GLAECONOMICS

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How big is London's green sector?

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Transport for London

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GLA Economics provides expert advice and analysis on London's economy and the economic issues facing the capital. Data and analysis from GLA Economics form a basis for the policy and investment decisions facing the Mayor of London and the GLA group. The unit is funded by the Greater London Authority, Transport for London and the London Development Agency.

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The UN defines green jobs as: *"work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute(s) substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high efficiency strategies; de-carbonise the economy; and minimise or altogether avoid generation of all forms of waste and pollution."*

This is quite a comprehensive definition. A banker arranging carbon trades would be included and so would someone sorting rubbish for recycling. Moreover, when people use the terms green jobs or green technology it is often hard to know exactly what they mean by these. In turn this means that the 'green sector' is a hard thing actually to measure.

This note starts to address this issue. It first of all identifies those activities which can be said to be 'mostly green' and assesses how large they are in London. It then also reviews what is missing and the problems that are likely to be involved in addressing the gaps. For example, it is hard to find the green bankers and separate them from the ordinary kind using the normal statistical sources. We start with the core activities.

Definition of the sector

Defining the green sector presents a number of problems. The sector is diverse in its nature and does not fit easily within any existing Standard Industrial Classification (SIC) structure, particularly the 2003 SIC which has to be used to create any kind of time series. Many different definitions have been used by studies in the past and some of these have been very broad. For example, a wish to bring into the definition those working in environmental consultancy has persuaded some studies to include all consultants – which clearly over-estimates the size of the sector.

The advantage of using a SIC-based approach is that it can be replicated easily although there are major shifts in classification between SIC 2003 and SIC 2007 with regard to activities which could be classified as environmental services. However, historically, there have been wide differences in the approach to classification. For example, the LDA definition has relatively little overlap with that used by the Department of Business, Innovation and Skills (BIS)/the Department for Environment, Food and Rural Affairs (DEFRA).

The approach taken here is to define a 'core' sector whilst not disputing that there are many employed beyond this core sector who are employed in growing areas of environmentally-related industry such as environmental consultants, carbon traders, those fitting insulation, researchers in academic institutions etc. Furthermore, many of the issues about the greening of the economy are about 'green jobs' rather than just the 'green sector'.

The inclusion or exclusion of a SIC code is of marginal importance unless that SIC code includes a significant number of employees. Therefore the following classification could easily be disputