales in the sector were worth £20.9bn, in 2014/15, the last report, they were worth £30.4bn and sales have now reached £39.7bn in 2017/18.

The sector in London grew by 9.2% during the financial year 2015/16 to 2016/17 and 10.2% during 2016/17 to 2017/18. Even when Carbon Finance is excluded from the sector the rest of the sector grew by 7.0% during 2015/16 and 7.8% during 2016/17 to 2017/18. This rate of growth is faster than the UK average for the same period and London's growth is forecast to continue at least at a similar rate until 2021/22.

The sector showed great resilience during the challenges of the economic downturn and it has continued to achieve annual growth rates greater than the UK economy as a whole. This reflects the increasing market opportunities that are being created by regulation, policy and customer demand for businesses operating in the Low Carbon and Environmental Goods and Services sector.

Employment
Employment in London's Low Carbon and Environmental Goods and Services sector in 2017/18 was 246,073, up from 192,416 in 2014/15. Annual growth rate in employment was 8.5% between 2015/16 and 2016/17 and 9.5% between 2016/17 and 2017/18. This rate of growth is faster than the UK average over the same period.

Companies
The number of companies in London's Low Carbon and Environmental Goods and Services sector in 2017/18 was 13,906, up from 10,909 in 2014/15. Annual growth rate in the number of companies was 8.3% between 2015/16 and 2016/17 and 9.4% between 2016/17 and 2017/18. This rate of growth is also faster than the UK average for the same period.

London's sub-sectors
In 2017/18 London's Low Carbon and Environmental Goods and Services sector was made up by the following proportions: Low Carbon 56%, Renewable Energy 31% and

Environmental 13%. This is similar to the composition in 2014/15 when it was: Low Carbon 53%, Renewable Energy 32% and Environmental 15%.

London's sub-sector strengths

The five largest sub-sectors in the Low Carbon and Environmental Goods and Services sector by sales account for 69% of the London total sales and are made up of:

- Carbon Finance (£12.77bn) - this includes Carbon finance trading houses and consultancies
- Wind (£4.14bn) – this includes control systems development and manufacture, drive train development, manufacture and systems integration and consulting houses
- Geothermal (£4.06bn) - this includes head office functions, systems and design and international consultancy
- Building Technologies (£3.28bn) - this includes head office functions, building systems design and consultancy and building systems providers and installers
- Alternative Fuels (£3.07bn) this includes R&D functions, alternative fuel providers and process implementation accounting.

The next six largest sub-sectors by sales account for a further 26% of London's total sales and are made up of:

- Photovoltaic (£2.33bn) - this includes head office functions and providers and installers
- Alternative Fuel Vehicle (£1.88bn) - this includes head office functions, prototype applications and vehicle sales
- Water Supply and Waste Water Treatment (£1.74bn) - this includes systems implementation, maintenance and development
- Biomass (£1.61bn) - this includes systems development and implementation and R&D
- Waste Management (£1.54bn) - this includes process development and new process implementation and consulting
- Recovery and Recycling (£1.22bn) – this includes waste collection, glass stock processing and paper feedstock processing

The Low Carbon and Environmental Goods and Services sector in London is slightly different to that in the rest of the UK due to the fact that the Carbon Finance sub-sector, the largest sub-sector in London, has 97% of its activity based within London and much of that is in the City of London.

Regional Comparison

The Low Carbon and Environmental Goods and Services sector in London accounts for 21% of sales, 19% of companies and 19% of employees in the UK, with the next largest regions being the South East, North West and East of England.

London's share of the UK LCEGS market varies between sub-sectors, from 97% of the Carbon Finance sub-sector, to 9% of the Contaminated Land sub-sector.

London has the highest market share in 13 sub-sectors: Carbon Finance (97%), Photovoltaic (26%), Geothermal (24%), Waste Management (23%), Noise and Vibration Control (21%), Hydro (20%), Biomass (18%), Water Supply and waste Water Treatment (18%), Renewable Consultancy (17%), Wind (16%), Environmental Consultancy (14%), Energy Management (13%) and Wave & Tidal (13%).

London has the second highest market share in 5 sub-sectors: Building Technologies (15%), Environmental Monitoring (14%), Marine Pollution Control (13%), Recovery and Recycling (12%) and Additional Energy Sources (11%).

The larger the percentage share of a sub-sector in a region, the higher the degree of supply chain localization in that sub-sector within that region. Highly localized supply chains offer a stronger opportunity for the development of the sub-sector along with closer partnerships and regional cooperation.

Sub-sector growth

London's five largest sub-sectors by sales have all enjoyed high levels of growth in sales, number of employees and number of companies between 2014/15 and 2017/18:

- Carbon Finance – sales have grown from £8.47bn to £12.77bn (51%), number of employees by 61% and number of companies by 53%
- Wind – sales have grown from £3.12bn to £4.14bn (33%), number of employees by 33% and number of companies by 30%
- Geothermal – sales have grown from £3.24bn to £4.06bn (25% increase), number of employees by 25% and number of companies by 23%
- Building Technologies – sales have grown from £2.67bn to £3.28bn (23% increase), number of employees by 22% and number of companies by 21%
- Alternative Fuels – sales have grown from £2.46bn to £3.07 (25% increase), number of employees by 23% and number of companies also by 23%

Exports

The value of exports in London's Low Carbon and Environmental Goods and Services sector in 2017/18 was £2.7bn, an increase from £2.3bn in 2014/15. This accounted for 20% of the UK's LCEGS exports in 2017/18 and is slightly less than London's 21% share of the overall UK LCEGS market.

London's LCEGS exports grew by 6.4% and 7.4% over the last three years which was slightly more than the UK average and also higher than the 2.1% and 2.5% growth seen during the 2012/13 to 2014/15 period of the previous report.

1. Introduction to the Low Carbon and Environmental Goods and Services (LCEGS)

This report presents data for the fiscal years 2015/16 to 2017/18. It provides an update to the existing datasets that have been produced for London's Low Carbon and Environmental Goods and Services (LCEGS) sector in previous analyses covering the fiscal years 2007/08 through to 2014/15. This has allowed a multi-year dataset to be created that provides real insight into how the sector has developed since 2007/08. Graphics for the whole times series, including Sales, Number of Companies and Number of Employees, for the Sector at Level 1 and Level 2 are available in the main body of this report.

The data used in this report is based upon the work and methodology used by kMatrix to provide datasets on the UK's LCEGS Sector for UK Government and that was reported annually by the Department for Business, Innovation and Skills (BIS) from 2008/09 to 2011/12.

The LCEGS sector has been defined using 24 sub-sectors (or Level 2 markets). These are grouped into three broad categories - Environmental, Renewable Energy and Low Carbon - the addition of the Renewable Energy and Low Carbon groupings illustrates the evolution of the current LCEGS sector definition from its original Environmental roots and reflects developments in the market as sectors evolve to address the environmental challenges that the world is facing.

Additional research published in 2015 by the Department for Business, Innovation and Skills (BIS) on the Low Carbon Economy and by the Office for National Statistics (ONS) on the Environmental Goods & Services has provided additional validation of the size, make-up and importance of activity related to Low Carbon, Renewable Energy and Environmental activities in the UK economy.

From 2017, the amended EU Regulation 691/2011 required that each Member State provides data compliant with the Eurostat definition of Environmental Goods and Services. It covers the output, employment, exports and value added generated in the production of goods and services that are used to measure, prevent, limit, minimise and correct environmental damage and manage natural resources in a sustainable way. The Office of National Statistics produced their 2015 Environmental Goods and Services Report in response to this update in the EU Regulation and they continue to evolve the methodology they have developed for producing this national level dataset.

The current LCEGS sector definition, used in this report, includes 2,800 product and service activities that are derived from sector supply chain activities (componentry & assemblies) and value chain activities (R&D, Supply & Training). A glossary of economic activities included for each sub-sector of LCEGS is included as Appendix 2 and a brief explanation of the LCEGS methodology as Appendix 3.

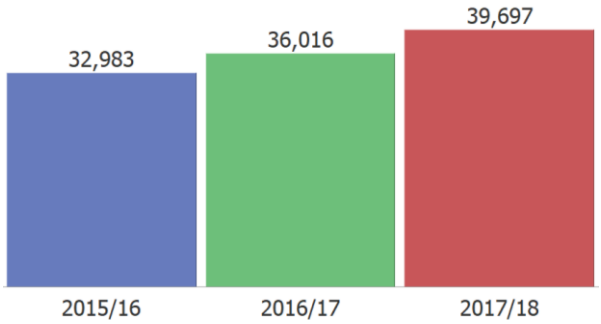
2. London's Low Carbon and Environmental Goods and Services (LCEGS) Analysis

This section of the report analyses London's LCEGS at Level 1 and Level 2. It also provides information at Level 3 and Level 4 to show the type of activities included in these sub-sectors.

2.1 LCEGS Compared by Year

In this section of the report London's LCEGS performance is compared for the last three years for the three key measures of Sales, Employment and Growth.

Figure 31: Sales 2015/16 to 2017/18 in £m

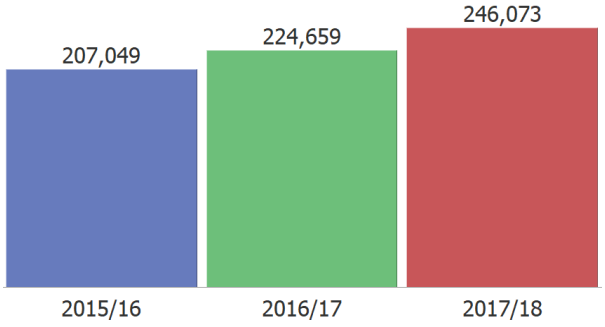


London's LCEGS sales in 2017/18 were £39.7bn, up from £30.4bn in 2014/15 (see previous report).

Annual sales growth in London's LCEGS was 8.5% from 2014/15 to 2015/16, 9.2% from 2015/16 to 2016/17 and 10.2% from 2016/17 to 2017/18.

In comparison UK sales growth in LCEGS was 7.2% and 7.4% respectively.

Figure 32: Employment 2015/16 to 2017/18

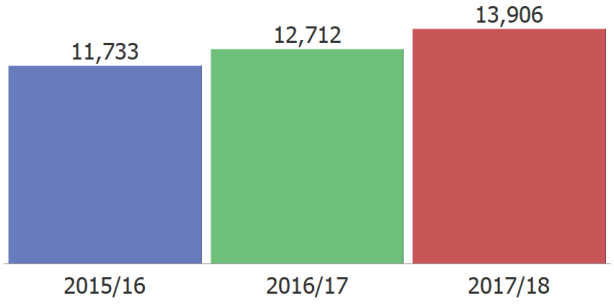


London's LCEGS employment in 2017/18 was 246,073, up from 192,416 in 2014/15.

Annual employment growth in London's LCEGS was 8.5% from 2015/16 to 2016/17 and 9.5% from 2016/17 to 2017/18.

In comparison UK employment growth in LCEGS was 8.4% and 6.9% respectively.

Figure 33: Companies 2015/16 to 2017/18



London's LCEGS company count in 2017/18 was 13,906, up from 10,909 in 2014/15.

Annual company growth in London's LCEGS was 8.3% from 2015/16 to 2016/17 and 9.4% from 2016/17 to 2017/18.

In comparison UK company growth in LCEGS was 6.7% and 6.9% respectively.

Growth in London has been higher across each of the three parameters between 2015/16 and 2017/8 when compared with the UK as a whole.

2.2 London's LCEGS at Level 1

The analysis in this section of the report focuses on the Level 1 and Level 2 split of LCEGS in London for each of the last three years.

Figure 34: Sales 2015/16 to 2017/18 in £m (Level 1)

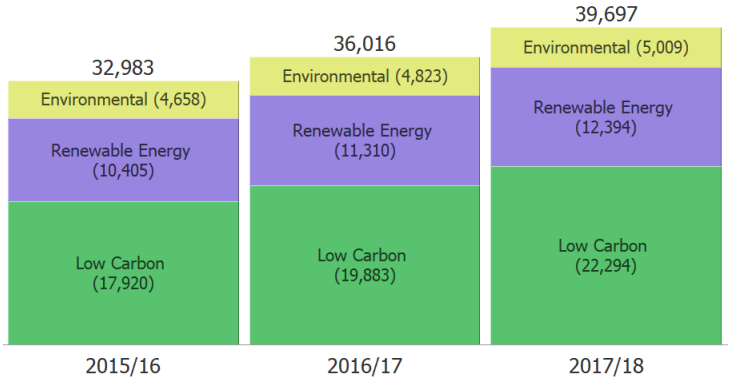


Figure 34 shows the three-year LCEGS sales split by Level 1.

In 2015/16 the split was 54% Low Carbon, 32% Renewable Energy and 14% Environmental. By 2017/18 this had changed slightly to 56%, 31% and 13% respectively.

This change is basically due to above average increases in the Carbon Finance sub-sector.

Figure 35: Employment 2015/16 to 2017/18 (Level 1)

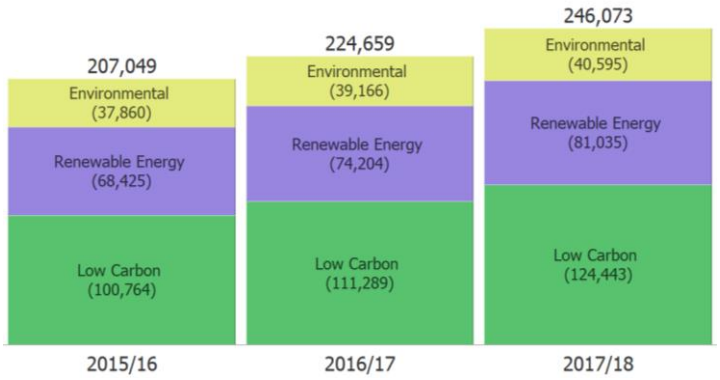


Figure 35 shows the three-year employment split by Level 1.

In 2015/16 the split was 49% Low Carbon, 33% Renewable Energy and 18% Environmental. By 2017/18 this had slightly changed to 51%, 33% and 16% respectively.

This change is also due to above average increases in the Carbon Finance sub-sector.

Figure 36: Companies 2015/16 to 2017/18 (Level 1)

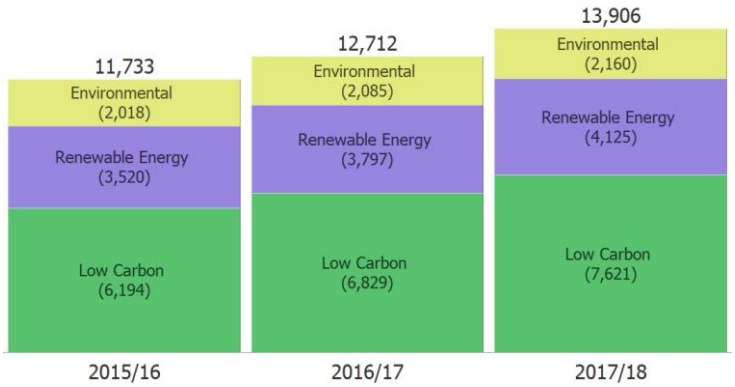


Figure 36 shows the three-year company split by Level 1.

In 2015/16 the split was 53% Low Carbon, 30% Renewable Energy and 17% Environmental. By 2017/18 this had also slightly changed to 55%, 30% and 16% respectively.

Once again this is due to above average increases in the Carbon Finance sub-sector.

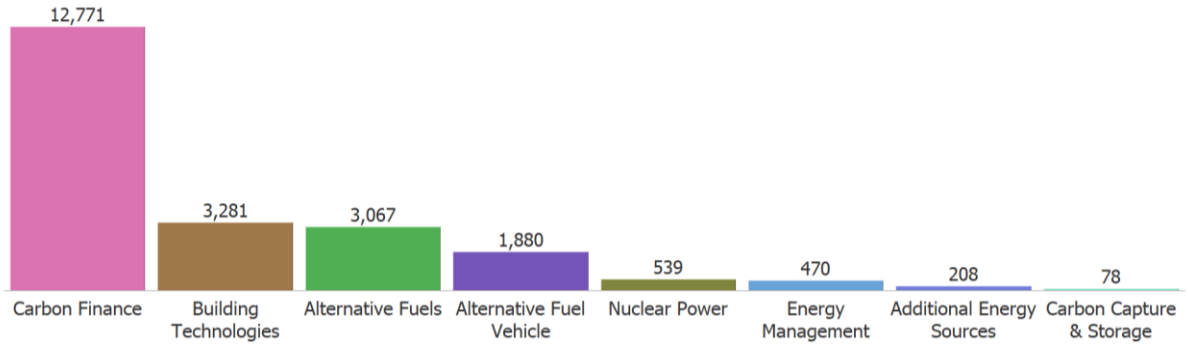
In 2017/18 UK LCEGS sales was split - Low Carbon 50%, Renewable Energy 33% and Environmental 16%. The difference in profile is mostly accounted for by the fact that Carbon Finance sub-sector, which is within Low Carbon, is the largest sub-sector in London's LCEGS and is still about 97% based in London.

2.3 London's LCEGS Level 1 - Low Carbon Market

In this section we look at the Low Carbon market in greater detail. Initially we split the market into eight further sub-sectors (Level 2) and then look at the highest performing Level 2 sub-sectors in more detail by highlighting activity happening within them at Level 3 and Level 4.

2.3.1 Low Carbon Market (Level 2)

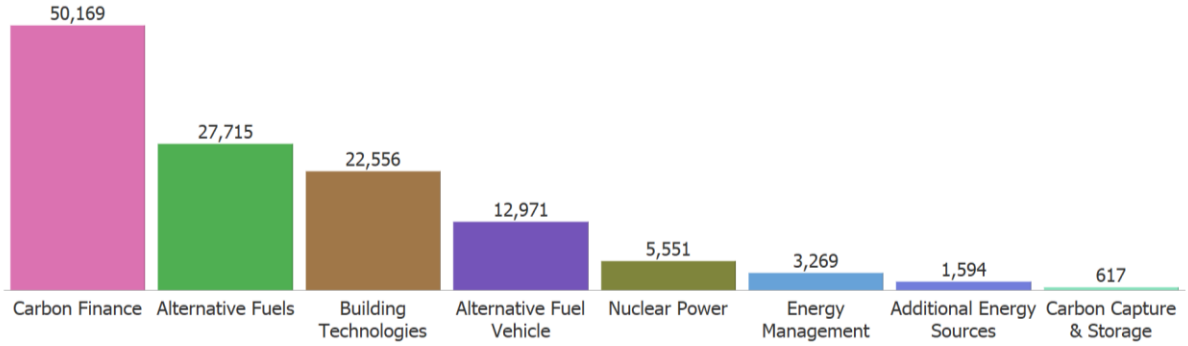
Figure 37: Sales 2017/18 in £m (Level 2)



Low Carbon is further sub-divided into eight sub-sectors, of which four account for 94% of sales (Figure 37). These four are made up of Carbon Finance 57%, Building Technologies 15%, Alternative Fuels 14% and Alternative Fuel Vehicles 8%.

Each of these four sub-sectors grew between 2014/15 and 2017/18: Carbon Finance from £8.47bn to £12.77bn; Building Technologies from £2.67bn to £3.28bn; Alternative Fuels from £2.46bn to £3.06 and Alternative Fuel Vehicles from £1.56bn to £1.88bn.

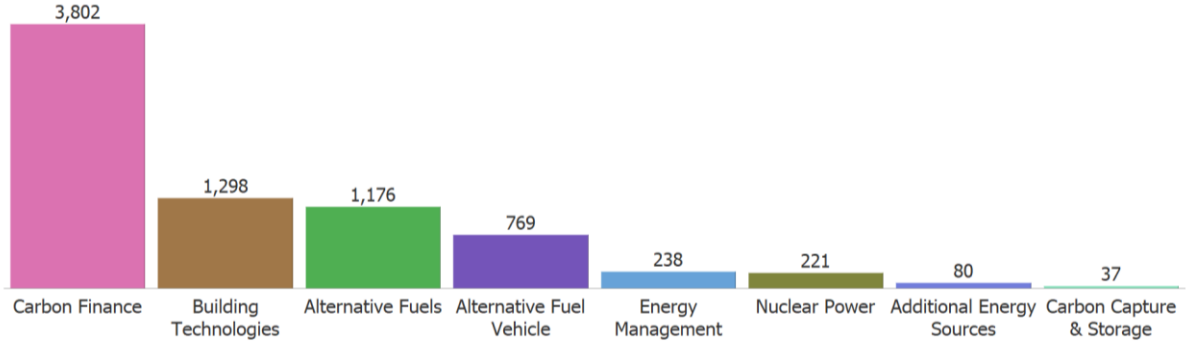
Figure 38: Employment 2017/18 (Level 2)



The same four sub-sectors account for 91% of employment (Figure 38). They are Carbon Finance 40%, Alternative Fuels 22%, Building Technologies 18% and Alternative Fuel Vehicles 10%.

Each of these four sub-sectors grew between 2014/15 and 2017/18: Carbon Finance from 31,100 to 50,169; Alternative Fuels from 22,500 to 27,715; Building Technologies from 18,500 to 22,556 and Alternative Fuel Vehicles from 10,600 to 12,971.

Figure 39: Companies 2017/18 (Level 2)

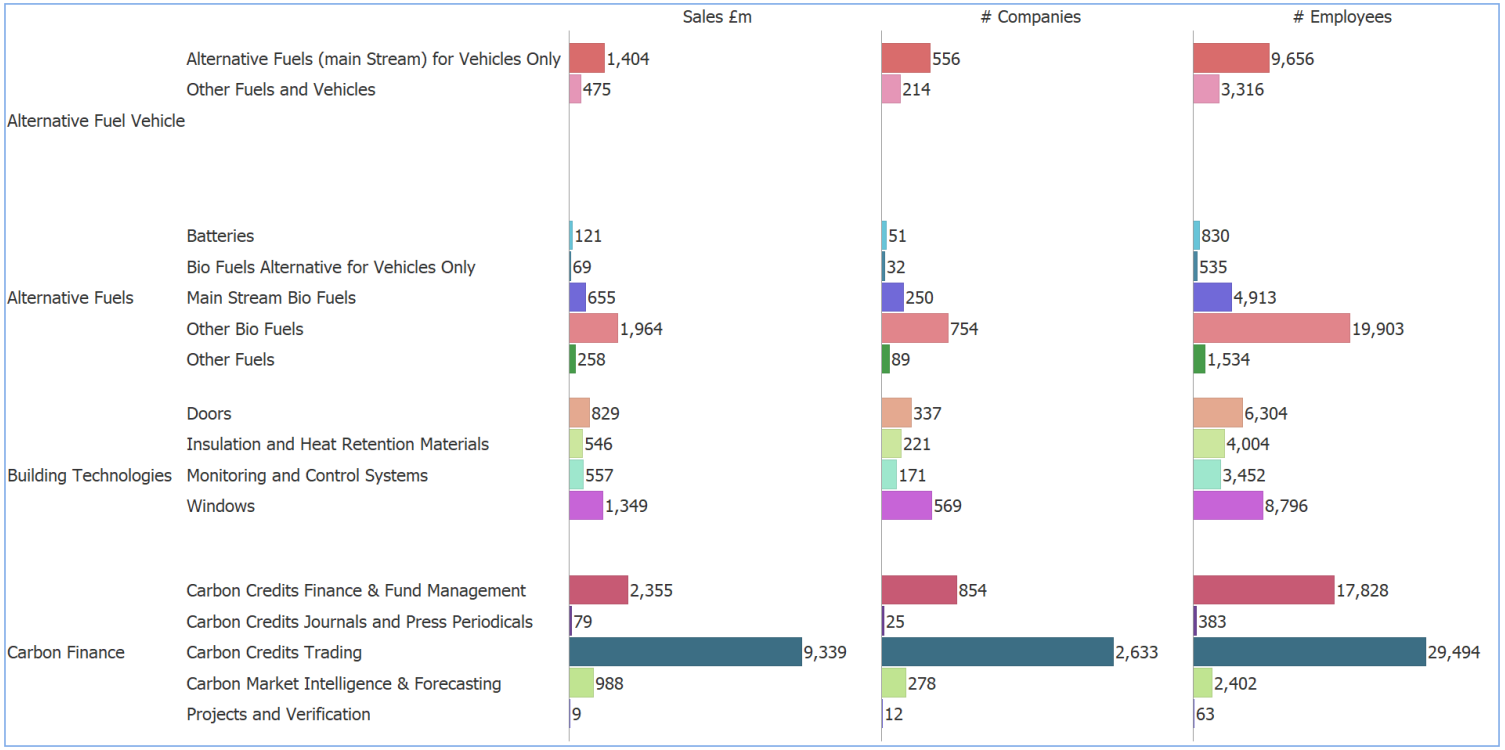


The same four sub-sectors again account for 92% of companies (Figure 39). They are Carbon Finance 50%, Building Technologies 17%, Alternative Fuels 15% and Alternative Fuel Vehicles 10%.

Each of these four sub-sectors grew between 2014/15 and 2017/18: Carbon Finance from 2,490 to 3,802; Building Technologies from 1,100 to 1,298; Alternative Fuels from 950 to 1,176 and Alternative Fuel Vehicles from 650 to 769.

2.3.2 Low Carbon Market at Level 3

Figure 40: Summary of selected metrics for 2017/18 for selected Low Carbon Level 2 sub-sectors at Level 3



The top four Level 2 sub-sectors for Low Carbon are Alternative Fuel Vehicle, Alternative Fuels, Building Technologies and Carbon Finance, making up 94% of the Low Carbon market in London. Figure 40 shows a summary of the Sales, Companies and Employees for these Level 2 sub-sectors, broken out into their Level 3 sub-sectors.

Carbon Finance is the largest Level 2 sub-sector and Carbon Credits Trading is the largest of the five Level 3 sub-sectors. Example companies in this sub-sector include carbon credits trading houses.

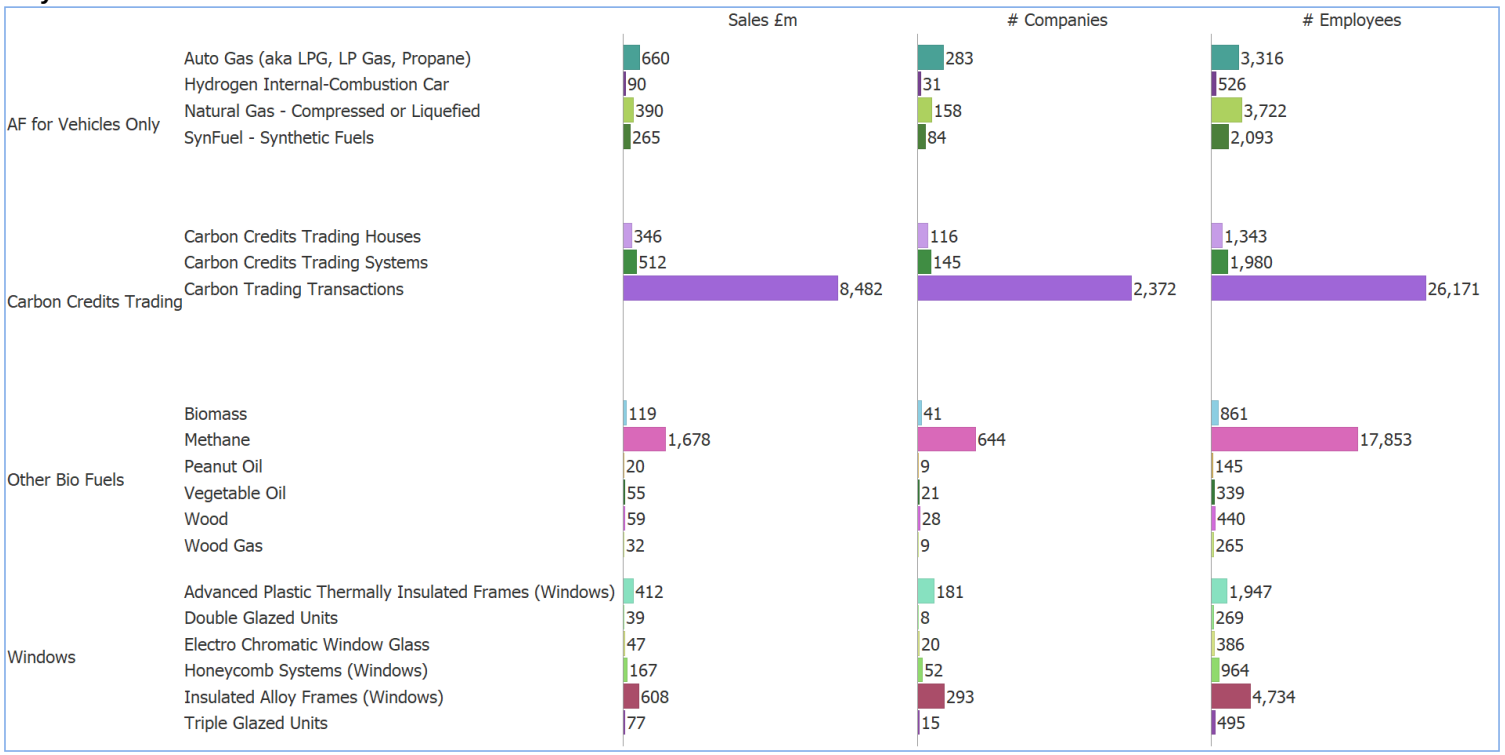
Building Technologies has four sub-sectors at Level 3, with the largest being Windows, making up 41% of the market. Example companies in this sub-sector would include window manufacturers, agents and installers.

Alternative Fuels has five sub-sectors at level 3, of which, Other Biofuels accounts for 64% of Sales. Example companies of this sub-sector would include process designers and consultancy, process implementation and sales and application development specialists.

Alternative Fuel Vehicles has only two sub-sectors at level 3, with Alternative Fuels (main stream) for Vehicles Only holding 75% of the market share. Example companies in this sub-sector would include selling agencies, alternative fuel development companies and consulting and applications development for vehicle conversion specialists.

2.3.3 Low Carbon Market at Level 4

Figure 41: Summary of selected metrics for 2017/18 for selected Low Carbon Level 3 sub-Sectors at Level 4



The top Level 3 sub-sectors for each Level 2 category within Low Carbon has been sub-divided into their component Level 4 sub-sectors in Figure 41.

Carbon Finance - Within the three Level 4 sub-sectors in Carbon Credits Trading, Carbon Trading Transactions is the dominant sub-sector holding 91% of the market at Level 3 and these relate to the carbon credit trading transactions performed by the carbon credits trading houses.

Building Technologies - Within the six Level 4 sub-sectors in Windows, the Insulated Alloy Frames (Windows) make up 45% of the sales and these companies design, manufacture and supply insulated alloy framed windows.

Alternative Fuels - Within the six Level 4 sub-sectors in Other Biofuels, Methane is clearly the most significant market making up 85% of the sales and these companies are involved in the production and supply of methane and the management of methane supply chains.

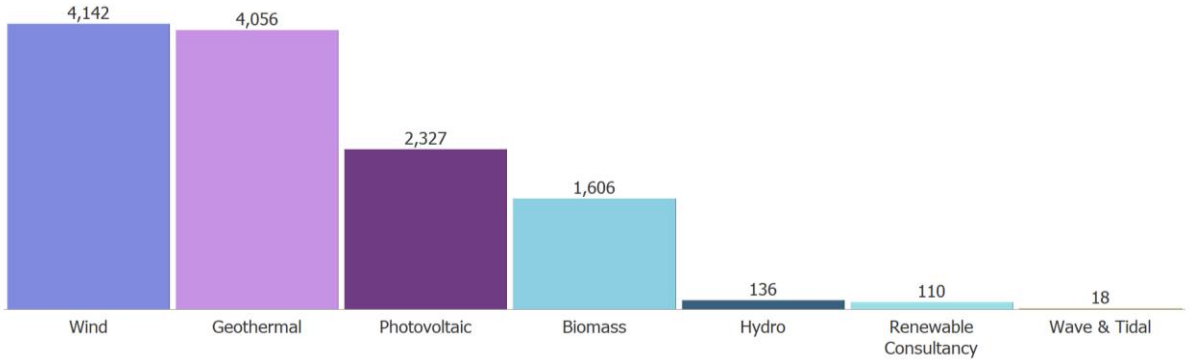
Alternative Fuel Vehicles – Within the four Level 4 sub-sectors in Alternative Fuels (main stream) for Vehicles Only, there is less obvious dominance with Auto Gas making up 47% of sales and Natural Gas making up 28% of sales, examples of these types of companies include supply chain management in particular and also include sales agencies and distributors.

2.4 London's LCEGS Level 1 - Renewable Energy Market

In this section we look at the Renewable Energy market in greater detail. Initially we split the market into eight further sub-sectors, Level 2, and then look at the highest performing Level 2 sub-sectors in more detail by highlighting activity happening within them at Level 3 and Level 4.

2.4.1 Renewable Energy Market at Level 2

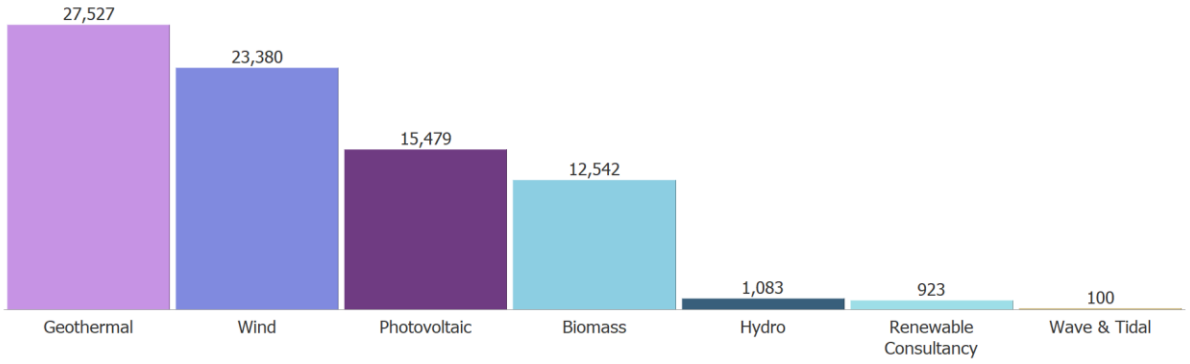
Figure 42: Sales 2017/18 in £m (Level 2)



Renewable Energy is then split into seven sub-sectors, of which four account for 98% of sales (Figure 42). These four are made up of Wind 33%, Geothermal 33%, Photovoltaic 19% and Biomass 13%.

Each of these four sub-sectors have grown between 2014/15 and 2017/18: Wind from £3.12bn to £4.14bn; Geothermal from £3.24bn to £4.05bn; Photovoltaic from £1.77bn to £2.32bn and Biomass from £1.27bn to £1.6bn.

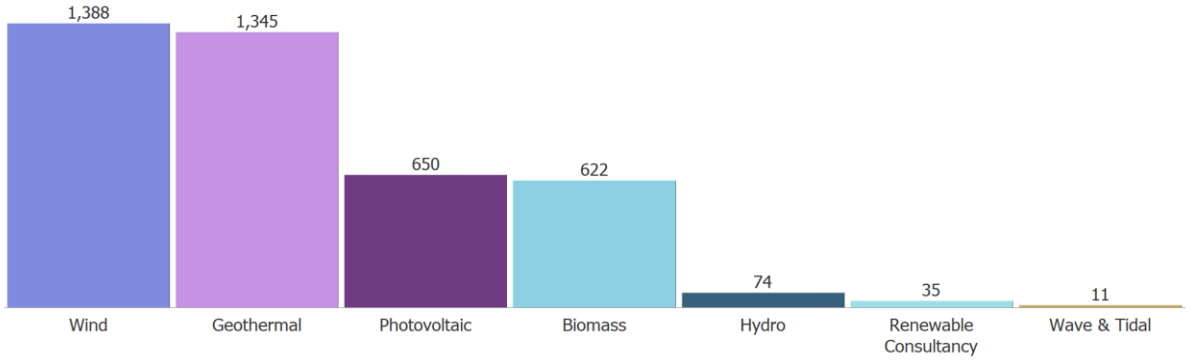
Figure 43: Employment 2017/18 (Level 2)



The same four sub-sectors account for 97% of employment (Figure 43). They are made up of Geothermal 34%, Wind 29%, Photovoltaic 19% and Biomass 15%.

Each of these four sub-sectors have grown between 2014/15 and 2017/18: Geothermal from 21,980 to 27,527; Wind from 17,630 to 23,380; Photovoltaic from 11,990 to 15,479 and Biomass from 10,060 to 12,542.

Figure 44: Companies 2014/ 15 (Level 2)

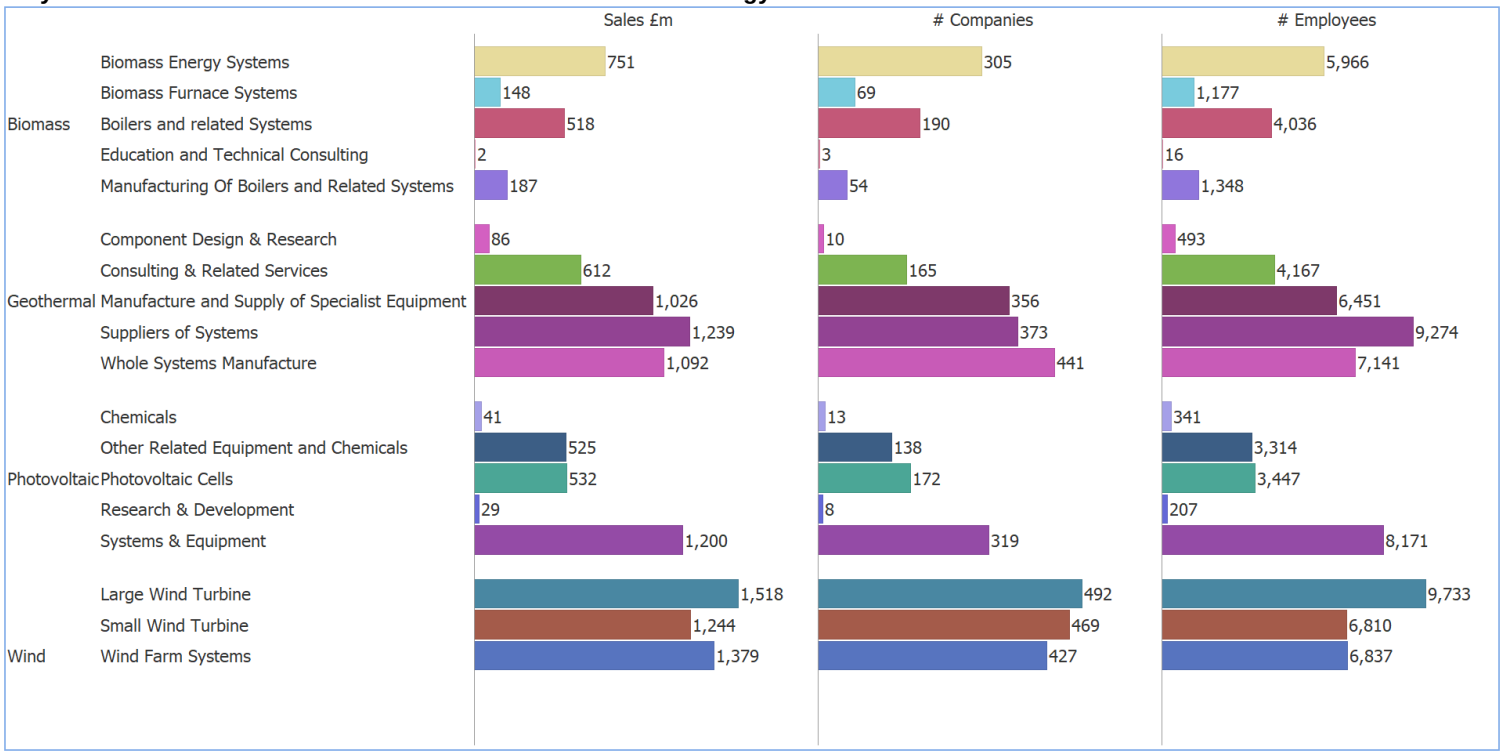


And the same four sub-sectors also account for 97% of companies (Figure 44). They are made up of Wind 34%, Geothermal 33%, Photovoltaic 16% and Biomass 15%.

Each of these four sub-sectors have grown between 2014/15 and 2017/18: Wind from 1,070 to 1,388; Geothermal from 1,090 to 1,345; Photovoltaic from 510 to 650 and Biomass from 510 to 622.

2.4.2 Renewable Energy Market at Level 3

Figure 45: Summary of selected metrics for 2017/18 for selected Renewable Energy Level 2 sub-sectors at Level 3



The top four Level 2 sub-sectors for Low Carbon are Wind, Geothermal, Photovoltaic and Biomass, making up 98% of the Renewable Energy market in London. Figure 45 shows a summary of the Sales, Companies and Employees for these Level 2 sub-sectors, broken out into their Level 3 sub-sectors.

Wind is the largest Level 2 sub-sector with 37% of sales and has three sub-sectors at Level 3, the largest being Large Wind Turbine which makes up 37% of sales in this market. Example companies include drive chain suppliers and maintenance services, systems integration services and power firming services.

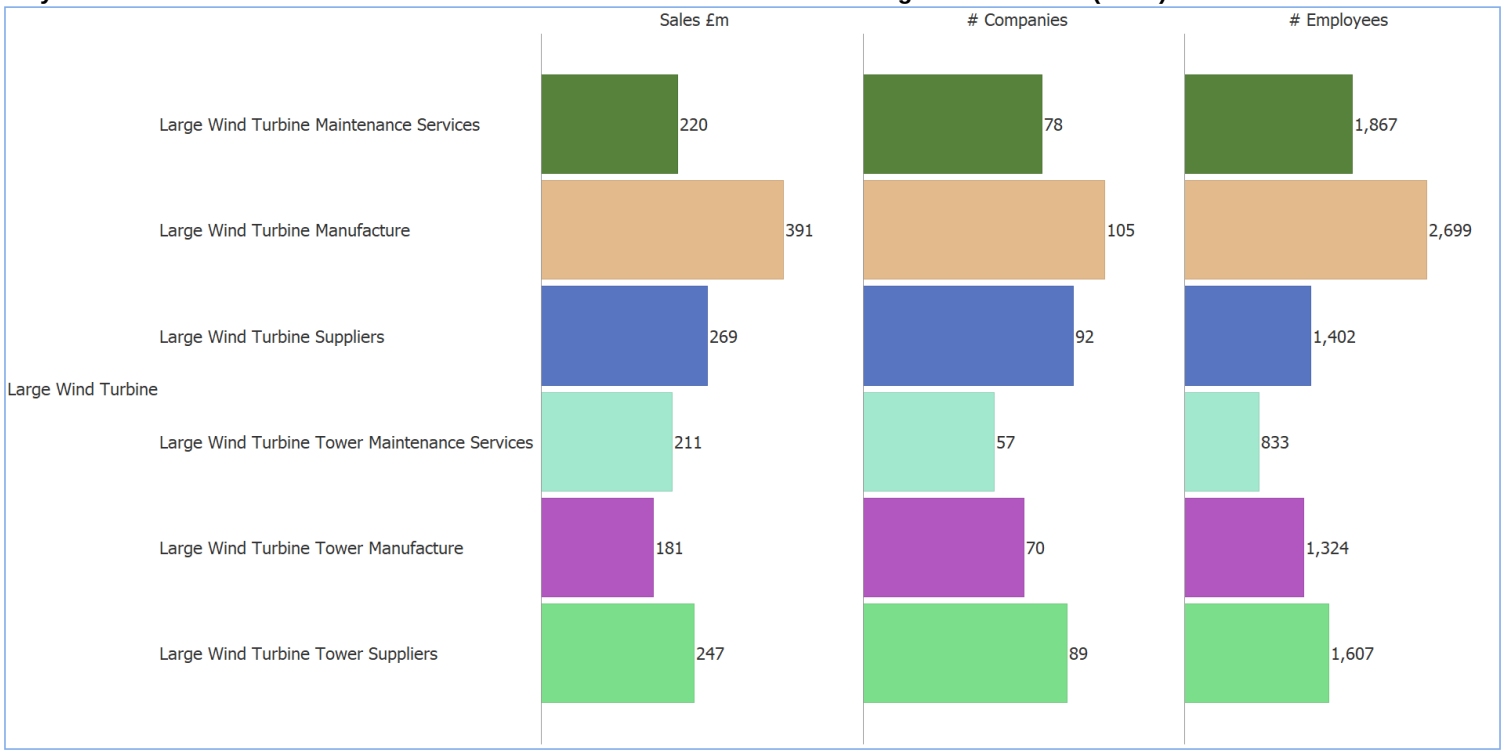
Geothermal has five sub-sectors at Level 3, the largest being Suppliers of Systems which makes up 31% of the sales in this market. Example companies include lateral geothermal systems providers and installers at the domestic and small commercial level and vertical control systems developers and suppliers.

Photovoltaic has five sub-sectors at level 3, the largest being Systems & Equipment which makes up 52% of sales in this market. Example companies include systems developers, suppliers and installers.

Biomass has five sub-sectors at level 3, the largest being Biomass Energy Systems which makes up 48% of the sales in this market, example companies include developers, installers and consultancies.

2.4.3 Renewable Energy Market at Level 4

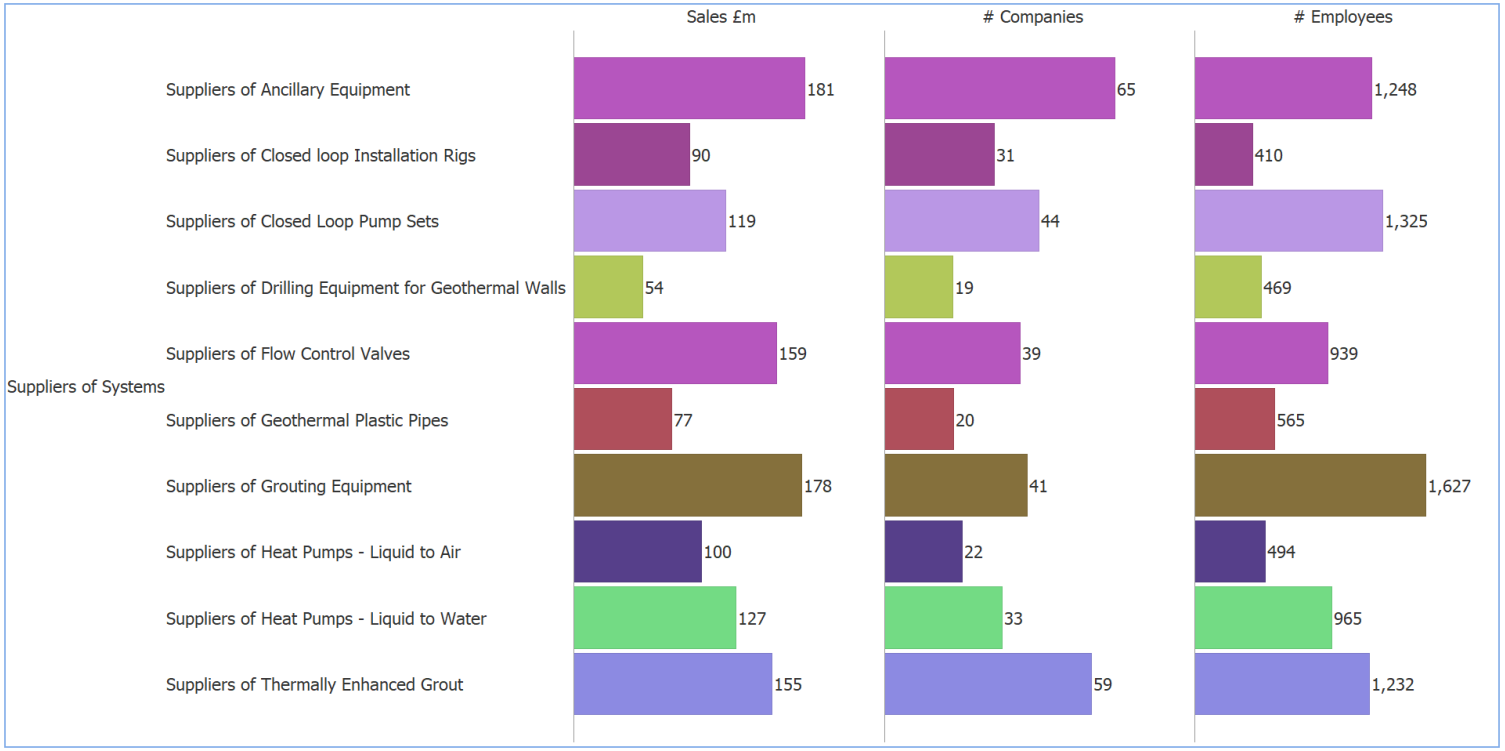
Figure 46: Summary of selected metrics for 2017/18 for the Low Carbon Level 3 sub-sector Large Wind Turbine (Wind) at Level 4



Wind – Within the six Level 4 sub-sectors in Large Wind Turbine sales are relatively evenly distributed across this Level 3 market but the top three sub-sectors account for 60% of sales and are made up of:

- Large Wind Turbine Manufacture making up 26% of the Level 3 market, example companies include drive chain and power firming systems manufacture, development and supply
- Large Wind Turbine Suppliers, 18%, with example companies including head office functions, suppliers and supply chain.
- Large Wind Turbine Tower Suppliers, 16%, which includes importers and installers of towers.

Figure 47: Summary of selected metrics for 2017/18 for the Low Carbon Level 3 sub-sector Suppliers of Systems (Geothermal) at Level 4

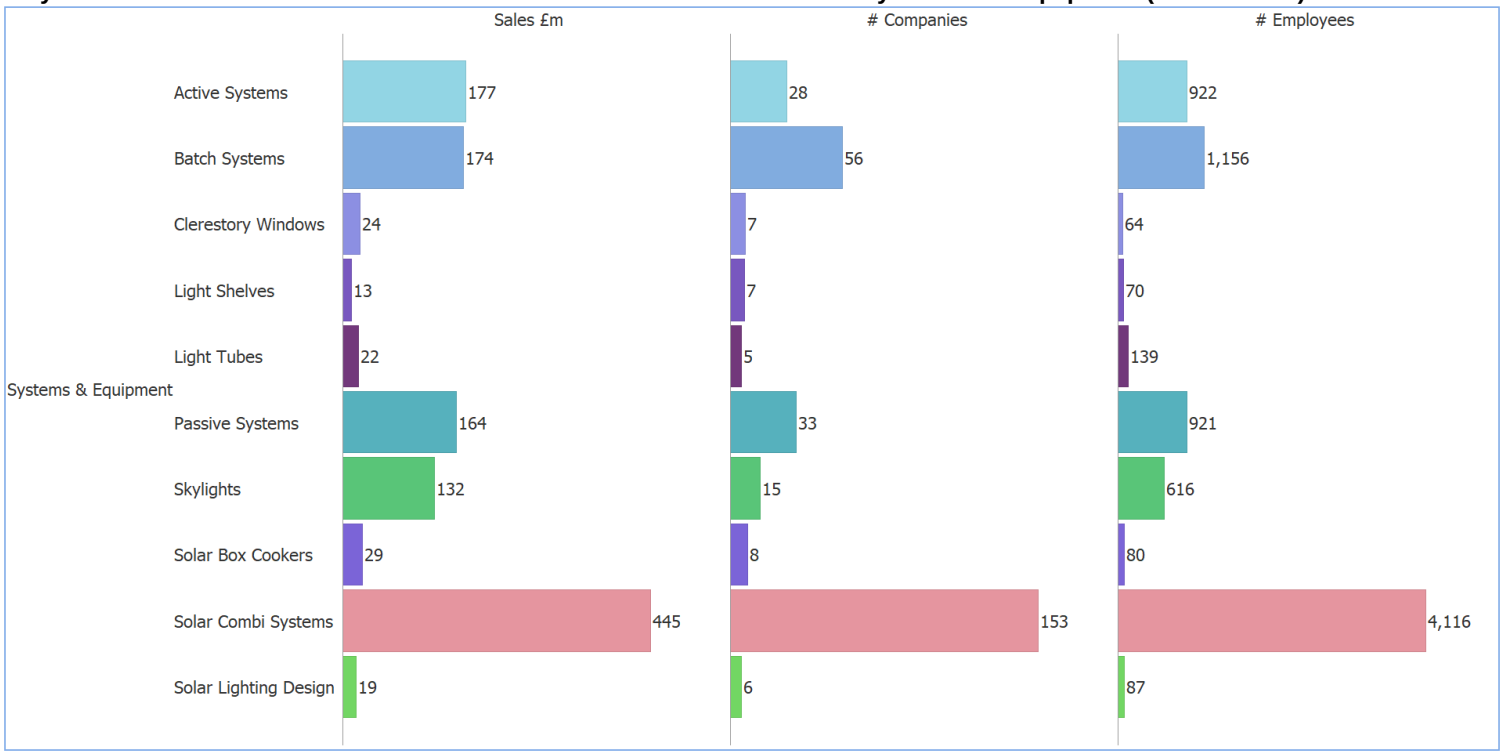


Geothermal – Within the ten Level 4 sub-sectors in Suppliers of Systems the top four sub-sectors account for 54% of sales and are made up of:

- Suppliers of Ancillary Equipment which makes up 15% of the Level 3 market, example companies include the suppliers and installers of system integration equipment

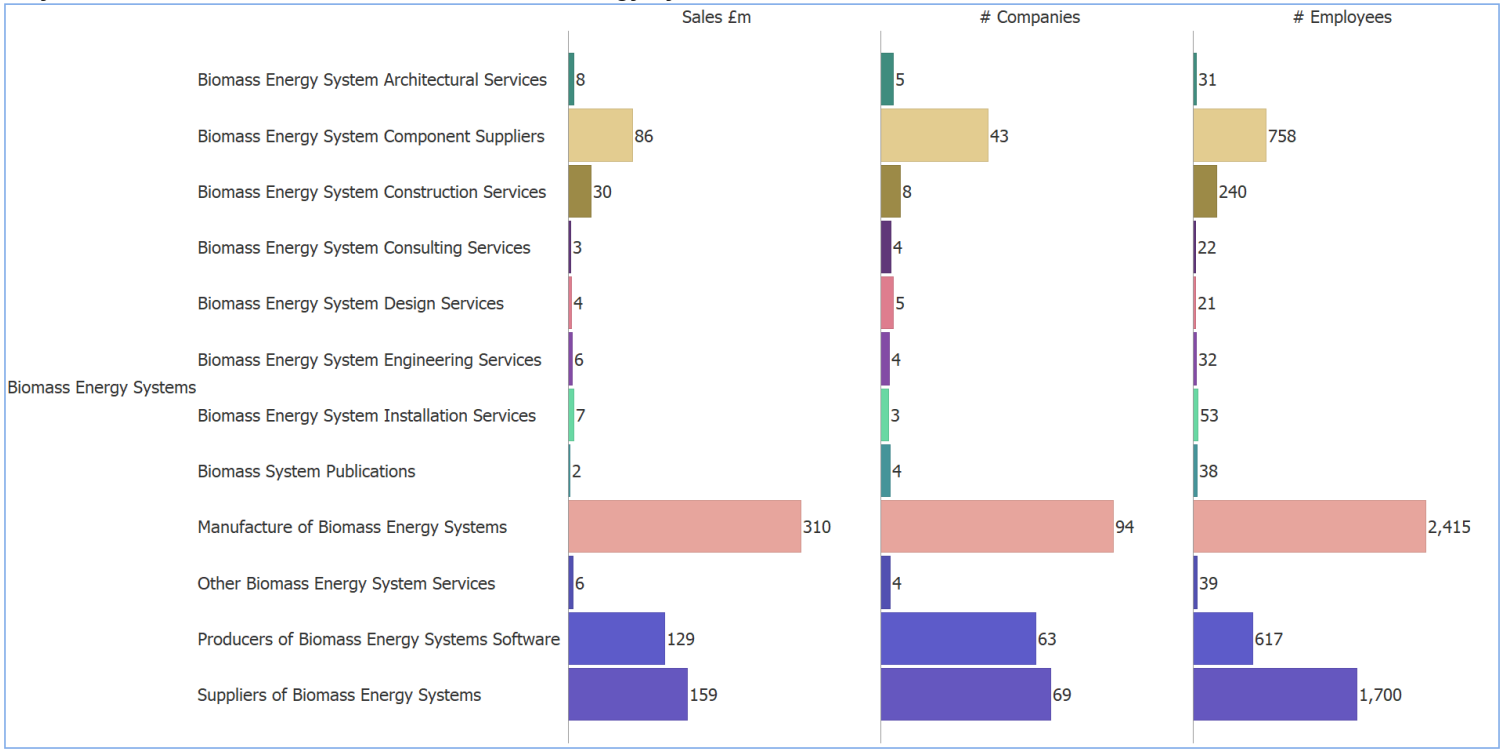
- Grouting Equipment makes up 14% of the market and includes distribution and installation companies
- Flow Control Valves makes up 13% of the market and includes importers, manufacturers and suppliers
- Thermally Enhanced Grout makes up 13% of the market and includes distribution and supply companies

Figure 48: Summary of selected metrics for 2017/18 for the Low Carbon Level 3 sub-sector Systems and Equipment (Photovoltaic) at Level 4



Photovoltaic – Within the ten Level 4 sub-sectors in Systems and Equipment, the largest Level 3 sub-sector for this market, the Solar Combi Systems sub-sector is the dominant sub-sector and it accounts for 37% of sales in this Level 3 market. Example companies include the developers, suppliers and installers of solar combi systems.

Figure 49: Summary of selected metrics for 2017/18 for Biomass Energy Systems at Level 4



Biomass – Within the twelve Level 4 sub-sectors in Biomass Energy Systems the top three sub-sectors account for 80% of the market and these are made up of:

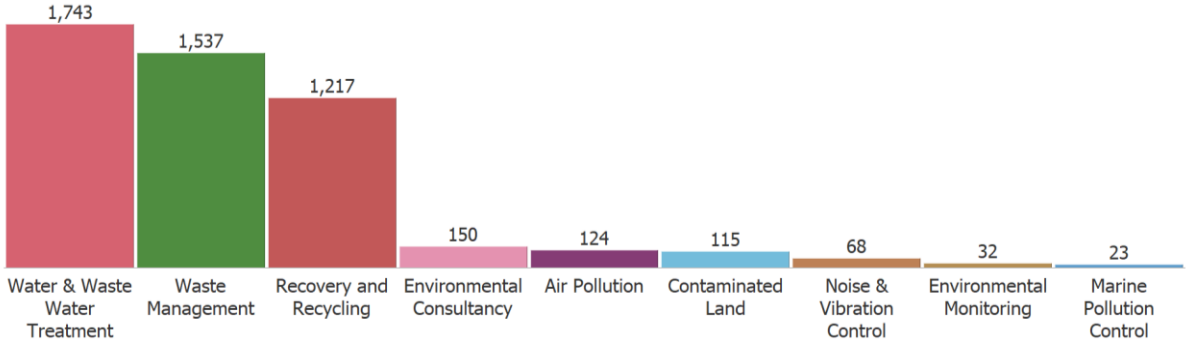
- Manufacture of Biomass Energy Systems which accounts for 41% of sales and is made of manufacturing companies
- Suppliers of Biomass Energy Systems which accounts for 21% of sales and includes suppliers and applications consultants
- Producers of Biomass Energy Systems Software which accounts for 17% of the market and includes specialist software houses

2.5 London's LCEGS Level 1 - Environmental Market

In this section we look at the Environmental market in greater detail. Initially we split the market into eight further sub-sectors, Level 2, and then look at the highest performing Level 2 sub-sectors in more detail by highlighting the activity happening within them at Level 3 and Level 4.

2.5.1 Environmental Market at Level 2

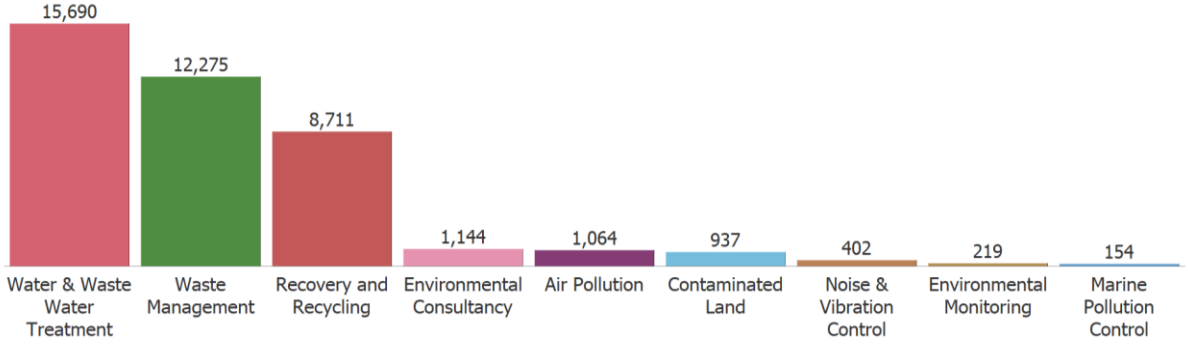
Figure 50: Sales 2017/18 in £m (Level 2)



Environmental is split into nine sub-sectors, of which three account for 90% of sales (Figure 50). These three are made up of Water Supply & Waste Water Treatment 35%, Waste Management 31% and Recovery & Recycling 24%.

Each of these three sub-sectors have grown between 2014/15 and 2017/18: Water Supply and Waste Water Treatment from £1.63bn to £1.74bn; Waste Management from £1.39bn to £1.53bn and Recovery and Recycling from £1.05bn to £1.22bn.

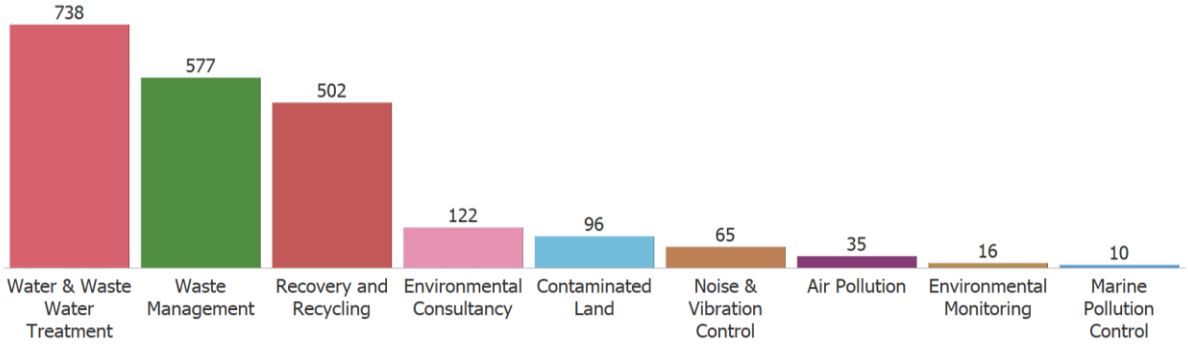
Figure 51: Employment 2017/18 (Level 2)



The same three sub-sectors account for 90% of employment (Figure 51). They are made up of Water Supply & Waste Water Treatment 39%, Waste Management 30% and Recovery & Recycling 21%.

Each of these three sub-sectors have grown between 2014/15 and 2017/18: Water & Waste Water Treatment from 14,670 to 15,690; Waste Management from 11,040 to 12,275 and Recovery and Recycling from 7,515 to 8,711.

Figure 52: Companies 2017/18 (Level 2)



The same three sub-sectors also account for 84% of companies (Figure 52). They are made up of Water Supply & Waste Water Treatment 34%, Waste Management 28% and Recovery & Recycling 23%.

Each of these three sub-sectors have grown between 2014/15 and 2017/18: Water & Waste Water Treatment from 695 to 738; Waste Management from 520 to 577 and Recovery and Recycling from 440 to 502.

2.5.2 Environmental Market at Level 3

Figure 53: Summary of selected metrics for 2017/18 for Waste Management and Water & Waste Water Treatment sub-sectors at Level 3

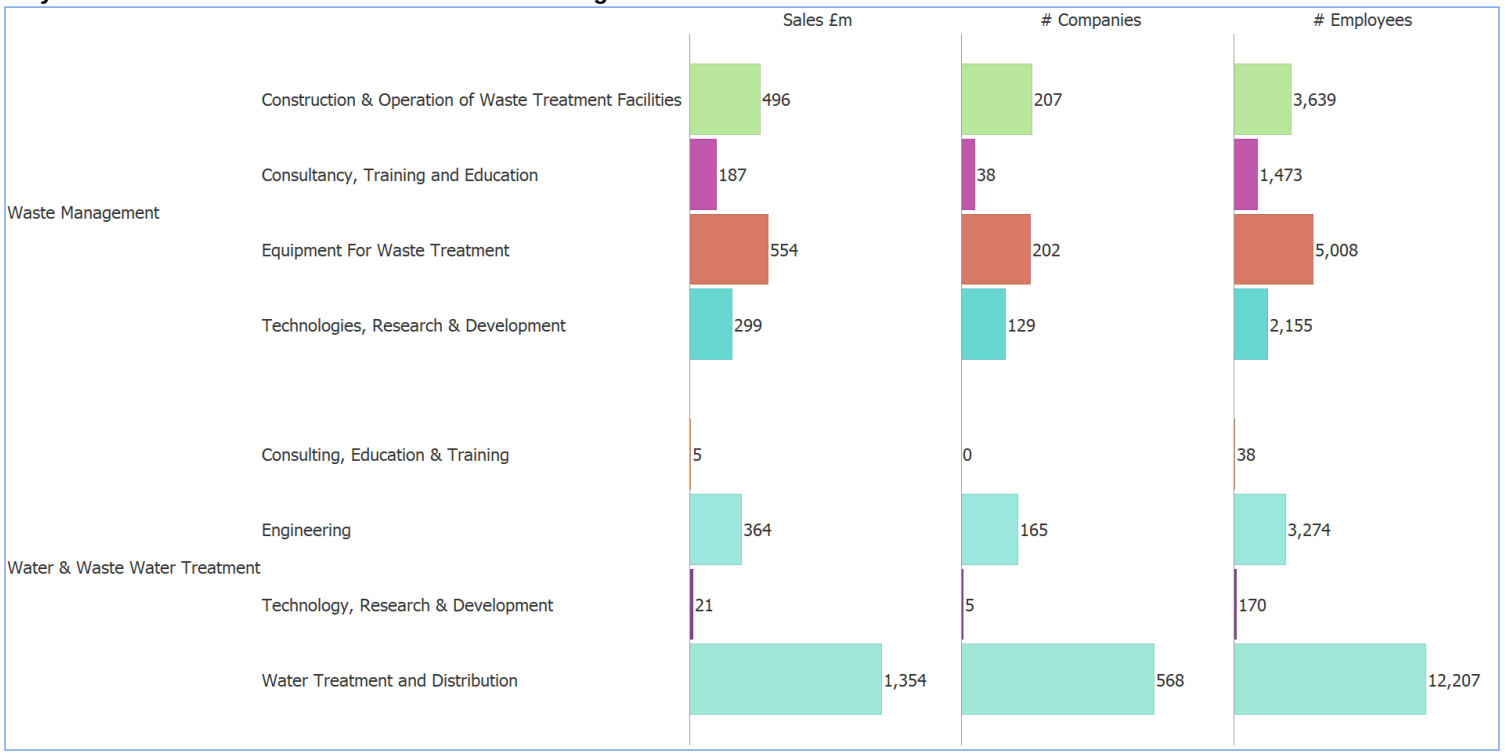


Figure 53 shows the Sales, Companies and Employees for the Waste Management and Water & Waste Water Treatment Level 2 sub-sectors broken down into their Level 3 sub-sectors.

Water & Waste Water Treatment is made up of four Level 3 sub-sectors, the largest being Water Treatment and Distribution which makes up 78% of sales. Example activities include development and implementation by utilities along with supply, consultancy and implementation by independent consulting engineers.

Waste Management is made up of four Level 3 sub-sectors with sales more evenly distributed across them than for the Water and Waste Water Treatment market. The largest Level 3 sub-sector is Equipment for Waste Treatment which makes up 36% of sales in the market. Example companies are those involved in development, manufacture and supply. The next largest sub-sector is Construction & Operation of

Waste Treatment Facilities which makes up 32% of sales). Example companies are those involved in both public and private operations management and supply and installation of operational equipment.

Figure 54: Summary of selected metrics for 2017/18 for Recovery and Recycling at Level 3

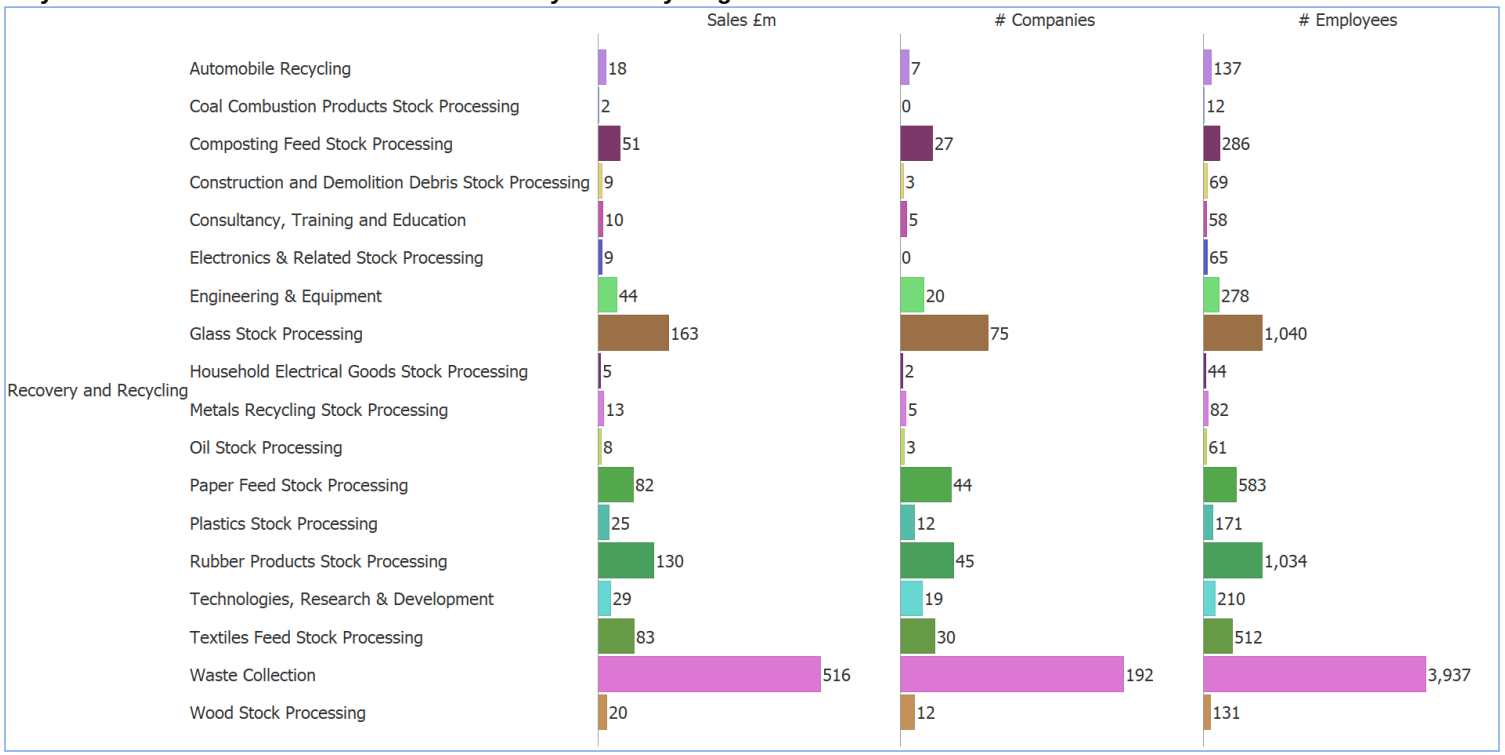


Figure 54 shows the Sales, Companies and Employees for the Level 2 Recovery & Recycling sub-sector broken down into its Level 3 sub-sectors. There are eighteen Level 3 sub-sectors and Waste Collection, including the collection of all waste, both municipal and commercial (landfill and recyclates), is clearly the largest sub-sector making up 42% of all sales in the Recovery and Recycling sub-sector. There are then a number of waste stream stock processing sub-sectors with the largest ones being Glass, Rubber Products, Textiles, Paper and Composting.

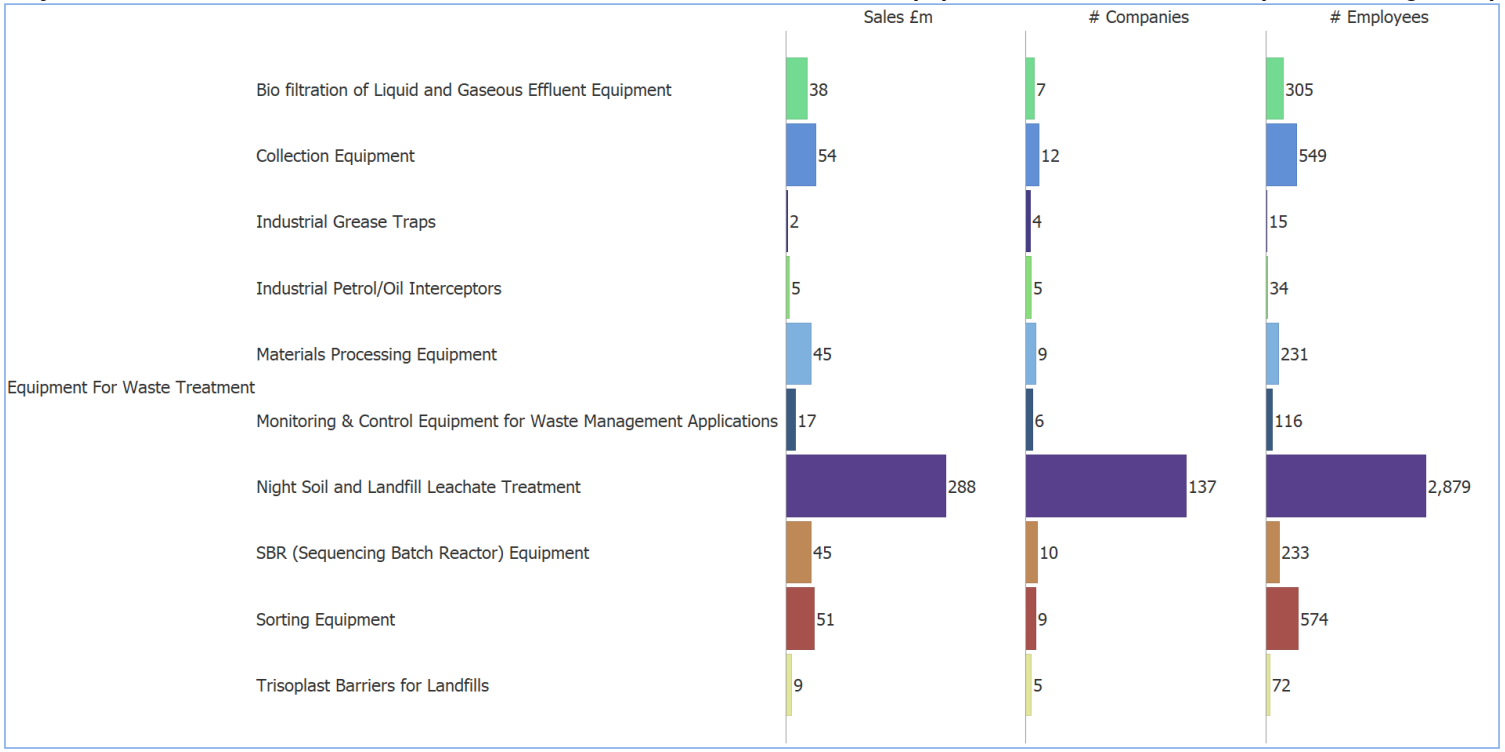
2.5.3 Environmental Market at Level 4

Figure 55: Summary of selected metrics for 2017/18 for the Environmental Level 3 sub-sector Water Treatment & Distribution at Level 4

Water and Waste Water Treatment – Within the eighteen Level 4 sub-sectors in Water Treatment and Distribution the relative sizes of the sub-sectors vary considerably and the top four sub-sectors account for 51% of the market. These are made up of:

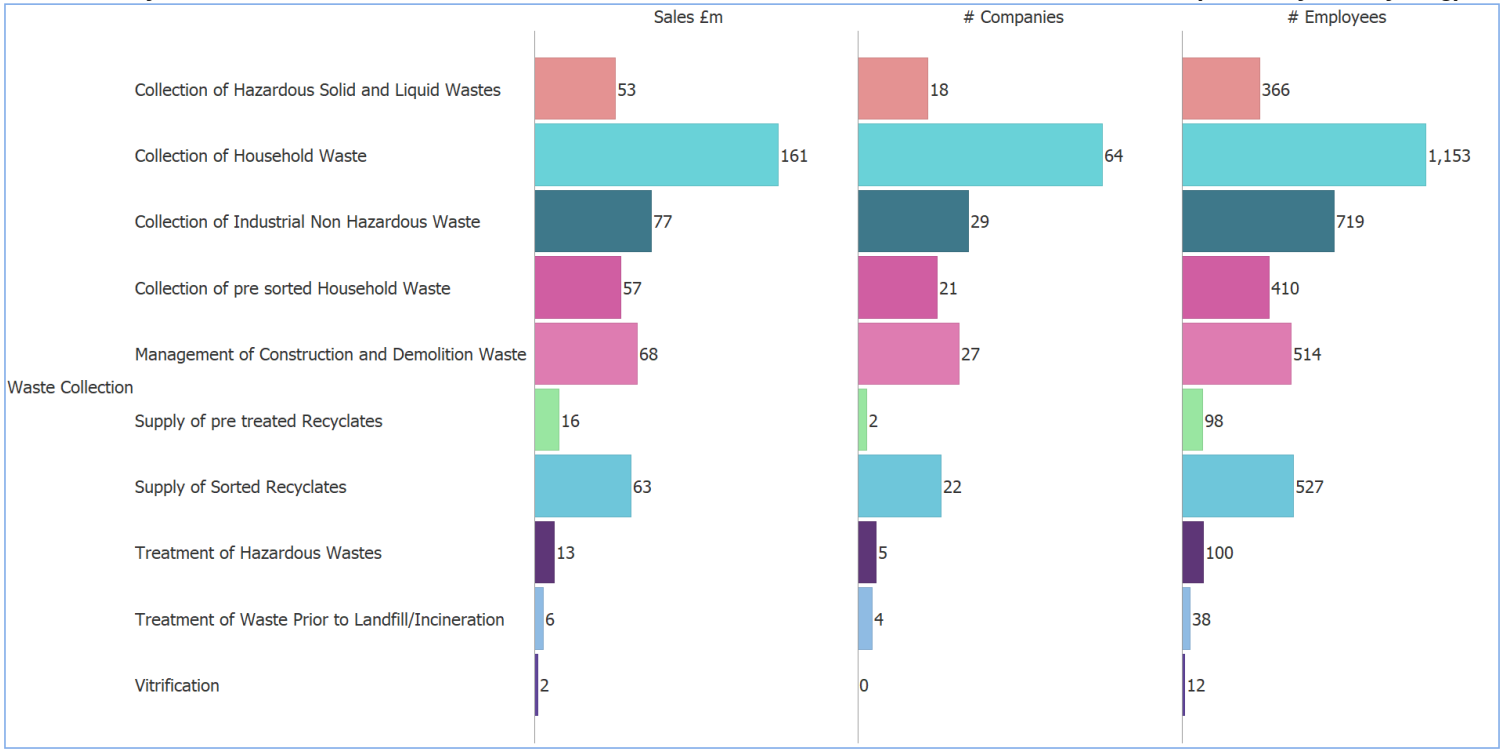
- Water Disinfection which accounts for 15% of sales and includes companies involved in the development and supply of disinfection systems
- Anaerobic and Aerobic Waste Water Treatment Systems & Operations which accounts for 13% of sales and includes companies involved in development, supply and consultation services
- Storm and Grey Water Treatment which accounts for 12% of sales and includes companies involved in the manufacture of fixtures and fittings and heavy systems
- Water and Waste Water Engineering which accounts for 11% of sales and includes predominantly consulting engineering companies

Figure 56: Summary of selected metrics for 2017/18 for the Environmental Level 3 sub-sector Equipment for Waste Treatment (Waste Management) at Level 4



Waste Management – Within the ten Level 4 sub-sectors in Equipment for Waste Treatment the Night Soil and Landfill Leachate Treatment sub-sector is the dominant sub-sector and accounts for 56% of the sales in this Level 3 market. Example companies in this sub-sector include equipment manufacturers, installers and consultancies.

Figure 57: Summary of selected metrics for 2017/18 for the Environmental Level 3 sub-sector Waste Collection (Recovery & Recycling) at Level 4



Recovery & Recycling – Within the ten Level 4 sub-sectors in Waste Collection the Collection of Household Waste is the dominant sub-sector and accounts for 31% of the sales in this Level 3 market. Example companies in this sub-sector include those involved in the supply of household waste compacting equipment and waste collection vehicles.

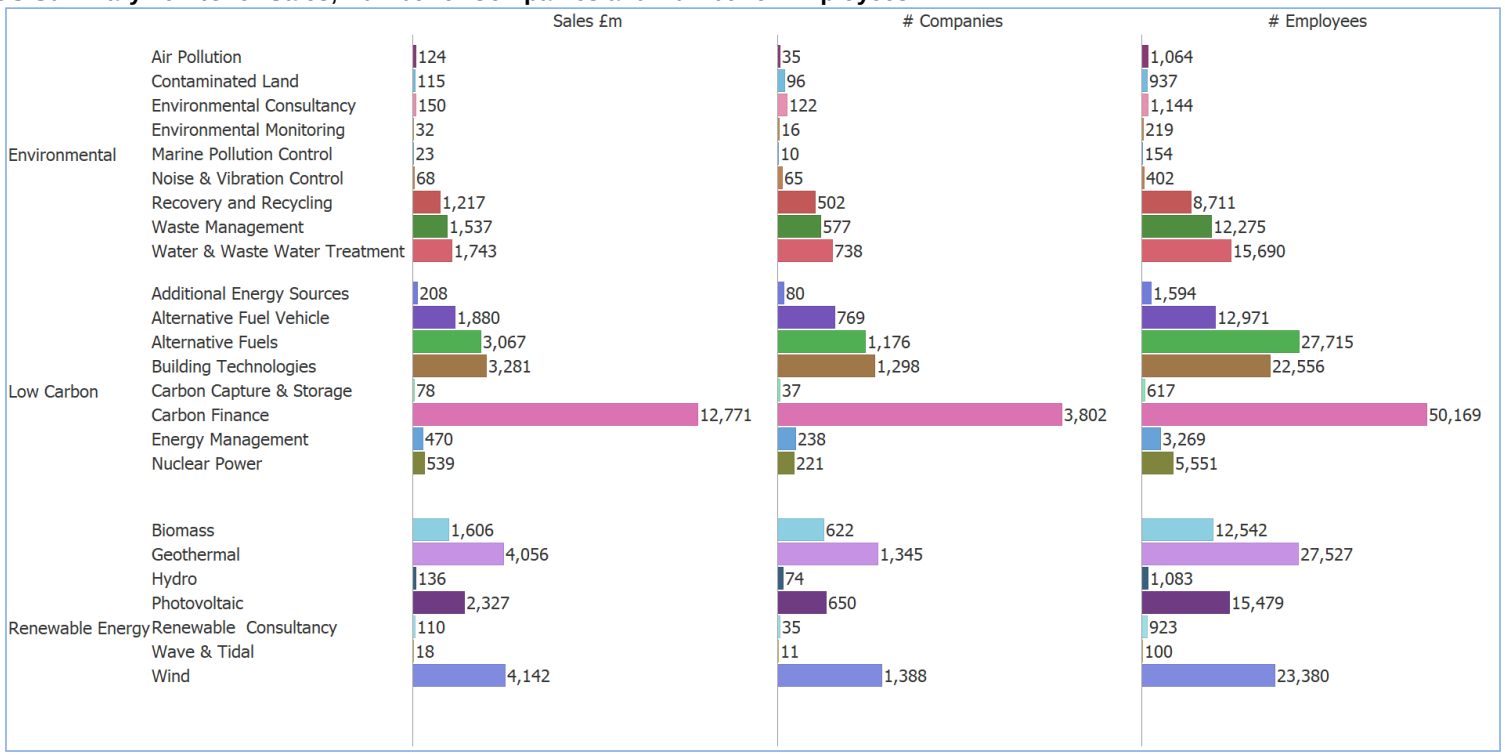
2.6 London's LCEGS Level 2 Summary

Figure 58 compares all 24 sub-sectors of LCEGS and shows that the five leading sub-sectors: Carbon Finance (32%), Wind (10%), Geothermal (10%), Building Technologies (8%) and Alternative Fuels (8%) have the largest share in terms of sales, company numbers and employment and accounted for 69% of London's LCEGS sector activity in 2017/18.

There is then a second grouping of six sub-sectors that are: Photovoltaic 6%, Alternative Fuel Vehicles 5%, Water and Waste Water Treatment 4%, Biomass 4%, Waste Management 4%, and Recovery and Recycling 3%; that make up a further 26% of the LCEGS sector sales in 2017/18.

These 11 sub-sectors dominate the LCEGS sector sales and together made up 95% of its overall sales in 2017/18.

Figure 58: LCEGS Summary 2017/8 for Sales, Number of Companies and Number of Employees



2.7 London and the UK's LCEGS compared

Figure 59: London Measures 2017/18 by Level 1

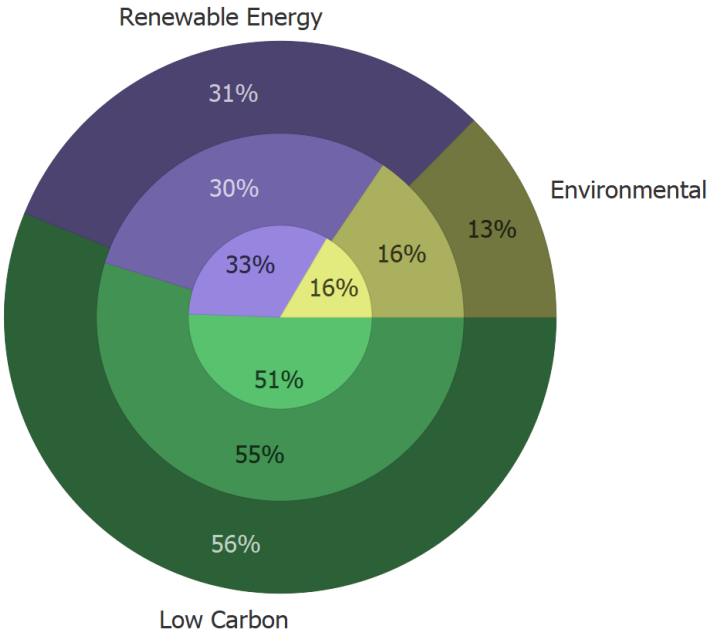
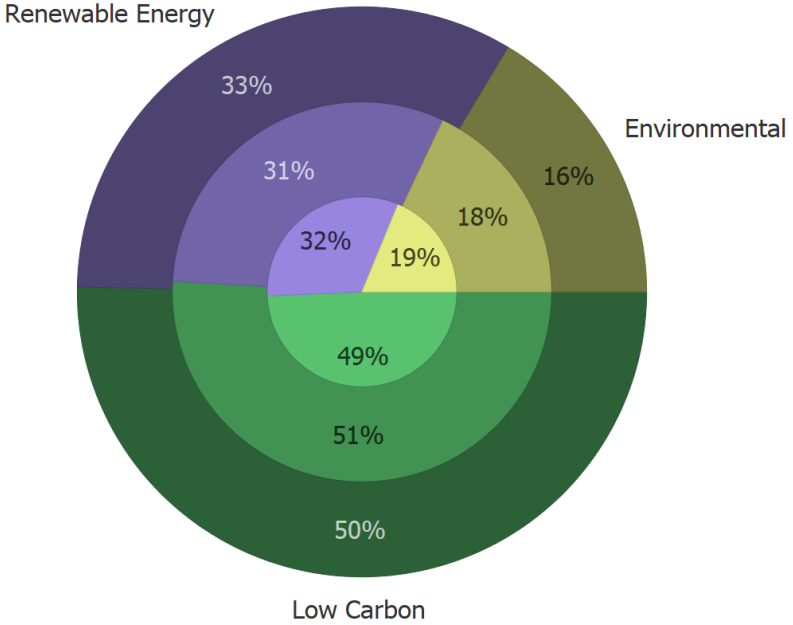


Figure 60: UK Measures 2017/18 by Level 1



Figures 59 and 60 compare the profile of London and UK's LCEGS activities at Level 1 for sales (outer circle), companies (middle circle) and employment (inner circle). London is stronger in Low Carbon for sales and number of companies. Low Carbon number of employees are also stronger, but not as strong as the other metrics, despite a higher level of sales and this is due to the higher than average value-added created by employment in Carbon Finance.

Figure 61: London's LCEGS sub-sectors for 2017/18 at Level 2

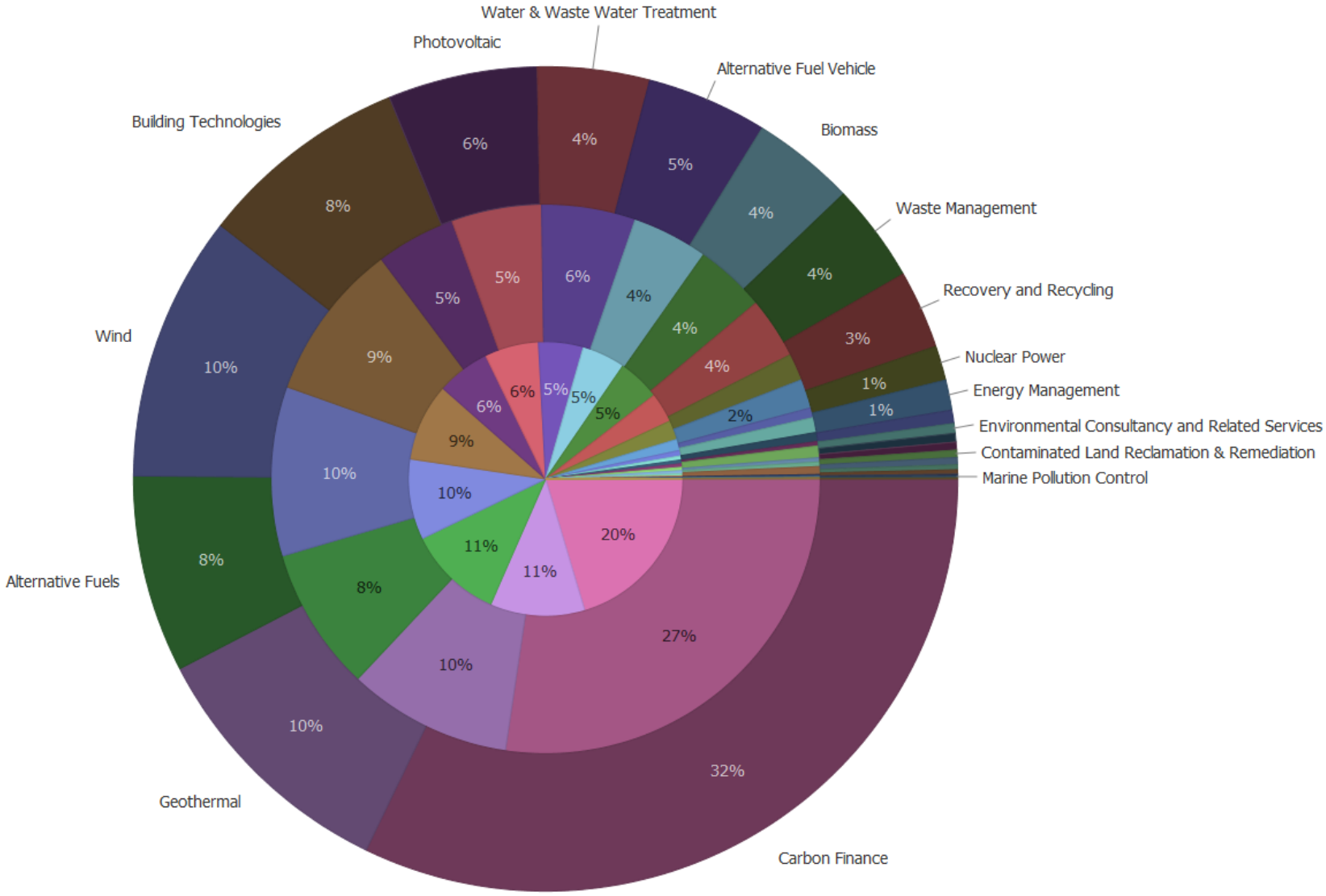
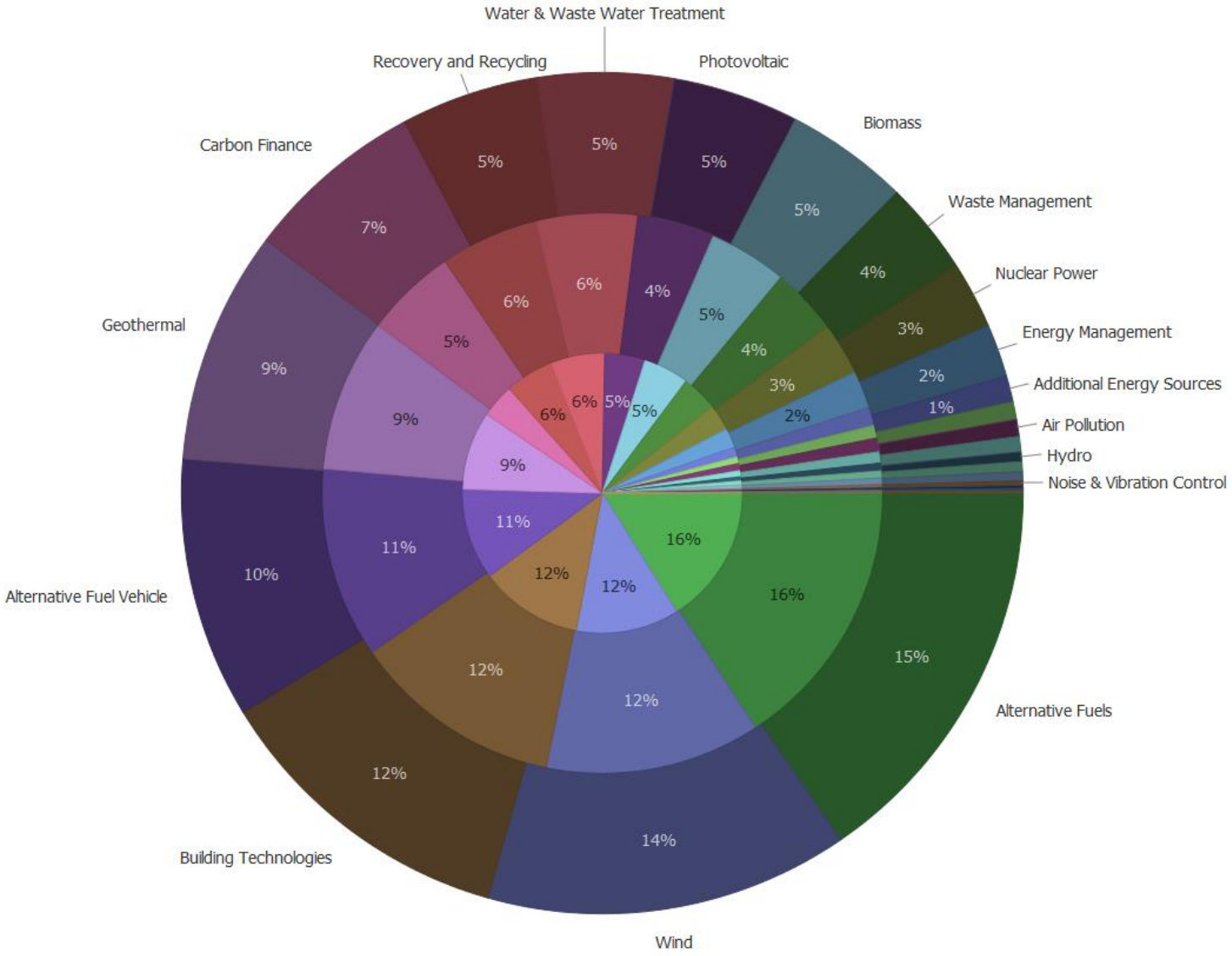


Figure 62: UK's LCEGS sub-sectors for 2017/18 at Level 2



Figures 61 and 62 extends the analysis by comparing the profile of London and UK's LCEGS activities at Level 2 for sales (outer circle), companies (middle circle) and employment (inner circle). There are significant differences between the two that gives London a distinctive LCEGS profile compared to the overall UK profile. These differences are mainly accounted for by the fact that Carbon Finance is London's largest LCEGS sub-sector and a function of the financial services sector in the City and Canary Wharf and shows negligible activity outside of London. Other regional strengths include Building Technologies in the South East Region and Alternative Fuels and Alternative Fuel Vehicles in the East of England, West Midlands and the North West.

Figure 63: Sales, Employment and Companies 2017/18 as % of UK

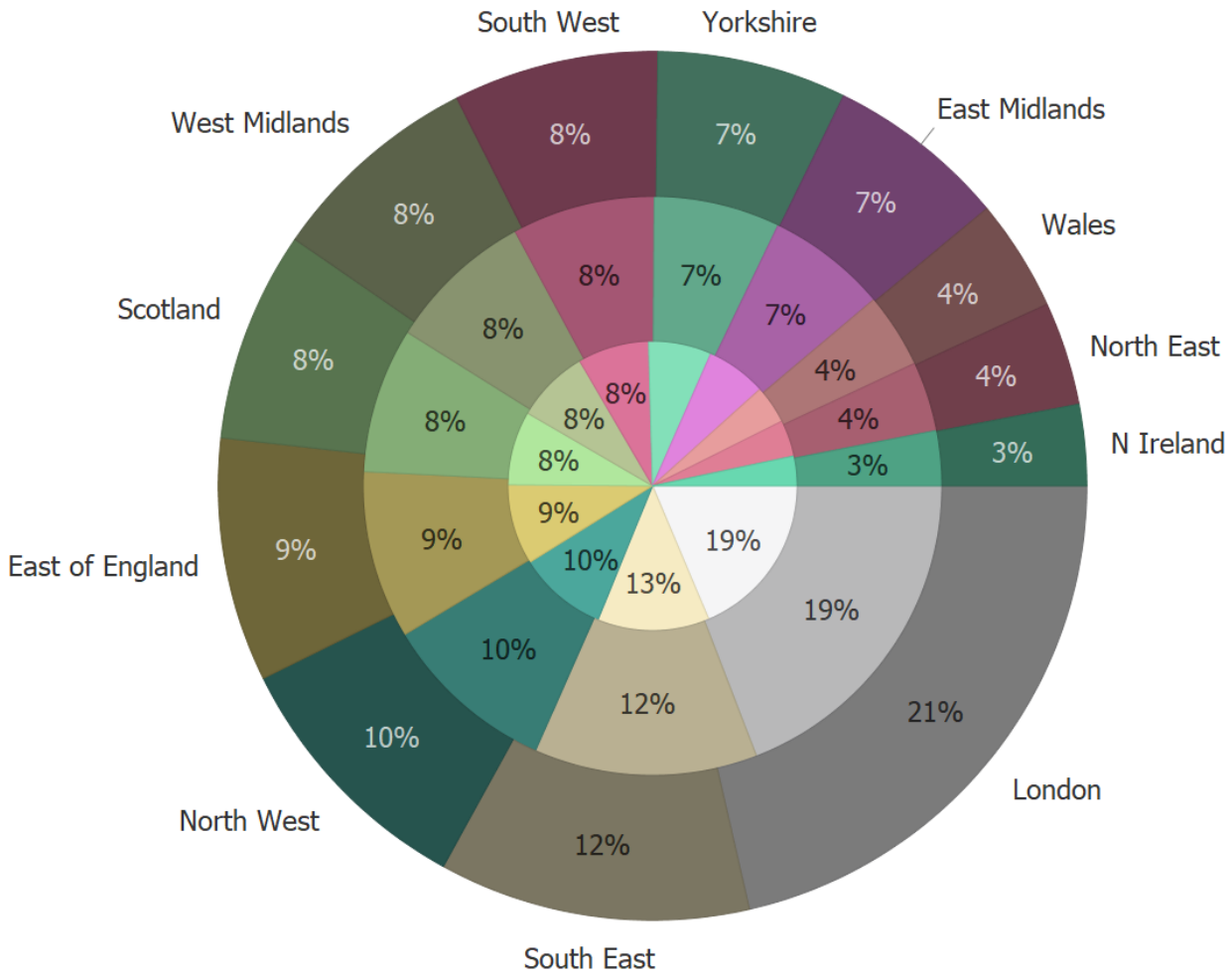


Figure 63 compares the "old" UK regions and the Devolved Administrations for sales, companies and employment.

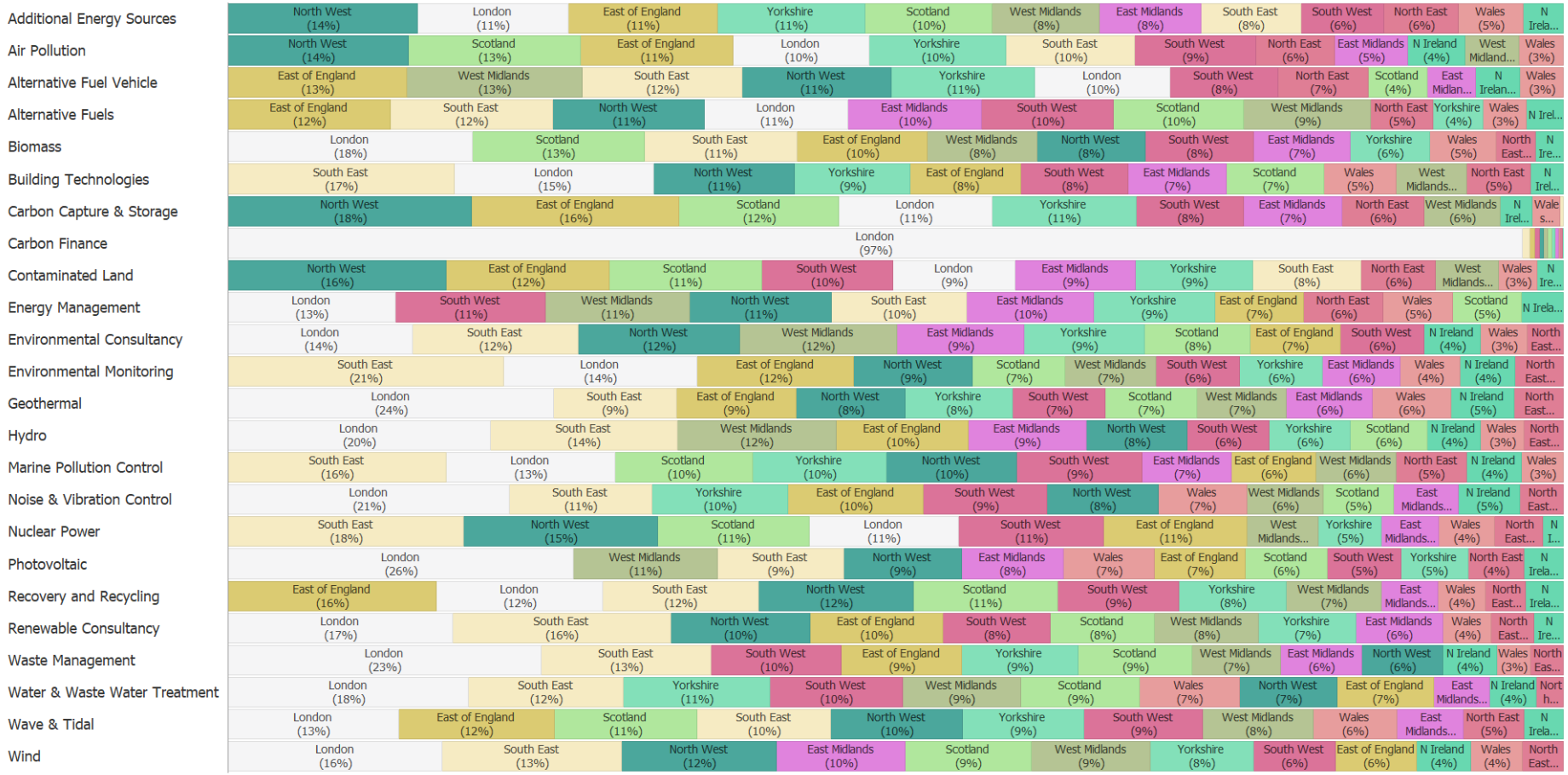
London accounts for 21% of sales, 19% of companies and 19% of employment. If Carbon Finance is removed, this changes to 15% of sales, 15% of companies and 15% of employment.

The next largest regions for LCEGS are the South East, North West and East of England, these rankings are unchanged from 2014/15.

Note: Regions have been used for comparison because London is so much bigger than the next largest LEP (London is 22% of England's LEP total whereas the South East LEP accounts for 5%) and maintains consistency with previous reports.

Figure 64 then compares the same regions, but this time by all the Level 2 sub-sectors. This graphic shows how London's 21% of UK Sales is made up from a range of contributions from Carbon Finance up at 97% to Contaminated Land down at 9%. The larger the percentage share of a sub-sector in a region, the higher the degree of supply chain localization in that sub-sector, in that region. The higher the degree of localization, the bigger the opportunity for the development of partnerships and regional cooperation.

Figure 64: Sales 2017/18 London as % of UK at Level 2



London has the highest share of the market in 13 sub-sectors: Carbon Finance (97%), Photovoltaic (26%), Geothermal (24%), Waste Management (23%), Noise and Vibration Control (21%), Hydro (20%), Biomass (18%), Water Supply and waste Water Treatment (18%), Renewable Consultancy (17%), Wind (16%), Environmental Consultancy (14%), Energy Management (13%) and Wave & Tidal (13%).

London has the second highest share of the market in 5 sub-sectors: Building Technologies (15%), Environmental Monitoring (14%), Marine Pollution Control (13%), Recovery and Recycling (12%) and Additional Energy Sources (11%).

2.8 London's LCEGS Growth

In Section 2.1 annual growth in London's LCEGS sales, companies and employment was compared with growth in the UK's LCEGS sector as a whole for 2015/16 to 2017/18. Table 14 shows the London annual growth in more detail by breaking it down into sub-sectors for each of the three years. Growth between one year and the next is shown in red.

While annual growth in the LCEGS sector as a whole has varied between 8.3 and 10.2% for each of the three parameters, Table 14 shows that there is considerable variation in growth between the Level 2 sub-sectors. This reflects London's strengths and its share of these sub-sector markets all of which are growing at different rates.

The higher growth rates for sub-sectors in London are a reflection of higher growth rates in the UK market and the opportunities that are being created by drivers of growth including policy, regulation and consumer choices. Most sub-sectors in London have growth rates within 1% of the UK growth rates. The three main exceptions are:

- Carbon Finance, where the London growth rates were 14.5% between 2015/16 and 2016/17 and 15.8% between 2016/17 and 2017/18 and the UK growth rates were 13.3% between 2015/16 and 2016/17 and 13.7% between 2016/17 and 2017/18
- Nuclear Power, where the London growth rates were 5.4% between 2015/16 and 2016/17 and 5.9% between 2016/17 and 2017/18 and the UK growth rates were 3.8% between 2015/16 and 2016/17 and 3.9% between 2016/17 and 2017/18
- Alternative Fuel Vehicle, where the London growth rates were 6.4% between 2015/16 and 2016/17 and 7.1% between 2016/17 and 2017/18 and the UK growth rates were 5.3% between 2015/16 and 2016/17 and 5.4% between 2016/17 and 2017/18

Table 14 shows that the highest levels of actual growth in London LCEGS occurred in Carbon Finance (Low Carbon), Wind, Photovoltaics and Wave & Tidal (Renewable Energy). Growth is generally consistent from year to year (within 1% increase in growth rate), with the exception of Carbon Finance company and employee growth (1.9% and 2.1% higher growth rates) between 2015/16 and 2017/18.

Table 14: London's LCEGS Sales (£m), Company and Employment Growth 2015/16 to 2017/18

		Sales					Companies					Employees				
Level 1	Level 2	2015/16	Growth % for 2016/17	2016/17	Growth % for 2017/18	2017/18	2015/16	Growth % for 2016/17	2016/17	Growth % for 2017/18	2017/18	2015/16	Growth % for 2016/17	2016/17	Growth % for 2017/18	2017/18
Environmental	Air Pollution	116.9	3.0	120.3	3.2	124	34	2.1	35	2.3	35	1,004	2.9	1,033	3.1	1,064
Environmental	Contaminated Land	104.9	4.7	109.8	5.1	115	87	4.6	91	5.0	96	857	4.4	895	4.7	937
Environmental	Environmental Consultancy	136.4	4.8	142.9	5.2	150	113	4.1	117	4.4	122	1,044	4.5	1,091	4.8	1,144
Environmental	Environmental Monitoring	28.7	5.3	30.2	5.8	32	14	5.9	15	6.3	16	197	5.2	208	5.5	219
Environmental	Marine Pollution Control	20.9	5.0	22.0	5.5	23	8	5.9	9	6.3	10	140	4.7	147	5.0	154
Environmental	Noise & Vibration Control	59.5	6.4	63.3	6.9	68	58	5.5	61	5.9	65	358	5.8	378	6.2	402
Environmental	Recovery and Recycling	1,097.1	5.1	1,152.8	5.6	1,217	457	4.6	478	4.9	502	7,863	5.1	8,261	5.4	8,711
Environmental	Waste Management	1,430.1	3.5	1,480.4	3.8	1,537	539	3.3	557	3.5	577	11,409	3.6	11,823	3.8	12,275
Environmental	Water & Waste Water Treatment	1,663.5	2.3	1,701.4	2.4	1,743	708	2.0	723	2.1	738	14,988	2.3	15,330	2.3	15,690
Low Carbon	Additional Energy Sources	188.2	4.9	197.4	5.3	208	73	4.8	77	5.1	80	1,446	4.9	1,516	5.2	1,594
Low Carbon	Alternative Fuel Vehicle	1,648.9	6.4	1,754.2	7.1	1,880	684	5.8	723	6.4	769	11,278	6.9	12,054	7.6	12,971
Low Carbon	Alternative Fuels	2,634.1	7.5	2,832.7	8.3	3,067	1,017	7.2	1,090	7.9	1,176	23,997	7.2	25,720	7.8	27,715
Low Carbon	Building Technologies	2,840.9	7.1	3,043.2	7.8	3,281	1,139	6.5	1,213	7.0	1,298	19,656	6.8	21,000	7.4	22,556
Low Carbon	Carbon Capture & Storage	72.1	4.2	75.1	4.5	78	34	4.2	35	4.5	37	569	4.0	592	4.2	617
Low Carbon	Carbon Finance	9,632.4	14.5	11,028.4	15.8	12,771	2,834	14.9	3,256	16.8	3,802	35,893	17.2	42,061	19.3	50,169
Low Carbon	Energy Management	421.4	5.3	443.9	5.8	470	215	5.2	226	5.6	238	2,934	5.4	3,091	5.7	3,269
Low Carbon	Nuclear Power	482.2	5.4	508.5	5.9	539	199	5.1	210	5.4	221	4,992	5.3	5,255	5.6	5,551
Renewable Energy	Biomass	1,366.6	8.0	1,476.2	8.8	1,606	541	6.9	578	7.5	622	10,748	7.7	11,575	8.4	12,542
Renewable Energy	Geothermal	3,471.4	7.7	3,739.4	8.5	4,056	1,163	7.2	1,246	7.9	1,345	23,544	7.8	25,381	8.5	27,527
Renewable Energy	Hydro	125.8	3.7	130.5	4.1	136	68	4.3	71	4.7	74	1,008	3.6	1,044	3.8	1,083
Renewable Energy	Photovoltaic	1,927.6	9.4	2,109.3	10.3	2,327	547	8.6	594	9.3	650	12,977	8.9	14,127	9.6	15,479
Renewable Energy	Renewable Consultancy	102.1	3.5	105.6	3.8	110	33	3.2	34	3.5	35	855	3.8	888	4.0	923
Renewable Energy	Wave & Tidal	14.8	8.4	16.1	9.2	18	10	6.7	11	7.2	11	84	9.0	92	9.7	100
Renewable Energy	Wind	3,396.5	9.9	3,732.8	11.0	4,142	1,159	9.0	1,263	9.9	1,388	19,209	9.8	21,098	10.8	23,380
Total		**32,983.1**	**9.2**	**36,016.2**	**10.2**	**39,697**	**11,733**	**8.3**	**12,712**	**9.4**	**13,906**	**207,049**	**8.5**	**224,659**	**9.5**	**246,073**

Table 15 shows sales growth forecasts (annual percentage growth from the previous year) for 2017/18 through to 2021/22. Forecast growth for the majority of sub-sectors is generally consistent with levels of historical growth, but as forecasts stretch out beyond 2021/22, they inevitably tend to be less robust.

Sub-sectors where growth is stronger than the historical figures, with double digit growth expected, include photovoltaic and wind, with others such as building technologies and wave and tidal seeing double digit growth during the forecast period.

These are consistent with activity required to address some of the main environmental challenges that London and the UK are facing such as decarbonising energy supply through renewable energy, reducing energy demand through Building Technologies and addressing air quality through alternative fuels and alternative Fuel Vehicles.

Table 15: London's LCEGS Forecast Sales (£m) Growth 2017/18 to 2021/22

Level 1	Level 2	2017/18	2018/19	2019/20	2020/21	2021/22
Environmental	Air Pollution	4.1	4.4	4.9	5.2	5.6
Environmental	Contaminated Land	5.2	5.6	6.0	6.5	7.0
Environmental	Environmental Consultancy	5.6	6.0	6.6	7.0	7.6
Environmental	Environmental Monitoring	5.7	6.2	6.7	7.1	7.8
Environmental	Marine Pollution Control	5.6	6.0	6.4	7.0	7.4
Environmental	Noise & Vibration Control	5.9	6.4	6.9	7.5	8.1
Environmental	Recovery and Recycling	5.6	6.1	6.6	7.1	7.6
Environmental	Waste Management	4.7	5.1	5.5	5.9	6.4
Environmental	Water & Waste Water Treatment	2.9	3.1	3.4	3.6	3.9
Low Carbon	Additional Energy Sources	6.2	6.8	7.4	8.0	8.6
Low Carbon	Alternative Fuel Vehicle	9.0	9.8	10.5	11.3	12.3
Low Carbon	Alternative Fuels	9.2	10.2	10.9	11.9	12.7
Low Carbon	Building Technologies	9.5	10.3	11.0	12.0	13.0
Low Carbon	Carbon Capture & Storage	5.8	6.3	6.8	7.3	7.9
Low Carbon	Carbon Finance	17.5	18.8	20.1	22.0	23.8
Low Carbon	Energy Management	6.3	6.8	7.3	7.9	8.5
Low Carbon	Nuclear Power	6.7	7.2	7.8	8.5	9.2
Renewable Energy	Biomass	8.2	9.0	9.7	10.4	11.2
Renewable Energy	Geothermal	8.5	9.2	9.9	10.7	11.6
Renewable Energy	Hydro	6.2	6.6	7.2	7.7	8.3
Renewable Energy	Photovoltaic	10.6	11.5	12.4	13.4	14.5
Renewable Energy	Renewable Consultancy	4.7	5.1	5.5	6.0	6.4
Renewable Energy	Wave & Tidal	9.5	10.2	11.1	11.9	12.9
Renewable Energy	Wind	11.8	12.8	13.9	14.9	16.0

Figure 65 shows the annual forecast growth for London's LCEGS to 2021/22 based upon the values in Table 15, which includes the forecast for Carbon Finance.

Figure 65: London's LCEGS Forecast Sales Growth 2017/18 to 2021/22 (including Carbon Finance)

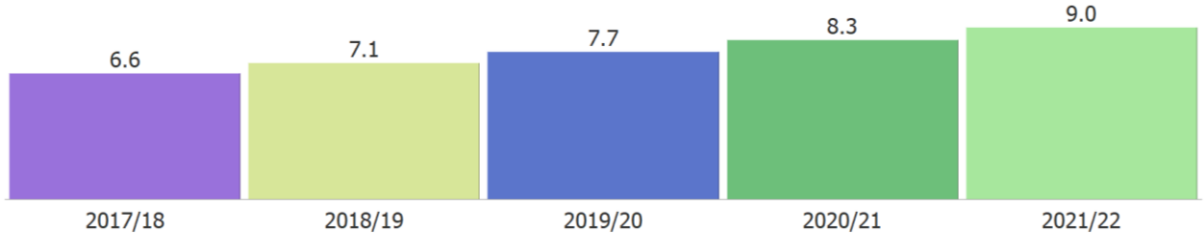
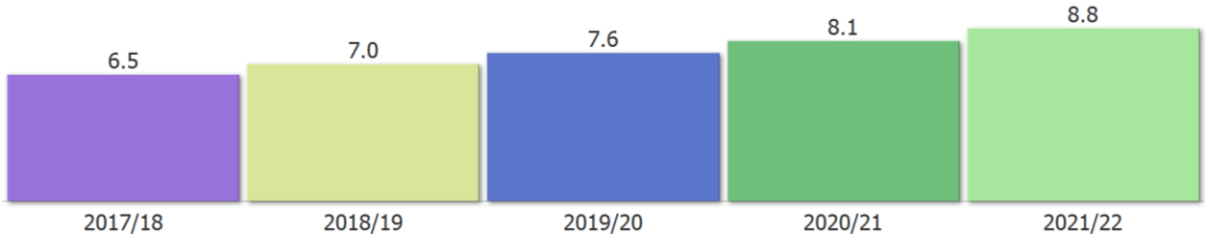


Figure 66 shows forecast growth for London's LCEGS if Carbon Finance is excluded from the predictions. This demonstrates that the sector is expected to continue to show strong growth without the Carbon Finance sub-sector and the impact that Carbon Finance has on London's LCEGS growth rate overall becomes less over the next five years.

Figure 66: London's LCEGS Forecast Sales Growth 2017/18 to 2021/22 (excluding Carbon Finance)



The previous report (2014/15 figures) demonstrated the clear effect that growth in Carbon Finance had on the overall growth of London, with 1.5% to 2.5% decrease in growth rates when Carbon Finance was excluded.

Figures 65 and 66 illustrate that Carbon Finance does not impact on the expected growth rates to the same degree during this reporting period. Table 5 indicates that the growth rates for Carbon Finance are still expected to be strong, but that the growth rates for other sub-sectors such as Photovoltaic, Wind, Building Technologies and Wave and Tidal are also expected to be stronger than in the past. This results in Carbon Finance being less dominant in terms of growth and results in the London growth forecasts being more in line with those of the UK (both including and excluding carbon finance).

So, while the London LCEGS sector is forecast to grow at 6.5% or more to 2021/22, the sector is becoming less dependent on the Carbon Finance sub-sector, compared with previous years, to drive London's growth rates.

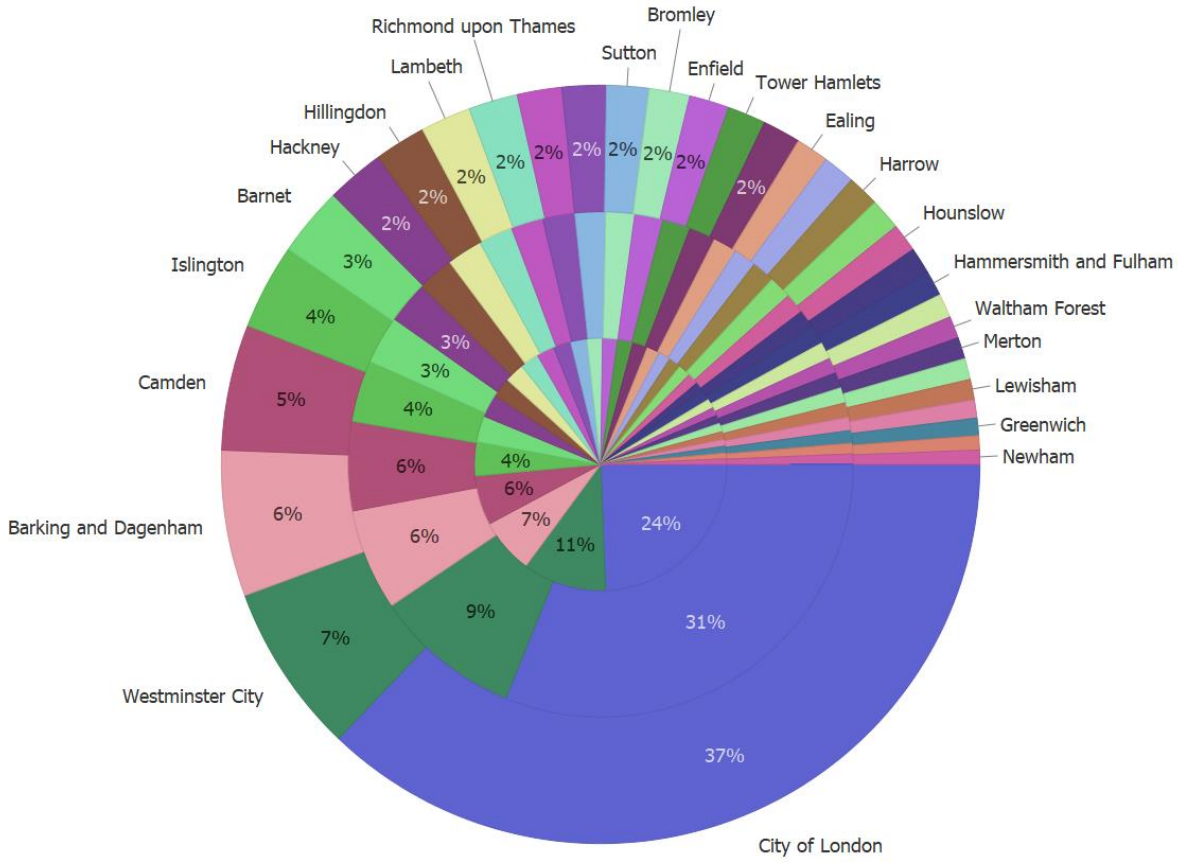
3. London's LCEGS by Local Authority

3.1 LCEGS by Local Authority

This section of the report continues the analysis of London's Local Authorities, which began in the 2014/15 report.

Figure 67 shows LCEGS for 2017/18 split by Local Authority for sales (outer circle), companies (middle circle) and employment (inner circle). The City of London accounts for 37% of London LCEGS sales, 31% of companies and 24% of employment. If Carbon Finance is excluded from the analysis, then the percentage of London's LCEGS sales associated with the City of London reduces to 8% of the total sales and it is ranked third behind Westminster City and Barking and Dagenham. This highlights that although Carbon Finance is having a lower impact on the overall LCEGS growth rates for London than in previous years, the size of this sub-sector means it has a significant impact on the size of LCEGS within the City of London and its ranking with other Local Authorities in London.

Figure 67: London's LCEGS 2017/18 by Local Authority for Sales, Companies and Employment



Local Authorities are analysed in more detail, by year, by economic measure and by LCEGS activity in the following section.

3.2 Local Authority Analysis by Year and Sub-Sector

Table 16 shows the three years of data for Local Authorities for sales, companies and employment. Growth between years is shown in red. Growth between years and across all three measures is generally similar around 6-9% for all Local Authorities, with the City of London being the exception at 13-16%.

Table 16: Local Authorities Sales, Companies and Employment from 2015/16 to 2017/18

	Sales £m					Companies					Employment				
Local Authority	2015/16	Growth % for 2016/17	2016/17	Growth % for 2017/18	2017/18	2015/16	Growth % for 2016/17	2016/17	Growth % for 2017/18	2017/18	2015/16	Growth % for 2016/17	2016/17	Growth % for 2017/18	2017/18
Barking and Dagenham	2,134.3	7.2	2,287.3	8.0	2,469.4	795	6.3	845	7.0	905	15,211	6.7	16,237	7.4	17,440
Barnet	1,011.9	7.3	1,086.2	8.2	1,174.8	378	6.6	403	7.2	432	7,226	7.0	7,730	7.6	8,321
Bexley	269.6	6.6	287.5	7.4	308.7	105	5.9	111	6.4	118	1,901	6.1	2,018	6.7	2,153
Brent	465.7	7.7	501.6	8.5	544.4	176	6.9	188	7.6	202	3,308	7.4	3,553	8.0	3,838
Bromley	593.9	7.3	637.4	8.1	689.2	225	6.5	240	7.1	257	4,231	6.9	4,524	7.6	4,869
Camden	1,842.1	7.1	1,973.4	7.8	2,127.6	696	6.4	741	6.9	792	13,573	6.8	14,501	7.4	15,571
City of London	11,389.8	13.1	12,886.6	14.4	14,744.1	3,315	13.5	3,762	15.2	4,335	45,321	14.1	51,698	16.0	59,957
Croydon	460.8	7.0	493.1	7.8	531.6	179	6.3	190	7.0	203	3,394	6.7	3,621	7.3	3,885
Ealing	478.1	7.2	512.4	8.0	553.5	184	6.4	196	7.1	210	3,493	6.9	3,733	7.6	4,017
Enfield	584.8	7.1	626.4	7.9	676.1	223	6.3	237	6.9	254	4,147	6.7	4,427	7.4	4,754
Greenwich	256.2	6.6	273.2	7.4	293.4	100	5.9	106	6.5	113	1,917	6.3	2,037	6.9	2,178
Hackney	860.4	6.5	916.2	7.2	982.3	334	5.7	353	6.3	375	6,409	6.1	6,799	6.7	7,253
Hammersmith and Fulham	376.9	7.2	403.9	7.8	435.6	145	6.5	155	7.0	166	2,851	6.9	3,048	7.4	3,274
Haringey	312.9	6.6	333.6	7.3	357.9	122	5.9	129	6.4	137	2,372	6.2	2,519	6.7	2,688
Harrow	467.4	7.3	501.5	8.1	542.3	179	6.5	190	7.1	204	3,358	6.9	3,590	7.6	3,864
Havering	212.3	6.5	226.1	7.2	242.5	83	5.9	88	6.4	94	1,597	6.3	1,697	6.8	1,813
Hillingdon	748.4	7.3	803.4	8.2	868.9	283	6.6	302	7.2	324	5,422	7.1	5,806	7.7	6,252
Hounslow	412.9	7.1	442.1	7.9	476.9	159	6.4	169	7.0	181	3,056	6.8	3,263	7.5	3,507
Islington	1,259.7	6.7	1,344.5	7.5	1,444.9	485	6.0	514	6.6	548	9,396	6.4	9,998	7.0	10,702
Kensington and Chelsea	555.0	7.2	594.9	8.1	642.8	207	6.5	220	7.1	236	4,110	6.9	4,394	7.7	4,731
Kingston upon Thames	351.0	7.0	375.6	7.7	404.7	134	6.2	142	6.8	152	2,561	6.6	2,732	7.2	2,929
Lambeth	735.4	7.3	789.3	8.0	852.6	279	6.5	297	7.1	318	5,311	7.0	5,684	7.6	6,114
Lewisham	295.7	7.7	318.6	8.7	346.2	112	7.0	120	7.7	129	2,086	7.4	2,241	8.2	2,425
Merton	316.5	6.8	338.1	7.6	363.7	123	6.1	130	6.7	139	2,304	6.5	2,454	7.1	2,629
Newham	207.5	6.9	221.8	7.6	238.6	82	6.1	87	6.8	93	1,529	6.6	1,630	7.3	1,749
Redbridge	378.3	7.7	407.5	8.6	442.7	142	6.9	152	7.6	163	2,592	7.4	2,783	8.1	3,009
Richmond upon Thames	721.4	7.0	772.1	7.7	831.8	268	6.2	285	6.9	304	5,236	6.7	5,584	7.3	5,990
Southwark	649.0	6.9	693.6	7.7	746.9	253	6.2	269	6.8	287	4,844	6.7	5,167	7.3	5,542
Sutton	623.3	6.7	665.1	7.4	714.6	241	6.0	255	6.5	272	4,513	6.3	4,796	6.8	5,122
Tower Hamlets	561.8	6.9	600.8	7.7	647.3	217	6.3	231	7.0	247	4,224	6.8	4,512	7.5	4,849
Waltham Forest	320.8	7.6	345.2	8.3	374.0	120	6.8	128	7.3	137	2,280	7.3	2,446	7.9	2,638
Wandsworth	654.4	6.9	699.6	7.7	753.5	251	6.2	266	6.8	285	4,881	6.6	5,202	7.2	5,579
Westminster City	2,474.8	7.4	2,657.5	8.1	2,873.7	1,139	6.3	1,210	6.9	1,293	22,394	8.2	24,233	9.1	26,433

Figure 68 shows the different profiles of the London Local Authorities when sales is split at Level 1. The City of London is the most extreme case due to Carbon Finance, but other Local Authorities show significant variations in Environmental (9-36%), Low Carbon (19-55%) and Renewable Energy (27-60%). This highlights that London's Local Authorities are not a homogeneous market, but they actually show subtle regional variations in activity within the LCEGS sector. This is further confirmed by Figure 69 below.

Figure 68: London's Local Authorities LCEGS Sales 2017/18 (Level 1)

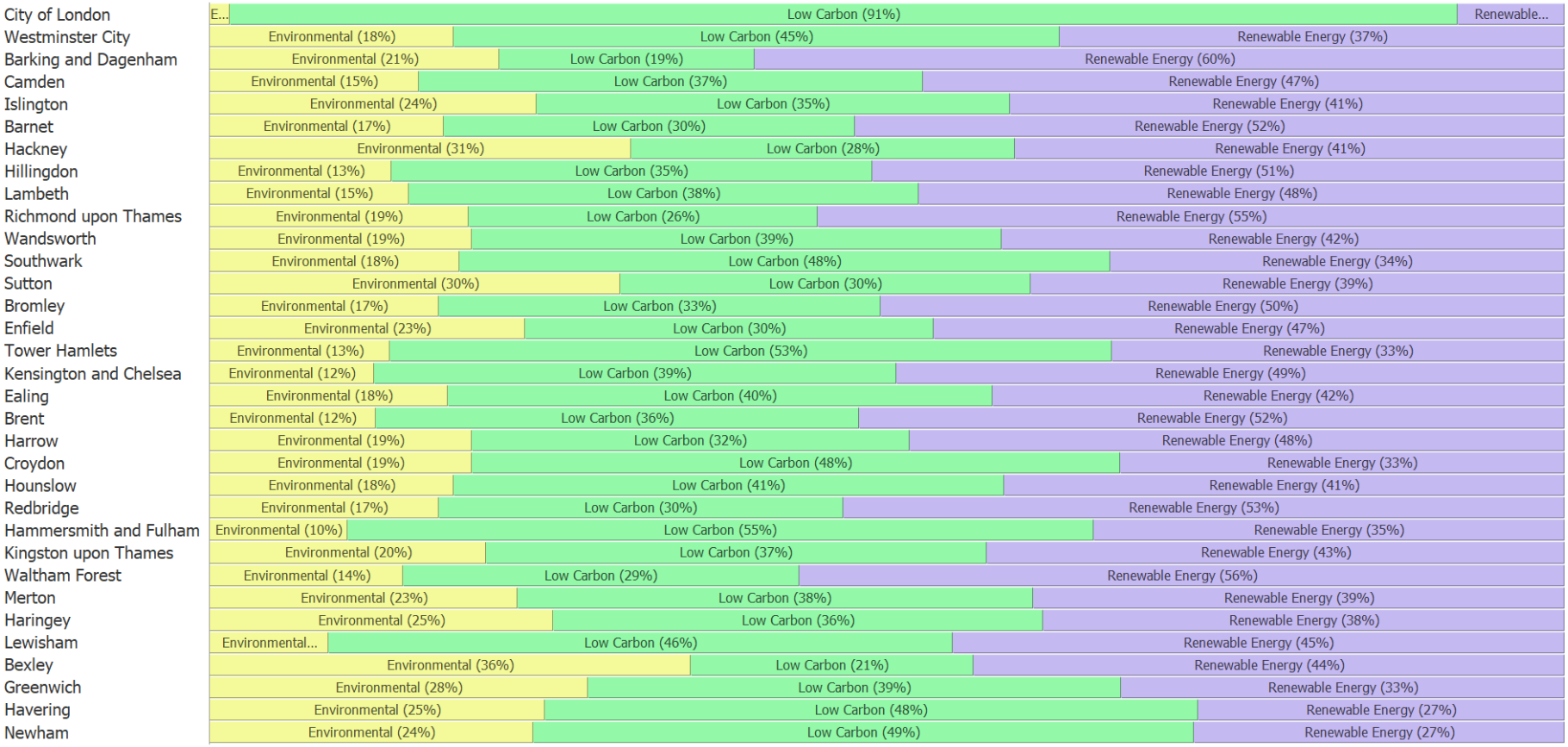
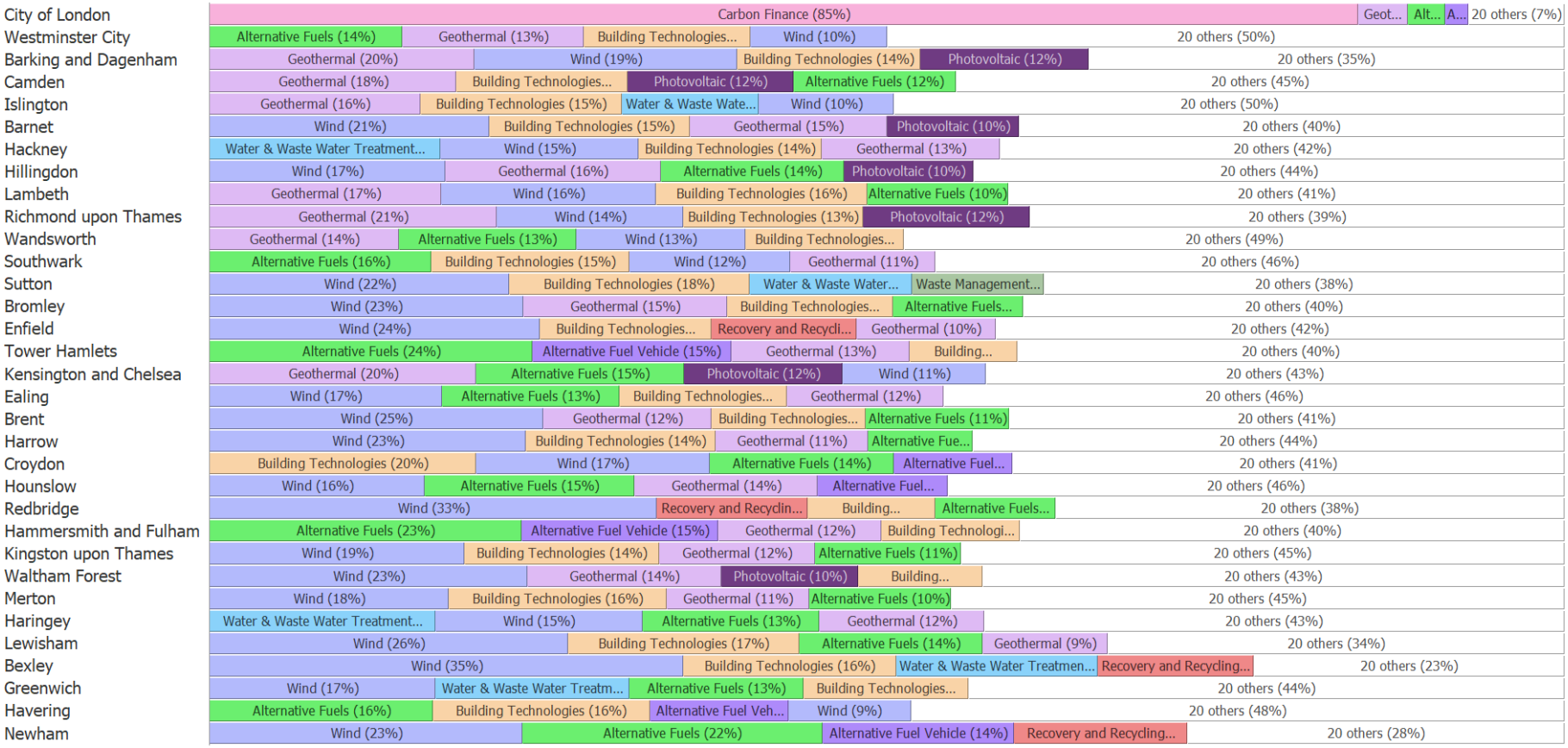


Figure 69 extends the analysis to include the Top 4 sub-sectors for each of London's Local Authorities. Typically, four sub-sectors account for over 50% of the total value, but the sub-sectors and their rankings do differ significantly across the 33 Local Authorities. But there are some consistent sub-sectors running through many of London's Local Authorities and these include Alternative Fuels, Geothermal, Wind and Building Technologies, they are represented in most of London's Local Authorities and are consistent with London's top five sub-sectors.

Figure 69: London's Local Authorities LCEGS Sales 2017/18 at Level 2

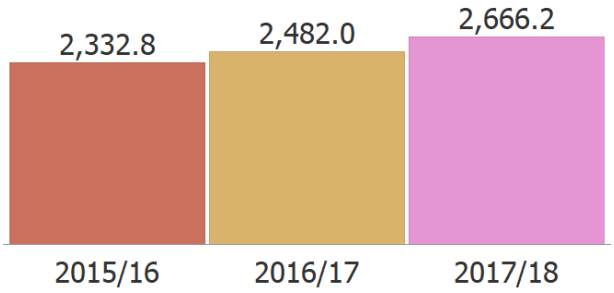


4. London's LCEGS and International Trade

4.1 London's LCEGS Exports

This section of the report addresses London's LCEGS Exports over the past three years when compared with UK totals and then identifies leading LCEGS export products and services and their destination markets.

Figure 70: London's Exports (£m) 2015/16 to 2017/18

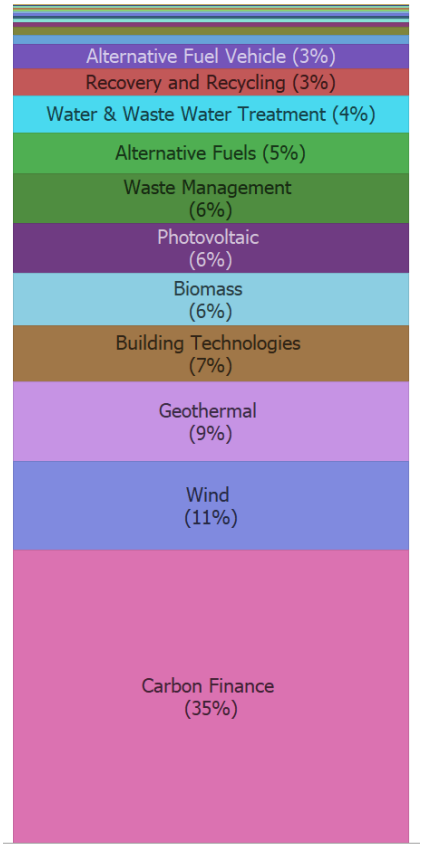


The value of London LCEGS Exports in 2014/15 was £2.3bn (previous report) and has grown to £2.7bn in 2017/18.

Growth between 2014/15 and 2015/16 was 1.3%. Growth between 2015/16 and 2016/17 was 6.4% and growth between 2016/17 and 2017/18 was 7.4%. This is compared with UK growth of approximately 2.2%, 6.0% and 6.8% respectively.

These figures show a significant increase in London's export growth rates from the 2014/15 report where growth rates were 2.1% for 2012/13 to 2013/14 and 2.5% for 2013/14 to 2014/15).

Figure 71: London's Exports (%) by Sub-Sector 2017/18



London represented 20% of all UK LCEGS exports in 2017/18. This is slightly higher than the 18% seen since 2011/12. It is also close to London's 21% of overall UK Sales. This means that although historically London's companies have had a slightly smaller share of the export market than the UK market, this gap is closing and there is now only a one per cent difference now.

Figure 71 shows the proportion of London LCEGS exports by Level 2 sub-sector, with Carbon Finance (36%), Wind (11%), Geothermal (9%), Building Technologies (7%) and Biomass (6%) being the leading sub-sectors and accounting for 69% of all London LCEGS exports.

Figure 71 illustrates a very different pattern of exports compared with the previous report (2014/15 data), where Carbon Finance was not even in the top 5 sub-sectors. Carbon Finance exports have significantly increased from 7% to 35%, while Photovoltaic and Water Supply and Waste Water Treatment have significantly decreased their export percentage from 11% to 6% and from 10% to 4% respectively.

The large increase in exports in Carbon Finance is due to a significant increase in the number of financial institutions that are dealing with Carbon Finance in export markets, with further increases in the consulting arena.

In Table 17 London's LCEGS exports are shown by sub-sector for each of the three years of the report and have been expressed as a percentage of that sub-sector's overall sales. The overall average for 2017/18 is 6.7%, which shows a steady reduction in exports as a percentage of sales from 7.6% in 2014/15 and 8.6% in 2011/12. Lower percentage exports, however, are not a negative factor as the value of most of the sub-sector exports have grown over this period it is just that the overall sub-sector sales have grown at a faster rate than their exports due to growth in the domestic market.

Table 17: London's LCEGS Exports as a % of Sales 2015/16 to 2017/18

		2015/16			2016/17			2017/18		
Level 1	**Level 2**	**Sales (£m)**	**Exports (£m)**	**Exports as % of Sales**	**Sales (£m)**	**Exports (£m)**	**Exports as % of Sales**	**Sales (£m)**	**Exports (£m)**	**Exports as % of Sales**
Environmental	Air Pollution	116.9	15.2	13.0	120.3	13.6	11.3	124.2	13.2	10.7
Environmental	Contaminated Land	104.9	8.8	8.4	109.8	9.9	9.0	115.3	5.5	4.8
Environmental	Environmental Consultancy	136.4	8.2	6.0	142.9	6.3	4.4	150.4	11.6	7.7
Environmental	Environmental Monitoring	28.7	1.3	4.4	30.2	2.9	9.7	32.0	3.4	10.6
Environmental	Marine Pollution Control	20.9	1.3	6.2	22.0	1.9	8.5	23.2	2.4	10.4
Environmental	Noise & Vibration Control	59.5	5.5	9.2	63.3	2.7	4.3	67.6	5.1	7.6
Environmental	Recovery and Recycling	1,097.1	85.0	7.7	1,152.8	43.9	3.8	1,216.9	88.2	7.2
Environmental	Waste Management	1,430.1	120.1	8.4	1,480.4	85.6	5.8	1,536.7	157.2	10.2
Environmental	Water & Waste Water Treatment	1,663.5	61.1	3.7	1,701.4	112.0	6.6	1,743.0	116.4	6.7
Low Carbon	Additional Energy Sources	188.2	9.2	4.9	197.4	10.5	5.3	207.7	9.0	4.4
Low Carbon	Alternative Fuel Vehicle	1,648.9	88.1	5.3	1,754.2	143.4	8.2	1,879.6	75.7	4.0
Low Carbon	Alternative Fuels	2,634.1	116.6	4.4	2,832.7	229.0	8.1	3,066.9	130.9	4.3
Low Carbon	Building Technologies	2,840.9	197.4	6.9	3,043.2	218.5	7.2	3,281.5	179.8	5.5
Low Carbon	Carbon Capture & Storage	72.1	4.9	6.7	75.1	3.9	5.2	78.5	4.4	5.6
Low Carbon	Carbon Finance	9,632.4	772.6	8.0	11,028.4	712.9	6.5	12,771.3	932.0	7.3
Low Carbon	Energy Management	421.4	27.0	6.4	443.9	27.5	6.2	469.6	30.8	6.6
Low Carbon	Nuclear Power	482.2	34.2	7.1	508.5	34.1	6.7	538.5	25.7	4.8
Renewable Energy	Biomass	1,366.6	105.0	7.7	1,476.2	114.0	7.7	1,606.4	166.9	10.4
Renewable Energy	Geothermal	3,471.4	248.8	7.2	3,739.4	273.3	7.3	4,055.7	251.9	6.2
Renewable Energy	Hydro	125.8	4.6	3.7	130.5	4.4	3.4	135.8	9.3	6.9
Renewable Energy	Photovoltaic	1,927.6	98.2	5.1	2,109.3	115.2	5.5	2,327.4	157.7	6.8
Renewable Energy	Renewable Consultancy	102.1	4.2	4.1	105.6	6.6	6.2	109.7	6.4	5.9
Renewable Energy	Wave & Tidal	14.8	0.9	6.0	16.1	1.5	9.3	17.6	1.0	5.5
Renewable Energy	Wind	3,396.5	314.6	9.3	3,732.8	308.4	8.3	4,141.7	281.6	6.8
Total		**32,983.1**	**2,332.8**	**7.1**	**36,016.2**	**2,482.0**	**6.9**	**39,697.3**	**2,666.2**	**6.7**

The sub-sectors with the highest export to sales ratio in 2017/18 are: Air Pollution 11%; Environmental Monitoring 11%; Biomass 10% and Marine Pollution control 10%.

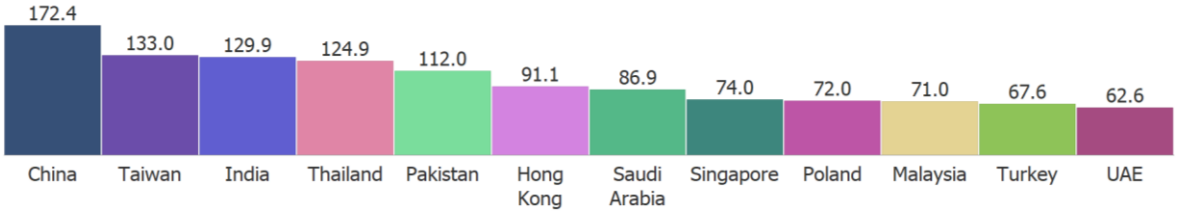
These percentages are inconsistent across the three-year period, which is different from previous years where there was greater consistency between years. The more fluctuating percentages over the last three years are indicative of the market experiencing fluctuation and change.

The Top 12 destinations for London's LCEGS exports are shown in Figure 72. China is the top destination, followed by Taiwan, India, Thailand, Pakistan, Hong Kong, Saudi Arabia, Singapore, Poland, Malaysia, Turkey and The United Arab Emirates.

These top destinations are not dissimilar to 2014/15, but Hong Kong, Saudi Arabia, Turkey and the United Arab Emirates have come in to the top 12 destinations and replaced Spain, South Korea, Japan and Italy.

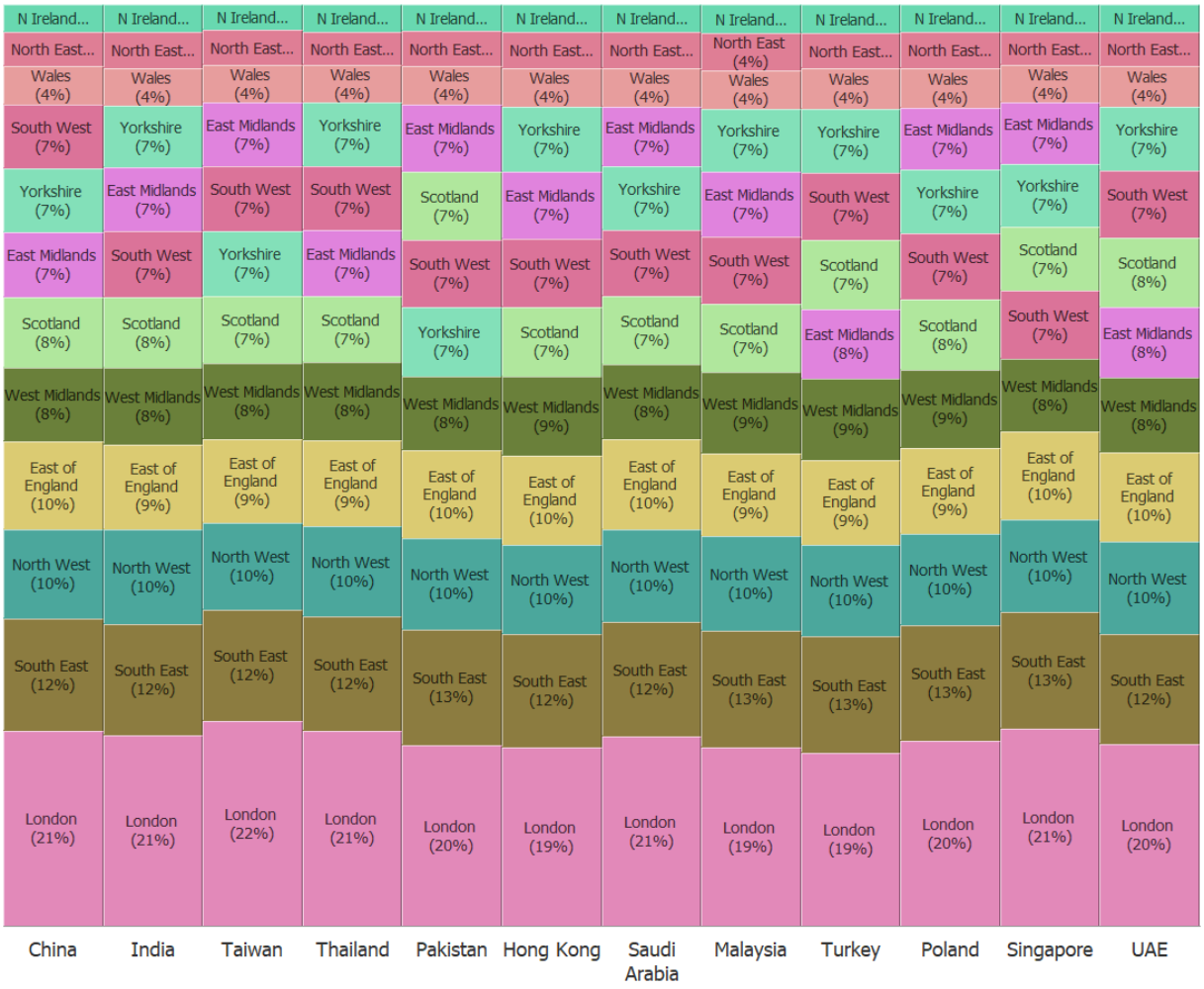
The USA, Germany and France, who are three of the UK's largest trading partners, are conspicuously absent from the Top 12 destinations for LCEGS and this has been a feature of international trade in LCEGS since 2007/08 when the analysis first began. The LCEGS sector has a very different trading pattern to other mainstream UK sectors, predominantly due to long term, historic trading relationships within this sector.

Figure 72: Top 12 London LCEGS Export Destinations 2017/18



In Figure 73 London's exports to each of the Top 12 countries are shown in relation to exports from the rest of the UK regions and Devolved Administrations. London consistently represents the largest exporting region and makes up between 19-23% of UK exports to each country.

Figure 73: Top 12 London LCEGS Export Destinations (and other UK Regions) 2017/18



4.2 London's LCEGS Priority Markets

Table 18 combines analysis of London's LCEGS product and service exports with destination countries using a heat map. The table shows the value of exports in £m and then colour codes the values - Green for higher values and Red for lower values. The table has been simplified by excluding the lowest value destination countries and lowest value products/services. The results show the top 32 export destinations and the top 12 (out of 24) sub-sectors.

Table 18: London's Level 2 Exports by Country for 2017/18 in £m

Level 1	Level 2	Australia	Brazil	Canada	China	Denmark	France	Germany	Hong Kong	Hungary	India	Indonesia	Iran	Italy	Japan	Malaysia	Mexico
Environmental	Recovery and Recycling	1.0	2.2	1.8	5.4	1.3	1.1	1.3	3.0	1.7	4.1	1.0	0.2	1.1	1.2	2.5	0.6
Environmental	Waste Management	1.8	3.9	3.1	9.5	2.2	2.0	2.2	5.5	3.0	7.3	1.8	0.4	1.9	2.2	4.4	1.1
Environmental	Water & Waste Water Treatment	1.3	2.9	2.3	6.9	1.6	1.5	1.6	4.1	2.2	5.4	1.3	0.3	1.4	1.6	3.2	0.8
Low Carbon	Alternative Fuel Vehicle	0.8	1.9	1.6	4.6	1.1	1.0	1.1	2.6	1.4	3.5	0.9	0.2	0.9	1.1	2.1	0.5
Low Carbon	Alternative Fuels	1.5	3.2	2.6	7.8	1.9	1.7	1.8	4.7	2.4	6.0	1.5	0.3	1.6	1.8	3.6	0.9
Low Carbon	Building Technologies	2.0	4.5	3.7	11.0	2.6	2.2	2.6	6.2	3.4	8.3	2.0	0.5	2.2	2.5	5.0	1.2
Low Carbon	Carbon Finance	12.1	17.7	15.4	67.7	14.3	11.6	10.6	30.7	14.1	49.9	12.9	2.8	14.0	9.8	22.9	8.2
Low Carbon	Energy Management	0.3	0.8	0.6	1.8	0.4	0.4	0.4	1.1	0.6	1.4	0.3	0.1	0.4	0.4	0.9	0.2
Renewable Energy	Biomass	1.9	4.2	3.4	9.9	2.4	2.1	2.4	5.8	3.2	7.7	1.8	0.4	2.1	2.3	4.7	1.1
Renewable Energy	Geothermal	2.8	6.3	5.0	15.3	3.6	3.2	3.6	8.8	4.8	11.6	2.8	0.7	3.1	3.5	7.0	1.7
Renewable Energy	Photovoltaic	1.8	4.0	3.2	9.5	2.2	2.0	2.2	5.4	3.1	7.3	1.8	0.4	2.0	2.2	4.3	1.1
Renewable Energy	Wind	3.2	7.2	5.6	17.1	4.0	3.5	4.1	9.8	5.4	12.9	3.1	0.7	3.4	3.9	7.8	1.9

Level 1	Level 2	Netherlands	Pakistan	Poland	Portugal	Romania	Russia	Saudi Arabia	Singapore	S Africa	S Korea	Sweden	Taiwan	Thailand	Turkey	UAE	US
Environmental	Recovery and Recycling	1.5	3.8	2.4	1.0	1.5	1.1	2.8	2.3	1.1	1.2	0.8	3.8	3.9	2.4	2.2	0.8
Environmental	Waste Management	2.6	6.6	4.1	1.8	2.6	2.0	4.9	4.0	2.0	2.1	1.4	6.8	6.7	4.3	3.8	1.4
Environmental	Water & Waste Water Treatment	1.9	4.9	3.1	1.3	2.0	1.5	3.7	2.9	1.5	1.6	1.0	5.1	5.1	3.1	2.8	1.0
Low Carbon	Alternative Fuel Vehicle	1.2	3.3	2.0	0.9	1.2	1.0	2.3	1.9	0.9	1.0	0.7	3.3	3.3	2.1	1.9	0.7
Low Carbon	Alternative Fuels	2.2	5.7	3.4	1.5	2.1	1.7	4.1	3.4	1.7	1.8	1.1	5.8	5.5	3.5	3.1	1.2
Low Carbon	Building Technologies	2.9	7.6	4.8	2.0	3.0	2.3	5.6	4.6	2.3	2.5	1.5	7.9	7.6	4.8	4.2	1.6
Low Carbon	Carbon Finance	20.1	38.2	26.1	7.7	14.7	13.7	32.8	29.7	10.3	16.7	7.4	57.6	50.1	20.6	21.2	11.4
Low Carbon	Energy Management	0.5	1.3	0.8	0.3	0.5	0.4	1.0	0.8	0.4	0.4	0.3	1.4	1.3	0.8	0.7	0.3
Renewable Energy	Biomass	2.7	7.1	4.5	1.9	2.8	2.1	5.1	4.2	2.1	2.3	1.4	7.3	7.3	4.6	4.1	1.5
Renewable Energy	Geothermal	4.1	10.7	6.7	2.8	4.3	3.2	7.8	6.5	3.1	3.5	2.1	10.9	10.9	6.9	6.0	2.3
Renewable Energy	Photovoltaic	2.5	6.7	4.2	1.8	2.6	2.0	5.0	4.0	2.0	2.1	1.4	6.7	6.8	4.2	3.7	1.4
Renewable Energy	Wind	4.6	12.0	7.4	3.1	4.8	3.6	8.8	7.2	3.5	3.9	2.4	12.2	12.1	7.5	6.7	2.5

Table 18 can be read horizontally to identify the strongest exporting sub-sectors i.e. Carbon Trading, vertically to identify the strongest trading partners i.e. China, and using both vertical and horizontal you can identify strong niches like Geothermal to Taiwan and Alternative Fuels to India.

Tables 19a, 19b and 19c apply the same conventions as Table 18, but this time broken down to Level 3, which reveals London's priority exports in more detail. The tables show the same 32 destination countries but for 31 out of a total of 126 Level 3 market activities.

Table 19a: London's Level 3 Exports by Country for 2017/18 in £m

Level 2	Level 3	Australia	Brazil	Canada	China	Denmark	France	Germany	Hong Kong	Hungary	India	Indonesia
Recovery and Recycling	Waste Collection	0.4	0.9	0.7	2.3	0.5	0.5	0.5	1.3	0.7	1.7	0.4
Waste Management	Construction & Operation of Waste Treatment Facilities	0.6	1.3	1.0	3.2	0.7	0.6	0.7	1.8	1.0	2.4	0.6
Waste Management	Consultancy, Training and Education	0.2	0.5	0.4	1.1	0.3	0.2	0.3	0.7	0.4	0.9	0.2
Waste Management	Equipment For Waste Treatment	0.6	1.4	1.1	3.4	0.8	0.7	0.8	1.9	1.1	2.6	0.6
Waste Management	Technologies, Research & Development	0.3	0.8	0.6	1.8	0.5	0.4	0.4	1.1	0.6	1.4	0.3
Water & Waste Water Treatment	Engineering	0.3	0.6	0.5	1.4	0.3	0.3	0.3	0.9	0.5	1.1	0.3
Water & Waste Water Treatment	Water Treatment and Distribution	1.0	2.3	1.8	5.4	1.3	1.1	1.3	3.1	1.7	4.2	1.0
Alternative Fuel Vehicle	Alternative Fuels (main Stream) for Vehicles Only	0.6	1.4	1.2	3.4	0.8	0.7	0.8	1.9	1.0	2.6	0.6
Alternative Fuel Vehicle	Other Fuels and Vehicles	0.2	0.5	0.4	1.2	0.3	0.2	0.3	0.7	0.4	0.9	0.2
Alternative Fuels	Main Stream Bio Fuels	0.3	0.6	0.5	1.5	0.4	0.3	0.4	0.9	0.5	1.2	0.3
Alternative Fuels	Other Bio Fuels	0.9	2.0	1.6	4.8	1.2	1.1	1.1	3.0	1.5	3.7	0.9
Alternative Fuels	Other Fuels	0.2	0.4	0.4	1.1	0.3	0.2	0.3	0.6	0.3	0.9	0.2
Building Technologies	Doors	0.6	1.3	1.1	3.4	0.8	0.7	0.8	1.9	1.0	2.5	0.6
Building Technologies	Insulation and Heat Retention Materials	0.3	0.6	0.4	1.4	0.3	0.3	0.3	0.8	0.4	1.0	0.2
Building Technologies	Windows	1.0	2.2	1.8	5.3	1.2	1.1	1.2	3.1	1.7	4.1	1.0
Carbon Finance	Carbon Credits Finance & Fund Management	1.8	3.1	2.8	6.5	2.1	1.9	2.1	4.6	2.1	7.2	1.0
Carbon Finance	Carbon Credits Trading	9.3	12.4	10.8	56.4	11.2	8.8	7.4	23.8	10.5	38.4	11.0
Carbon Finance	Carbon Market Intelligence & Forecasting	1.0	2.0	1.7	4.4	0.9	0.8	1.1	2.0	1.4	4.0	0.8
Biomass	Biomass Energy Systems	0.9	2.0	1.6	4.7	1.1	1.0	1.1	2.8	1.5	3.6	0.9
Biomass	Boilers and related Systems	0.6	1.3	1.1	3.1	0.8	0.6	0.8	1.8	1.1	2.4	0.6
Biomass	Manufacturing Of Boilers and Related Systems	0.2	0.5	0.4	1.1	0.3	0.2	0.3	0.7	0.4	0.9	0.2
Geothermal	Consulting & Related Services	0.5	1.1	0.9	2.6	0.6	0.5	0.6	1.4	0.8	1.9	0.4
Geothermal	Manufacture and Supply of Specialist Equipment	0.7	1.6	1.3	3.9	0.9	0.8	0.9	2.3	1.2	2.9	0.7
Geothermal	Suppliers of Systems	0.8	1.8	1.4	4.3	1.0	0.9	1.0	2.4	1.4	3.2	0.8
Geothermal	Whole Systems Manufacture	0.8	1.8	1.3	4.3	1.0	0.9	1.0	2.5	1.3	3.3	0.8
Photovoltaic	Other Related Equipment and Chemicals	0.2	0.5	0.4	1.2	0.3	0.3	0.3	0.7	0.4	0.9	0.2
Photovoltaic	Photovoltaic Cells	0.3	0.7	0.6	1.7	0.4	0.4	0.4	1.0	0.6	1.4	0.3
Photovoltaic	Systems & Equipment	1.2	2.7	2.1	6.5	1.5	1.3	1.5	3.6	2.1	4.9	1.2
Wind	Large Wind Turbine	1.2	2.7	2.1	6.2	1.5	1.3	1.5	3.7	2.0	5.0	1.2
Wind	Small Wind Turbine	0.9	2.1	1.7	5.2	1.2	1.0	1.2	2.9	1.6	3.8	0.9
Wind	Wind Farm Systems	1.1	2.4	1.8	5.7	1.3	1.2	1.3	3.2	1.8	4.2	1.0

At Level 3 greater levels of detail are created that reveal more niche export markets, i.e. Other Bio Fuels to India, Geothermal Suppliers of Systems to Pakistan and Thailand, Carbon Credit Trading to Taiwan and Wind Farm Systems to Hong Kong.

Table 19b: London's Level 3 Exports by Country for 2017/18 in £m

Level 2	Level 3	Iran	Italy	Japan	Malaysia	Mexico	Netherlands	Pakistan	Poland	Portugal	Romania	Russia
Recovery and Recycling	Waste Collection	0.1	0.5	0.5	1.0	0.3	0.6	1.6	1.0	0.4	0.6	0.5
Waste Management	Construction & Operation of Waste Treatment Facilities	0.1	0.6	0.7	1.4	0.4	0.8	2.2	1.3	0.6	0.8	0.6
Waste Management	Consultancy, Training and Education	0.1	0.2	0.3	0.5	0.1	0.3	0.8	0.5	0.2	0.3	0.2
Waste Management	Equipment For Waste Treatment	0.2	0.7	0.7	1.6	0.4	0.9	2.3	1.5	0.6	0.9	0.7
Waste Management	Technologies, Research & Development	0.1	0.4	0.4	0.9	0.2	0.5	1.3	0.8	0.3	0.5	0.4
Water & Waste Water Treatment	Engineering	0.1	0.3	0.3	0.7	0.2	0.4	1.0	0.6	0.3	0.4	0.3
Water & Waste Water Treatment	Water Treatment and Distribution	0.2	1.1	1.3	2.5	0.6	1.5	3.8	2.4	1.0	1.5	1.1
Alternative Fuel Vehicle	Alternative Fuels (main Stream) for Vehicles Only	0.1	0.7	0.8	1.6	0.4	0.9	2.5	1.5	0.6	0.9	0.7
Alternative Fuel Vehicle	Other Fuels and Vehicles	0.1	0.2	0.3	0.5	0.1	0.3	0.8	0.5	0.2	0.3	0.3
Alternative Fuels	Main Stream Bio Fuels	0.1	0.3	0.4	0.7	0.2	0.4	1.1	0.7	0.3	0.4	0.3
Alternative Fuels	Other Bio Fuels	0.2	1.0	1.1	2.2	0.5	1.3	3.5	2.1	0.9	1.3	1.1
Alternative Fuels	Other Fuels	0.0	0.2	0.2	0.5	0.1	0.3	0.8	0.5	0.2	0.3	0.2
Building Technologies	Doors	0.1	0.7	0.7	1.5	0.4	0.9	2.2	1.5	0.6	0.9	0.7
Building Technologies	Insulation and Heat Retention Materials	0.1	0.3	0.3	0.6	0.1	0.4	0.9	0.6	0.3	0.4	0.3
Building Technologies	Windows	0.2	1.1	1.2	2.4	0.6	1.5	3.8	2.3	1.0	1.5	1.1
Carbon Finance	Carbon Credits Finance & Fund Management	0.4	1.9	1.1	2.6	1.1	2.3	4.0	2.8	1.5	1.5	1.5
Carbon Finance	Carbon Credits Trading	2.2	10.9	7.6	18.1	6.6	16.5	31.1	21.1	5.3	11.8	11.3
Carbon Finance	Carbon Market Intelligence & Forecasting	0.1	1.1	1.0	2.0	0.5	1.1	2.8	1.9	0.9	1.2	0.9
Biomass	Biomass Energy Systems	0.2	1.0	1.1	2.2	0.5	1.3	3.4	2.1	0.9	1.3	1.0
Biomass	Boilers and related Systems	0.1	0.6	0.7	1.5	0.4	0.9	2.2	1.4	0.6	0.9	0.7
Biomass	Manufacturing Of Boilers and Related Systems	0.1	0.2	0.3	0.6	0.1	0.3	0.9	0.5	0.2	0.3	0.3
Geothermal	Consulting & Related Services	0.1	0.5	0.6	1.2	0.3	0.7	1.8	1.1	0.5	0.7	0.5
Geothermal	Manufacture and Supply of Specialist Equipment	0.2	0.8	0.9	1.8	0.4	1.0	2.7	1.6	0.7	1.1	0.8
Geothermal	Suppliers of Systems	0.2	0.9	1.0	2.0	0.5	1.2	3.0	1.9	0.8	1.2	0.9
Geothermal	Whole Systems Manufacture	0.2	0.9	1.0	1.9	0.5	1.2	3.0	1.9	0.8	1.2	0.9
Photovoltaic	Other Related Equipment and Chemicals	0.1	0.3	0.3	0.6	0.1	0.3	0.9	0.5	0.2	0.3	0.3
Photovoltaic	Photovoltaic Cells	0.1	0.4	0.4	0.8	0.2	0.5	1.2	0.8	0.3	0.5	0.4
Photovoltaic	Systems & Equipment	0.3	1.3	1.5	2.9	0.7	1.7	4.5	2.8	1.2	1.8	1.4
Wind	Large Wind Turbine	0.3	1.3	1.5	2.9	0.7	1.7	4.4	2.7	1.1	1.8	1.3
Wind	Small Wind Turbine	0.2	1.0	1.1	2.3	0.5	1.4	3.6	2.2	0.9	1.4	1.1
Wind	Wind Farm Systems	0.2	1.1	1.3	2.6	0.6	1.5	4.0	2.5	1.1	1.6	1.2

Table 19c: London's Level 3 Exports by Country for 2017/18 in £m

Level 2	Level 3	Saudi Arabia	Singapore	S Africa	S Korea	Sweden	Taiwan	Thailand	Turkey	UAE	US
Recovery and Recycling	Waste Collection	1.2	1.0	0.5	0.5	0.3	1.6	1.6	1.0	0.9	0.3
Waste Management	Construction & Operation of Waste Treatment Facilities	1.6	1.3	0.7	0.7	0.4	2.3	2.2	1.4	1.2	0.5
Waste Management	Consultancy, Training and Education	0.6	0.5	0.2	0.3	0.2	0.8	0.8	0.5	0.5	0.2
Waste Management	Equipment For Waste Treatment	1.7	1.4	0.7	0.8	0.5	2.4	2.4	1.5	1.3	0.5
Waste Management	Technologies, Research & Development	1.0	0.8	0.4	0.4	0.3	1.3	1.3	0.8	0.7	0.3
Water & Waste Water Treatment	Engineering	0.8	0.6	0.3	0.3	0.2	1.0	1.0	0.7	0.6	0.2
Water & Waste Water Treatment	Water Treatment and Distribution	2.8	2.3	1.1	1.3	0.8	4.0	4.0	2.4	2.2	0.8
Alternative Fuel Vehicle	Alternative Fuels (main Stream) for Vehicles Only	1.7	1.5	0.7	0.8	0.5	2.5	2.5	1.5	1.4	0.5
Alternative Fuel Vehicle	Other Fuels and Vehicles	0.6	0.5	0.2	0.3	0.2	0.8	0.8	0.6	0.5	0.2
Alternative Fuels	Main Stream Bio Fuels	0.8	0.6	0.3	0.3	0.2	1.2	1.1	0.7	0.6	0.2
Alternative Fuels	Other Bio Fuels	2.5	2.1	1.1	1.1	0.7	3.5	3.3	2.2	1.9	0.7
Alternative Fuels	Other Fuels	0.6	0.5	0.2	0.3	0.2	0.8	0.8	0.5	0.4	0.2
Building Technologies	Doors	1.8	1.4	0.7	0.8	0.5	2.4	2.3	1.4	1.2	0.5
Building Technologies	Insulation and Heat Retention Materials	0.7	0.6	0.3	0.3	0.2	1.0	1.0	0.6	0.5	0.2
Building Technologies	Windows	2.7	2.3	1.1	1.2	0.8	3.8	3.8	2.4	2.1	0.8
Carbon Finance	Carbon Credits Finance & Fund Management	4.9	3.7	1.6	1.8	1.1	6.2	5.1	4.5	3.9	1.0
Carbon Finance	Carbon Credits Trading	25.0	24.0	7.5	13.9	5.6	47.7	41.7	14.2	15.4	9.7
Carbon Finance	Carbon Market Intelligence & Forecasting	2.7	1.9	1.1	0.9	0.7	3.5	3.1	1.7	1.9	0.6
Biomass	Biomass Energy Systems	2.3	2.0	1.0	1.0	0.7	3.4	3.4	2.2	1.9	0.7
Biomass	Boilers and related Systems	1.7	1.3	0.7	0.7	0.5	2.3	2.3	1.4	1.3	0.5
Biomass	Manufacturing Of Boilers and Related Systems	0.6	0.5	0.2	0.3	0.2	0.9	0.9	0.6	0.5	0.2
Geothermal	Consulting & Related Services	1.3	1.1	0.5	0.6	0.4	1.8	1.8	1.1	1.0	0.4
Geothermal	Manufacture and Supply of Specialist Equipment	2.0	1.6	0.8	0.9	0.5	2.7	2.7	1.8	1.5	0.6
Geothermal	Suppliers of Systems	2.2	1.9	0.9	1.0	0.6	3.1	3.1	2.0	1.7	0.6
Geothermal	Whole Systems Manufacture	2.1	1.8	0.8	1.0	0.6	3.0	3.1	1.9	1.7	0.6
Photovoltaic	Other Related Equipment and Chemicals	0.6	0.5	0.3	0.3	0.2	0.9	0.9	0.5	0.5	0.2
Photovoltaic	Photovoltaic Cells	0.9	0.8	0.4	0.4	0.3	1.2	1.2	0.8	0.7	0.2
Photovoltaic	Systems & Equipment	3.4	2.7	1.3	1.4	0.9	4.5	4.6	2.8	2.5	0.9
Wind	Large Wind Turbine	3.3	2.7	1.3	1.4	0.9	4.5	4.5	2.8	2.5	0.9
Wind	Small Wind Turbine	2.6	2.1	1.0	1.2	0.7	3.6	3.6	2.3	2.0	0.7
Wind	Wind Farm Systems	2.8	2.4	1.2	1.3	0.8	4.1	3.9	2.5	2.2	0.9

Appendix 3

LCEGS Sector Definition

The **Low Carbon and Environmental Goods and Services** (LCEGS) is divided into three Level 1 sub-sectors - Environmental, Renewable Energy and Low Carbon. These are in turn divided into 24 Level 2 sub-sectors:

- The Environmental sub-sector is made up of the following: Air Pollution Control, Contaminated Land Reclamation & Remediation, Environmental Consultancy, Environmental Monitoring, Marine Pollution Control, Noise & Vibration Control, Recovery & Recycling, Waste Management and Water Supply & Waste Water Treatment.

- The Renewable Energy sub-sector is made up of the following: Biomass, Geothermal, Hydro, Photovoltaic, Renewable Energy Consultancy, Wave & Tidal and Wind.

- The Low Carbon sub-sector is made up of the following: Additional Energy Sources, Alternative Fuels & Vehicles, Alternative Fuels, Building Technologies, Carbon Capture & Storage, Carbon Finance, Energy Management and Nuclear Power.

Environmental activities include 9 Level 2 sub-sectors, divided into 47 Level 3 activity groupings:

- Air Pollution includes indoor and industrial air quality and emissions control.
- Contaminated Land Reclamation/Remediation includes Decommissioning of Nuclear Sites.
- Environmental Consulting includes consulting, training & other services.
- Environmental Monitoring includes analysis, monitoring and instrumentation.
- Marine Pollution and Noise & Vibration Control both include abatement, consulting and R&D.
- Recovery & Recycling includes Waste Collection and various recycling processes
- Waste Management includes Waste Treatment Facilities & Equipment, consulting and R&D
- Water Supply and Waste Water Treatment includes treatment, distribution, consulting and R&D.

Low Carbon includes 8 Level 2 sub-sectors, divided into 49 Level 3 activity groupings:

- Carbon Finance includes Credits Finance, Fund Management, Trading and Research
- Carbon Capture & Storage includes Capture, Pipeline, Storage and Engineering.
- Energy Management includes Lighting, Heating & Ventilation and Engineering.
- Nuclear Power includes Construction, Commissioning, Operations, Engineering and Testing Services.
- Additional Energy Sources include Energy Storage Research, Fuel Cells & Hydrogen.
- Alternative Fuels & Vehicles includes main stream and other vehicle fuels.
- Alternative Fuels includes Main Stream and other Bio Fuels, Batteries and Other Fuels.
- Building Technologies includes Doors, Windows, Monitoring & Control Systems and Insulation/Heat Retention Materials.

Renewable Energy includes 7 Level 2 sub-sectors, divided into 30 Level 3 activity groupings:

- Wind includes Large Turbines, Small Turbines and Wind Farm Systems.
- Wave & Tidal includes Ebb & Flood, Pumps & Equipment, Turbine & Generation etc.
- Photovoltaic includes Systems & Equipment, Cells and Chemicals.
- Hydro includes Turbines, Pumps, Electricity Supply and Dams.
- Geothermal includes Whole Systems, Specialist Equipment, Consulting and R&D.
- Biomass includes Energy, Furnace, Boilers and Related Systems.
- Renewable Energy consulting includes specialist consulting and legal advice.

Further detail on the Level 2 sub-sectors are provided below in their Level 1 groupings:

Environmental

Air Pollution Control sub-sector includes a wide range of manufacturing, operations, consulting and engineering functions that relate to improving and maintaining air quality. It includes:

- Emission Control sensing and monitoring systems and technologies.
- Indoor Air Quality Control (domestic and industrial) through ventilation, cooling and purification systems.
- Dust & Particulate control through installed technologies like filters, towers, scrubbers, cyclones and eliminators.
- Process Engineering for odour control and other cleaner technologies.
- Industrial Emission Control technologies and equipment (manufacture, installation, operations and maintenance).
- Emission Control through manufacture, installation and operation of sampling, control and evaluation systems.

Contaminated Land Reclamation and Remediation sub-sector includes all activities that bring land back into agricultural, industrial, community or commercial use. This includes longer term activities like the decommissioning of nuclear sites.

Remediation and land reclamation include land forming, bunds, geotextiles, storage & containment, oil interceptors, drainage systems, monitoring systems, proprietary treatment processes, sampling & analysis, site investigation, specialist cleaning services, cleaner technology R&D, surface & ground water services, organic waste composting and other services.

Decommissioning includes equipment, consulting, project management, safety critical assessment, pollution control, enviro risk analysis & impact assessment, recycling & compaction, waste collection & containment, waste water treatment, site assessment, excavation, sampling & analysis and monitoring.

Environmental Consulting and Services sub-sector includes consulting, training and management services that are specific to the environmental sector. It includes:

- Specialist consulting - habitat assessment, regulations, compliance and management systems, audits and impact assessment, eco design, eco-investment, climate change modelling, insurance and bio-diversity advice & assessment.

- Manpower and executive recruitment, temporary and permanent recruitment, contracted and interim management services.
- Management services - general consulting, financial, IT, software and marketing services.
- Training and education - publications, online publications, teaching aids, newsletters and courses for waste management, waste water treatment etc.

Environmental Monitoring, Instrumentation and Analysis sub-sector includes activities that measure water, soil and air quality and that support wider pollution control activities in other land, water, marine or air- based environmental sub-sectors. It includes:

- Environmental monitoring- development of cleaner monitoring processes and technologies, vehicle testing, oil spill detection, food testing, nitrate levels, meteorological, water/soil/air quality testing and monitoring.
- Instrumentation equipment & control manufacture, supply, maintenance and development of instrumentation, laboratory equipment and software for environmental/ air/ water/ land/ marine analysis.
- Environmental analysis - laboratory testing, data logging & recording, quality reporting, collection & collation of samples, auto sampling systems, in-field measurement and reporting and R&D in water, soil and emissions analysis.

Marine Pollution Control sub-sector includes responses to pollution hazards at sea and also discharged from land-based sources. It includes the following products and services for deep sea, coastal waters and inland waterways. It includes:

- Marine pollution abatement - manufacture, supply and maintenance of booms, chemical discharge treatment equipment, solid & liquid waste/radioactive containment and treatment equipment and monitoring services, spillage clean-up services, shoreline & shallow water remediation and maintenance services and collection & containment services.
- R&D - cleaner processes and technologies, monitoring systems, oil absorbents, boom and containment systems, water containment and treatment technologies.
- Specialist consulting and training - chemical discharge prevention, education, policy & planning, training, publications, sewerage discharge management, radioactive waste management and solid and liquid waste management.

Noise & Vibration Control sub-sector includes all activities that prevent or control noise and vibration pollution. It includes:

- Noise abatement - manufacture, supply, installation and maintenance of barriers, acoustic management equipment, noise insulation, noise & vibration control and monitoring equipment, acoustic management equipment, noise insulation materials, monitoring services, large plant services and surface modifications.
- R&D - noise attenuation, noise sensing, vibration sensing, vibration control and noise & vibration abatement equipment and cleaner technologies and process by development.
- Consulting and training - consulting, publications, training and noise monitoring services.

Recovery & Recycling sub-sector includes all activities relating to the collection and processing of domestic and industrial waste products. It includes:

- Waste collection - manufacture, supply, installation and operation of equipment and services for collection of household, industrial and hazardous waste, treatment of waste prior to landfill and supply of pre-treated recyclates.

- Engineering & equipment - engineering services and process control for the complete range of recycling stock
- Consulting & training - collection and processing consultancy and training, publishing, legal & insurance advice.
- R&D - metals recovery, pyrolysis, bio-based systems, new recyclable materials, new collection & processing technologies.
- Recycling stock - recovery, recycling, processing, sorting, supply and packaging of rubber, plastics, paper, oil, electrical, electronics, glass, composting, construction & demolition, automotive, wood and textiles stocks.

Waste Management sub-sector includes the treatment/management of domestic and industrial waste that cannot otherwise be recycled. It includes:

- Construction & operation of waste treatment facilities for anaerobic digestion, composting, incineration, landfill, waste to energy conversion and the supporting engineering services.
- Equipment for Waste treatment, manufacture, supply, installation and maintenance of bio filters, bio reactors, collection equipment, grease traps, oil interceptors, materials processing equipment, monitoring & control equipment and nightsoil & landfill leachate treatment.
- R&D - incineration technologies, energy from waste systems, cleaner processing & treatment technologies, disposal of hazardous waste and other materials processing technologies.
- Consultancy and training - books, periodicals & publications, specialist consulting and training for asbestos, hazardous materials and other waste management systems.

Water Supply and Waste Water Treatment sub-sector includes activities relating to the treatment of pollutants in the water supply. It includes:

- Water treatment and distribution, manufacture, supply, installation and maintenance of systems for activated sludge, aerobic & anaerobic treatment, biological odour & corrosion control, demand management & leakage reduction, effluent treatment, filters, microbial treatment, screens, sequencing batch reactors, water disinfection and storm/grey water treatment.
- Engineering - field engineering, pipe & valve maintenance, fitting & construction, fabrication & welding and engineering design.
- R&D - water purification, water management, black/grey water treatment, biocides, bio reactors and aerobic/anaerobic treatment technologies.
- Consulting and training - engineering and water management training, publishing and specialist consulting for water systems treatment, management and engineering.

Renewable Energy

Biomass Energy sub-sector includes all activities that convert biomass into energy but excludes biomass materials (see Alternative Fuels). It includes:

- Biomass furnace systems - manufacture, supply, consulting, design, installation, engineering and other services for domestic, industrial and community applications.
- Biomass energy systems - manufacture, supply, consulting, design, installation, engineering and other services for domestic, industrial and community applications.

- Manufacture of biomass boilers and systems including boilers, cogeneration, heat exchange and packaged power systems for domestic, industrial and community applications.
- Biomass boilers and related systems including supply, consulting, design, engineering, installation and other services for boilers, cogeneration, heat exchange and packaged power systems for domestic, industrial and community applications.
- Technical and operational consulting.

Geothermal Energy sub-sector includes all activities relating to the extraction and use of heat generated from the earth. It includes:

- Manufacture and supply of specialist thermally enhanced equipment - grout, heat pumps, pipes, flow control valves, drilling equipment, installation rigs and ancillary equipment.
- Whole systems manufacture and supply for industrial, residential and community geothermal energy applications.
- Component design and research - design services, component research and component recycling.
- Consulting & related services - architectural, construction, systems design, consulting, engineering, installation and project development services.

Hydroelectric Energy sub-sector includes activities that help to extract energy from river and other water sources held in dams (as opposed to wave or tidal energy) that is used to drive turbines and generators. Large scale civil engineering/construction activities associated with dam building have not been included in this analysis. It includes:

- Turbines - manufacture, supply, installation and maintenance of turbine generators, control systems, spares and structural supports and fittings.
- Dams & structures - manufacture, supply, installation and maintenance of dam operational systems, control systems, maintenance services and sluice gates and actuators.
- Pumping & lubrication - manufacture, supply, installation and maintenance of pumps, spares, storage and lubrication systems and spares.
- Electricity supply - manufacture, supply, installation and maintenance of power factor, power distribution and grid connections and supporting structures.

Nuclear Power sub-sector includes all activities that relate to the generation of nuclear power, excluding decommissioning of nuclear sites. It includes:

- Nuclear safety engineering services, regulatory compliance, reactor management, fail-to-safety engineering.
- Nuclear power plant operations management, engineering and PR.
- Nuclear cooling equipment - manufacture, installation and maintenance.
- Construction of plant and equipment - site development, reactor and buildings and power plant/equipment construction.
- Commissioning engineering services - cooling & thermal control, engineering maintenance, instrumentation, power distribution, reactor & plant commissioning.
- Sampling & testing services - thermal control testing, remote monitoring, back-up plant monitoring and effluent discharge testing.
- Nuclear scientific services - research, laboratory testing and fuel management.

Photovoltaic Energy sub-sector includes all activities that help to convert solar radiation into useable energy. It includes:

- Chemicals - production and supply of solar chemicals and solar pond salt.

- Systems & equipment - manufacture, supply, installation and maintenance of active and batch systems, clerestory windows, light shelves and tubes, solar box cookers, solar combi-systems and solar lighting design.
- R&D - solar power and solar car research.
- Photovoltaic cells - manufacture, supply, installation and maintenance of photovoltaic modules, mounting systems, ancillary components, cells and cell materials.
- Other equipment & chemicals - manufacture, supply, installation and maintenance of glass houses, convection towers, heliostats, parabolic collectors, turbines, trough collectors, towers and solar trackers.

Renewable Energy Consulting sub-sector includes consulting and legal services specific to Renewables i.e. not included in general or specific environmental consulting. It includes:

- Legal services - wind farm location and other renewable energies.
- Consulting - turbines, solar and photovoltaic applications, public sector and corporate Renewables policies, nuclear energy, insulation technologies and alternative fuel technologies.

Wave & Tidal Energy sub-sector includes all activities that help to convert the energy from waves and tides into usable power (also known as marine renewable energy). It includes:

- Turbines & generators - the manufacture, supply, installation and maintenance of tidal turbines, structural supports and fittings, spares and turbine control systems.
- Pumps & equipment - the manufacture, supply, installation and maintenance of pumps and pump spares.
- Two basin schemes - provision of structural engineering and field maintenance services.
- Ebb & flow systems - manufacture, supply, installation and maintenance of ebb and flood generation systems.
- Assessment & Measurement - waves, water levels, turbidity, tidal energy, sediment, salinity pollutants, fish stocks monitoring and local/ global environmental impact assessment.
- Other general services - financial planning, operational and maintenance services.

Wind Energy sub-sector includes all activities that convert wind power into usable energy. This includes wind farm systems, large and small wind turbines. The sub-sector is divided by size of turbine rather than location (onshore and offshore) because it is easier to differentiate and map supply chain activities in this way. It includes:

- Wind farm systems - manufacture, supply, installation, operation and maintenance of integration, power plant, power control, grid entry equipment and systems and electrical and mechanical componentry.
- Small wind turbines - manufacture, supply, installation, operation and maintenance of small turbine systems (blades, towers, fixing structures, cowlings, enclosures, gear boxes and drive trains), componentry and research.
- Large Wind Turbines - manufacture, supply, installation, operation and maintenance of large turbine systems (blades, towers, fixing structures, cowlings, enclosures, gear boxes and drive trains), componentry and research.

Low Carbon

Additional Energy Sources sub-sector groups together R&D, Design and Prototyping activities relating to a range of new Low Carbon energy sources.

These energy sources include: Fuel Cells, Hydraulic Accumulators, Hydrogen, Molten Salt, Thermal Mass, Compressed Air, Superconducting Magnets and more general energy storage research.

This is a small sub-sector (in value and impact) because only energy sources that have a current economic footprint (i.e. trading) are included. This excludes a number of promising energy sources that are still in development and for which economic evidence is not yet available.

Alternative Fuel and Vehicles sub-sector includes Low Carbon Fuel and technology activities that relate to (predominantly) automotive transport. It is divided into Alternative Fuels (main stream) and Other Fuels and Vehicles. This sub-sector does not include bio diesel (see Alternative Fuels). It includes:

- Alternative Fuels includes the production, supply and distribution of Natural Gas (Compressed or Liquefied), Synthetic Fuel and Auto Gas (LPG, LP Gas or Propane).
- Other Fuels and Vehicles includes vehicle technologies and fuel sources that are still at an early stage.
- Research, Design, Development and Prototyping activities are included for: Hydrogen fuel cells and hydrogen internal combustion, Electric, Hybrid Electric, Steam powered, Organic waste fuel, Wood gas, Solar powered and Air, Spring & Wind powered vehicles.

Alternative Fuels sub-sector includes a wide range of Low(er) carbon fuel sources that are not included under Renewable Energy. It includes the manufacture, production, supply and distribution of:

- Batteries - chemicals, chargers, controllers, cables, connectors, containers, suppliers and testing equipment.
- Bio fuels for Vehicles - bio diesel, butanol, ethanol and vegetable oils.
- Mainstream Bio fuel applications (non-transport) - bio diesel, butanol and ethanol.
- Other Bio fuels - biomass, methane, peanut oil, vegetable oil, wood and woodgas.
- Other fuels - Hydrogen.

Building Technologies sub-sector includes main stream building materials and systems that contribute to reduced energy use and to lowering the carbon footprint of buildings. It includes:

- Windows - the manufacture, supply, distribution, installation and development of double glazed, electro chromatic, insulated alloy, honeycomb and triple glazed units.
- Doors - the manufacture, supply, distribution, installation and development of insulated alloy and plastic doors.
- Insulation and heat retention materials - the manufacture, supply, distribution, installation and development of insulation materials, heat retention surfaces & ceramics, electronic control systems and controlled venting and ducting systems.
- Monitoring and control systems - the manufacture, supply, distribution, installation and development of energy and distributed energy control, monitoring, management and analysis systems.

Carbon Capture & Storage sub-sector includes activities that store carbon emissions - from locations like power plants and prevent them entering the atmosphere. It includes manufacturing, supply, distribution, installation, maintenance, development and design of:

- Pre combustion capture systems
- Post combustion capture systems
- Oxy-Fuel combustion systems
- Pipeline systems and services
- Ship storage and discharge systems
- Ocean storage equipment and services
- Mineral storage equipment and services
- Geological storage equipment and services
- Engineering, project management and consulting services.

Carbon Finance sub-sector includes investment activities and financial instruments for emission reduction projects and carbon trading. This includes:

- Carbon credits finance and fund management - land, project or general trading services from finance houses and investment funds.
- Carbon credits trading - development and supply of trading systems, land/project/general trading houses and transactions.
- Carbon market intelligence - carbon markets analysis & reporting and carbon trading by forecasting and reporting from journals, online, data providers or other publishing sources.
- Projects and verification - data collection, verification, legal, project development, capacity development and carbon declaration services.
- Press and journalism - financial press and periodicals, other journals, data providers and online services.

Energy Management sub-sector includes energy saving and power management activities for industrial and domestic use. It includes:

- R&D into high efficiency lighting, heating & ventilation, power, lighting, equipment & pumps and advance management systems.
- Gas Supply - monitoring, meterage, leak detection & maintenance, gas supply control and manufacture of high efficiency consumer equipment and devices.
- Lighting - manufacture, supply, distribution and installation of energy saving light bulbs & tubes, lighting and control systems.
- Heating & Ventilation - manufacture, supply, distribution and installation of energy saving equipment and systems.
- Electrical - manufacture, supply and installation of energy saving power control, building control, power consumption control & monitoring systems.
- Consulting and other services - advice & consultancy, publication, training and design of management systems.

Appendix 4

The kMatrix Methodology

2.1 Introduction

This sector (until 2015) has not been well documented by government statistics, so the methodology works beyond standard industrial and market classifications and looks for multiple sources of industrial-based evidence to quantify market values. kMatrix is unique in how it identifies, assembles, evaluates, monitors and develops rules for the use of those sources to quantify 'difficult-to-measure' markets.

Market activities are only included when there are multiple data sources. These sources are screened to remove duplicate references to any single source and then shortlisted by removing outliers and unreliable sources. This shortlist is then screened again until some consistency in value is achieved.

Market values created in this way are then "reality tested" by comparing these values within and across sectors, against known national/regional industrial specialism, across nations, against known trade flows and recognised industry benchmarks.

This methodology is quantitative and data intensive. Its uniqueness resides in the ability to manage and select reliable sources that are specific to each market activity. The data sources are global in nature and derive from government, private sector, institutional, industrial, trade, advertising, HR, financial, investor, academic and other (unpublished) sources. Up to 900 sources are used to compile the national LCEGS data set.

Sources are carefully managed. kMatrix measure and rate their sources' accuracy and reliability over time and exclude sources that are outdated or without a measurable track record. They use no less than seven qualified sources showing some consistency in results for deriving any values that they print. They create a mean value from these selected values and then assign a confidence level (generally of about 85%) based upon the spread of selected values around the mean

In contrast to most research or consulting reports kMatrix do not identify, copy and then acknowledge single data sources for specific tables or analytical comments. This is impossible for them to do because they multi-source every aspect of their data and then "transform" it into a new value. This makes single source attribution meaningless.

2.2 Measures

Throughout this dataset the focus is on a small number of key measures. To summarise, these are:

- **Sales** – This is the estimate (in £m) of economic activity by identified companies in a defined region within the supply/value chain for market products and services. The estimate is based upon where sales activity takes place rather than where it is reported.

- **Companies** – This is a measure of the total number of companies in a defined region that match, or fit within, the market activity headings.

- **Employment** – This is a measure of the estimated employment numbers across all aspects of the supply/value chain. National, regional and other economic data sources have been used to estimate current employment levels for each area of market activity.

- **Growth** – This is a multi-year measure that includes historical AND forecast growth. The growth measure is derived from live, rapidly changing and multi-sourced data links and is specifically based upon growth in Sales. Growth is generally a measure of increased market opportunity and can be used for trend analysis, comparison across different markets or as a moving indicator of market confidence (growth time series).

- **Exports** – This is a measure of products and services sold overseas and is calculated using in-country/out-of-country data and additional data from the logistics and freight forwarding industry.

2.3 kMatrix's Methodology

The methodology for sector analysis is definition and source-driven. The definition determines WHAT gets measured and the source model determines HOW it gets measured.

All of the data measures are multi-sourced and the process starts by defining the financial value of the sector (based upon our inclusive definition) from a wide variety of sources.

When kMatrix create a sector definition they always check that multiple sources of economic data exist for each included activity. This financial value is checked against existing sector values and also against the value of other economic sectors.

This is an iterative process that continues until they arrive at robust values and comparisons for all activities within the sector (comparative values of Wind vs. Photovoltaic vs. Biomass) that can then be meaningfully compared across global economies (UK vs. US vs. China etc.) and across different sectors (environmental consultancy vs. other specialist consulting activities). It is important that the methodology triangulates economic values in this way so that they:

a) Can exclude the research bias that often occurs from focusing on a single sector in a single country and
b) Ensure that they are effectively monitoring a sector that is still evolving by absorbing activities often included in other sectors.

Sales
The key measure that is used for financial value is Sales i.e. the value of sector products and services sold either to other businesses or directly to consumers from the geographically located company base, whether it be national, regional, sub-regional or Local Authority. This means that the analysis only includes activities where there is a measurable economic footprint. It does not include publicly-funded research or pre-commercial consumption of funds, except where those activities result in the purchase of product and services from third parties

As they derive the financial value for the sector they also assemble and assess the UK company base that is contributing to this value. In the first case they identify all "significant" or "specialist" companies, these are companies where LCEGS account for over 80% of company sales, and then the supply/value chain companies where LCEGS sales is an

important and measurable component of their overall sales - (over 20%). These percentages are indicative and vary for different LCEGS activities.

Companies
The company count acts as a further reality check on the financial value of the sector by comparing company turnover values in this and other sectors and also assists in the geographical analysis of where LCEGS value is created. For company counts and company listings we use standard data sources (FAME, Companies House etc), international sources, industry/trade sources, the advertising industry (YELL etc.) and, with caution, company-published information.

One important fact about the methodology is that in a typical SIC approach to sector analysis, a company is counted once and the value of its activities are very often assigned to a single category (which may or may not reflect what a company actually sells now), within a single sector and from a single geographical location.

This approach is to identify and assign value to different activities within a company that may fall within the same sector and to exclude values associated with different sectors. Where possible, they also break the reported activity down within larger multi-site companies so that only the value created within a region/LA is reported for that region/LA.

By analysing a sector in this way they are able to capture the economic value generated by all “specialist” and supply/value chain companies, without any double counting of value. However, the methodology does mean that a single company may contribute value to multiple activities and we have to be careful not to double-count companies. To avoid this we assign a company, for counting purposes, to the activity that accounts for most of its sector sales. This does mean that on some occasions some of the smaller activities in our analysis may have a financial value in the sales column but a zero in the company column.

Employment
When financial values and company numbers have been calculated the methodology then looks at the employment base for the sector. The analysis of employment includes HR/Recruitment industry data, trade/industry data, government statistics, company reported employment levels and a variety of industry benchmarks that show employee input ratios into different products and processes. They do not survey companies directly for this information.

From these different sources we calculate employment numbers for LCEGS sector activities, taking into account how staff can operate processes that produce products for different markets. We, therefore, measure our employment numbers in Whole Time Equivalents (WTE).

Growth
Sales Growth is both an historical and a forecast measure and the methodology applies the same multi-source rigour to assessing growth that has already occurred as to growth that may occur. Growth forecasting shows the importance of both multi sourcing AND tracking the historical reliability/accuracy of sources used. It is based upon continuous monitoring of forecast “opinions” that are constantly being updated and re-evaluated, as a result “in-year” measurements of predicted growth can vary depending on when the sample is taken and change as sources respond to events like recession.

For this reason we measure annual growth as a) a value frozen at a point in time and b) a time series (monthly or quarterly) measured throughout the year. In this file we include only the single (frozen) forecast. Separate files with detailed time series forecasts and trend analysis for the LCEGS sector are available.

Annual growth figures are useful in calculating and comparing the future contribution of sector activities beyond the current baseline. The percentage growth shows the RATE of change, the application of growth rates to the current sales baseline shows the IMPACT of change. Measuring the impact of change in financial terms shows how the ranking and importance of existing activities to the region/local authority may change over time and suggests when and where action may need to be taken to accommodate changes in the employment and company base.

The quoted growth rates in this dataset apply specifically to sales value. A growth in sales is indicative of changes in company numbers/employment but 5% sales growth does not necessarily equate to 5% employment growth. Companies can achieve growth in different ways and the recession has shown that companies will consume any “slack” before creating new jobs.

Geography
The methodology is designed to locate and measure economic activity at various geographical levels. The smallest unit of measurement is the Local Authority, but it can analyse data at county, sub-regional, LEP, regional and UK level.

When the methodology calculates and measures economic activity at the local authority level it takes into account existing local government boundaries, local GDP calculations and demographics, the postcode location of companies in the sector and any other local data that is available and relevant to the sector. When we measure sales and employment, therefore, our numbers are based upon where the business is located, rather than where people live.

There are some limits to what economic measures can be meaningfully or accurately applied at the local level. This is due to the range and specificity of data sources. Most of the economic development measures within this dataset can be accurately represented at a local level. Growth is an exception because rates cannot meaningfully be differentiated at a local level, therefore we apply regional growth rates throughout.

Appendix 5

LCEGS and Office of National Statistics Environmental Goods and Services Sector Comparison

The purpose of this appendix is to provide a brief description of some of the differences between the Office of National Statistics (ONS) Environmental Goods and Services Sector (EGSS) data and the LCEGS data provided by kMatrix. The two methodologies differ in the way data is collected, their methodologies, and in terms of their sector definitions.

kMatrix is a data house that specialises in providing evidential data for business modelling and analysis on a multi-sectoral basis. We provide back room services to the likes of Deloitte and PWC amongst others in the UK, New Zealand, Australia, US and the EU for sectoral analysis and due diligence for sectoral development and investment. We also provide our business and technology profiling services through these channels to market, as well as direct to universities for technology spinouts and individual businesses for development purposes. Further customers include government departments such as BEIS, Home Office and various local and regional government departments.

The ONS EGSS data is produced primarily for the purpose of national accounting. It is sector-specific, using narrow sector definitions and takes no account of the value or supply chains in a sector. In contrast, the kMatrix methodology was originally designed to help companies by measuring technologies or activities using small taxonomies, to assist with investment and developmental planning. This capability was expanded to provide market data for a number of economic sectors, by creating larger taxonomies to capture as much of the market as possible, including the supply and value chains. Each taxonomy for a sector will draw relevant activities from many other sectors, to fully capture all activity. In this way, the LCEGS taxonomy captures activities across multiple sectors and down the value and supply chains. This difference in *what* is being measured is the fundamental reason why the definitions used by ONS and LCEGS do not align.

The kMatrix methodology uses a unique process of ‘triangulation’ to measure metrics such as employment and other characteristics of a sector at varying levels of detail. This process has been developed over 30 years and has been adopted by various governments, universities and major corporates to provide economic industry data for hard to measure sectors. It is similar in concept to the triangulation of satellites to work GPS satellite navigation systems. The methodology uses multiple data points which can be economic or non-economic in origin, from a number of different sources to ‘triangulate’ the value of a product or service in question.

This process is different to the methodology used by the ONS to produce the EGSS data, predominantly because the ONS data relies on self-certification of companies into SIC codes, whereas the kMatrix methodology calculates values based on multiple sources of data. The ONS data is based on where companies choose to classify themselves. kMatrix data looks at the activities of companies and attributes those activities to different sub-sectors. In effect, the ONS system is limited to the ability or willingness of companies to list which sectors their products or services are used in, this method is likely to produce both over and underestimates of market size as companies will attribute more or less of their activities to relevant SIC codes. The kMatrix methodology does not rely on company cooperation but looks at their activities and breaks them down into the levels or sub-sectors they are relevant to.

The kMatrix process operates on a 'bottom up' basis, meaning we look at products and services delivered, rather than company classifications and turnover, which is classed as 'top down' (SIC system). The bottom up process was developed to assist individual companies based on sectoral analysis findings and provide evidential data and advice. By looking at the sector from the bottom up (by each activity, product or service), the sector can be determined in accordance with the relevant sector definition, whilst allowing the flexibility to 'add in' or 'opt out' of various activities depending on the purpose of the reporting. ONS data itself is not used to produce kMatrix figures, but the kMatrix values can be reported out through the ONS classification system if required.

Table 1 shows a comparison between employment analysis for the London region using the SIC classification methodology and the kMatrix methodology for the Manufacturing sector and the Construction sector.

Table 1: Comparison of 2011 - 2016 Employment Data for SIC and kMatrix in London

Methodology	**Sector**	**2011 Jobs**	**2012 Jobs**	**2013 Jobs**	**2014 Jobs**	**2015 Jobs**	**2016 Jobs**
SIC based	Manufacturing	106,750	108,250	106,750	112,000	108,000	105,250
SIC based	Construction	133,250	150,500	146,500	146,250	145,250	155,750
kMatrix	Manufacturing	137,351	135,943	138,951	141,873	140,308	131,230
kMatrix	Construction	166,629	195,334	177,915	184,022	184,317	199,038
Indexed numbers for the rows above show		100	101.4	100.0	104.9	101.2	98.6
that growth in the manufacturing and construction sectors is similar for both the SIC and kMatrix definitions		100	112.9	109.9	109.8	109.0	116.9
		100	99.0	101.2	103.3	102.2	95.5
		100	117.2	106.8	110.4	110.6	119.4

Sector - LCEGS is made up of elements from many different traditional sectors (including manufacturing, finance, construction, consulting and energy) therefore as a grouping it includes products and services from those sectors that together amount to the total value of the LCEGS grouping.

Scale - The ONS system only produces estimates of the sector size at the country level, whereas the LCEGS data can be provided by Country, Region, City, Local Authority etc.

Table 2 shows a summary of the main differences between the kMatrix data and the ONS EGSS data.

Table 2: kMatrix and ONS – EGSS Comparison Summary Table

	kMatrix - LCEGS	ONS - EGSS
Sector definition	The LCEGS sector includes the EGSS definition but expands it to include all activities that contribute and enable growth in the sector. Those elements which are excluded from EGSS which are produced for purposes that, while beneficial to the environment, primarily satisfy technical, human and economic needs or that are requirements for health and safety are included in LCEGS if they contribute to the sector. For more information please see Appendix 3 and Appendix 4 of this report.	The environmental goods and services sector is made up of areas of the economy engaged in producing goods and services for environmental protection purposes, as well as those engaged in conserving and maintaining natural resources. Excluded from the scope of EGSS are goods and services produced for purposes that, while beneficial to the environment, primarily satisfy technical, human and economic needs or that are requirements for health and safety.
Sector size measurement	Triangulation of data from multiple sources	Company surveys via company self-certification
Sector sales coverage	Full value of sales for the sector, including supply and value chain	Only sector sales, not including supply or value chains
Geographic range of coverage	Global, Country, Regional, City & Local Authority	Country
Available data includes	Sales, number of employees, number of companies, exports, growth rates (historical and forecast) & 60+ more metrics	Output, GVA, employee count and exports
For further information and detail on the ONS – EGSS definition: https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/ukenvironmentalaccounts/2010to2015		

Appendix 6

Additional Data for LCEGS Context and Comparison

The purpose of this appendix is to provide some additional data, generated using the kMatrix methodology and definitions, for London's economy and selected sectors to provide some context for the relative size of London's LCEGS and its contribution to London's wider economy. All this data has been generated using the kMatrix methodology and definitions so that it is directly comparable with the LCEGS data.

Table 1: Comparison of 2011 - 2016 Sales Data for SIC and kMatrix in London

Methodology	Sector	2013	2014	2015	2016	2017
SIC based GVA £m	Manufacturing	8,000	8,017	8,080	8,120	8,200
SIC based GVA £m	Construction	18,000	18,213	19,051	19,255	20,100
kMatrix Sales £m	Manufacturing	9,734	9,774	9,832	9,773	10,155
kMatrix Sales £m	Construction	22,572	22,249	23,296	23,268	25,109
Below are Indexed numbers showing that growth in the manufacturing and construction sectors is similar for both the SIC and kMatrix definitions						
SIC based GVA £m	Manufacturing	100	100.2	101.0	101.5	102.5
SIC based GVA £m	Construction	100	101.2	105.8	107.0	111.7
kMatrix Sales £m	Manufacturing	100	100.4	101.0	100.4	104.3
kMatrix Sales £m	Construction	100	98.6	103.2	103.1	111.2

Table 2: Comparison of overall London salesand LCEGS sales using kMatrix methodology

	kMatrix Total London Sales £m	kMatrix LCEGS £m	LCEGS as a % of kMatrix Total for London
2013	435,000	28,500	6.6%
2016	522,000	36,016	6.9%

Table 3: LCEGS compared to total London sales and employment – 2016/17

Sector defined and value estimated using kMatrix definitions & methodology	Sales (£m) – 2016/17	Employees – 2016/17
LCEGS	£36,016	224,659
Construction sector	£23,268	199,038
Manufacturing sector	£9,773	131,230
London Total	£522,000	5,730,000
LCEGS total as percentage of London total	6.9%	3.9%

Consulting and Legal activities within LCEGS

Tables 4 to 6 give the values for sales, number of employees and number of companies for those activities in the LCEGS sector which constitute consultancy or legal services (C&LS) for London and the UK.

Table 4: Sales (£m) for Consulting and Legal Services (C&LS) within LCEGS

Sales £m	Level 1	2015/16	Growth %	2016/17	Growth %	2017/18	Growth %
London	Environmental	288.4	-	301.8	4.6	316.9	5.0
	Low Carbon	66.7	-	70.2	5.3	74.4	5.9
	Renewable Energy	691.0	-	730.7	5.8	776.2	6.2
	Total	1,046.1	-	1,102.7	5.4	1,167.4	5.9
UK	Environmental	1,518.9	-	1,590.8	4.7	1,667.4	4.8
	Low Carbon	500.2	-	521.4	4.2	543.9	4.3
	Renewable Energy	3,031.3	-	3,199.5	5.5	3,379.9	5.6
	Total	5,050.4	-	5,311.7	5.2	5,591.2	5.3

Table 5: Number of Companies in Consulting and Legal Services (C&LS) within LCEGS

No. of Companies	Level 1	2015/16	Growth %	2016/17	Growth %	2017/18	Growth %
London	Environmental	108	-	113	4.2	118	4.5
	Low Carbon	35	-	37	5.4	39	5.9
	Renewable Energy	211	-	222	5.2	234	5.6
	Total	354	-	372	4.9	391	5.3
UK	Environmental	673	-	704	4.6	737	4.7
	Low Carbon	217	-	226	4.1	235	4.0
	Renewable Energy	1217	-	1,283	5.4	1,354	5.5
	Total	2107	-	2,213	5.0	2,326	5.1

Table 6: Number of Employees in Consulting and Legal Services (C&LS) within LCEGS

No. of Employees	Level 1	2015/16	Growth %	2016/17	Growth %	2017/18
London	Environmental	2,223	4.7	2,327	5.0	2,443
	Low Carbon	359	6.1	381	6.6	406
	Renewable Energy	4,802	5.6	5,068	5.9	5,368
	Total	7,384	5.3	7,777	5.7	8,217
UK	Environmental	11,382	6.4	12,114	4.5	12,665
	Low Carbon	3,182	2.6	3,264	4.5	3,410
	Renewable Energy	21,777	6.7	23,228	5.3	24,456
	Total	36,341	6.2	38,607	5.0	40,531

Tables 7 to 9 give the Total LCEGS, the value for Consulting and Legal Services and Consulting and Legal Services as a percentage of LCEGS for sales, number of companies and number of employees, for both London and the UK.

Table 7: Sales (£m) for Consulting and Legal Services (C&LS) as a percentage of Total LCEGS sales

Sales £m		2015/16	2016/17	2017/18
London	Total LCEGS	32,983.1	36,016.2	39,697.3
	Consulting and Legal Services	1,046.1	1,102.7	1,167.4
	C&LS as % of Total LCEGS	3.2%	3.1%	2.9%
UK	Total LCEGS	160,419.5	171,936.0	184,660.7
	Consulting and Legal Services	5,050.4	5,311.7	5,591.2
	C&LS as % of Total LCEGS	3.1%	3.1%	3.0%

Table 8: Number of Companies in Consulting and Legal Services (C&LS) as a percentage of Total Number of Companies in LCEGS

No. Companies		2015/16	2016/17	2017/18
	Total LCEGS	11,733	12,712	13,906
	Consulting and Legal Services	354	372	391
London	C&LS as % of Total LCEGS	3.0%	2.9%	2.8%
	Total LCEGS	63,571	67,807	72,478
	Consulting and Legal Services	2,107	2,213	2,326
UK	C&LS as % of Total LCEGS	3.3%	3.3%	3.2%

Table 9: Number of Employees in Consulting and Legal Services (C&LS) as a percentage of Total Number of Employees in LCEGS

No. Employees		2015/16	2016/17	2017/18
	Total LCEGS	207,049	224,659	246,073
	Consulting and Legal Services	7,384	7,777	8,217
London	C&LS as % of Total LCEGS	3.6%	3.5%	3.3%
	Total LCEGS	1,085,465	1,176,396	1,257,182
	Consulting and Legal Services	36,341	38,607	40,531
UK	C&LS as % of Total LCEGS	3.3%	3.3%	3.2%

Tables 10 to 12 give Consulting and Legal Services as a percentage of LCEGS at Level 1 for sales, number of companies and number of employees.

Table 10: Sales (£m) for Consulting and Legal Services (C&LS) as a percentage of Total LCEGS Sales – Level 1

		2015/16			2016/17			2017/18		
Sales £m	**Level 1**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**
London	Environmental	4,658.0	288.4	6.2%	4,823.1	301.8	6.3%	5,009.4	316.9	6.3%
	Low Carbon	17,920.2	66.7	0.4%	19,883.2	70.2	0.4%	22,293.6	74.4	0.3%
	Renewable Energy	10,404.9	691.0	6.6%	11,309.9	730.7	6.5%	12,394.3	776.2	6.3%
	Total	32,983.1	1,046.1	3.2%	36,016.2	1,102.7	3.1%	39,697.3	1,167.4	2.9%
UK	Environmental	28,072.0	1,518.9	5.4%	29,147.0	1,590.8	5.5%	30,280.7	1,667.4	5.5%
	Low Carbon	80,545.9	500.2	0.6%	86,382.3	521.4	0.6%	92,822.2	543.9	0.9%
	Renewable Energy	51,801.6	3,031.3	5.9%	56,406.6	3,199.5	5.7%	61,557.8	3,379.9	1.8%
	Total	160,419.5	5,050.4	3.1%	171,936.0	5,311.7	3.1%	184,660.7	5,591.2	3.0%

Table 11 Number of Companies in Consulting and Legal Services (C&LS) as a percentage of Total Number of Companies in LCEGS – Level 1

		2015/16			2016/17			2017/18		
No. Companies	**Level 1**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**
London	Environmental	2,018	108	5.4%	2,085	113	5.4%	2,160	118	5.5%
	Low Carbon	6,194	35	0.6%	6,829	37	0.5%	7,621	39	0.5%
	Renewable Energy	3,520	211	6.0%	3,797	222	5.8%	4,125	234	5.7%
	Total	11,733	354	3.0%	12,712	372	2.9%	13,906	391	2.8%
UK	Environmental	12,099	673	5.6%	12,548	704	5.6%	13,020	737	5.7%
	Low Carbon	32,240	217	0.7%	34,447	226	0.7%	36,883	235	0.3%
	Renewable Energy	19,231	1,217	6.3%	20,812	1,283	6.2%	22,575	1,354	3.7%
	Total	63,571	2,107	3.3%	67,807	2,213	3.3%	72,478	2,326	3.2%

Table 12: Number of Employees in Consulting and Legal Services (C&LS) as a percentage of Total Number of Employees in LCEGS – Level 1

		2015/16			2016/17			2017/18		
No. Employees	**Level 1**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**	**Total LCEGS**	**C&LS in LCEGS**	**C&LS as % of LCEGS**
London	Environmental	37,860	2,223	5.9%	39,166	2,327	5.9%	40,595	2,443	6.0%
	Low Carbon	100,764	359	0.4%	111,289	381	0.3%	124,443	406	0.3%
	Renewable Energy	68,425	4,802	7.0%	74,204	5,068	6.8%	81,035	5,368	6.6%
	Total	207,049	7,384	3.6%	224,659	7,777	3.5%	246,073	8,217	3.3%
UK	Environmental	215,521	11,382	5.3%	227,433	12,114	5.3%	235,974	12,665	5.4%
	Low Carbon	534,293	3,182	0.6%	579,242	3,264	0.6%	619,786	3,410	0.8%
	Renewable Energy	335,651	21,777	6.5%	369,721	23,228	6.3%	401,423	24,456	1.9%
	Total	1,085,465	36,341	3.3%	1,176,396	38,607	3.3%	1,257,182	40,531	3.2%

Table 13 gives London as a percentage of the UK for Consulting and Legal Services, to Level 1 for sales, number of companies and number of employees.

Table 13: London as a percentage of the UK for Consulting and Legal Services (C&LS) for sales, no. of companies and no. of employees – Level 1

		2015/16			2016/17			2017/18		
	Level 1	**London C&LS**	**UK C&LS**	**London as % of UK**	**London C&LS**	**UK C&LS**	**London as % of UK**	**London C&LS**	**UK C&LS**	**London as % of UK**
Sales £m	Environmental	288.4	1,518.9	19.0%	301.8	1,590.8	19.0%	316.9	1,667.4	19.0%
	Low Carbon	66.7	500.2	13.3%	70.2	521.4	13.5%	74.4	543.9	13.7%
	Renewable Energy	691.0	3,031.3	22.8%	730.7	3,199.5	22.8%	776.2	3,379.9	23.0%
	Total	1,046.1	5,050.4	20.7%	1,102.7	5,311.7	20.8%	1,167.4	5,591.2	20.9%
No. Companies	Environmental	108	673	16.1%	113	704	16.0%	118	737	16.0%
	Low Carbon	35	217	16.1%	37	226	16.3%	39	235	16.6%
	Renewable Energy	211	1,217	17.3%	222	1,283	17.3%	234	1,354	17.3%
	Total	354	2,107	16.8%	372	2,213	16.8%	391	2,326	16.8%
No. Employees	Environmental	2,223	11,382	19.5%	2,327	12,114	19.2%	2,443	12,665	19.3%
	Low Carbon	359	3,182	11.3%	381	3,264	11.7%	406	3,410	11.9%
	Renewable Energy	4,802	21,777	22.1%	5,068	23,228	21.8%	5,368	24,456	22.0%
	Total	7,384	36,341	20.3%	7,777	38,607	20.1%	8,217	40,531	20.3%

Global LCEGS

The Global value of the LCEGS sector, generated using the kMatrix methodology for 2017/18 was £5.89tn ($7.47tn) in 2017/18.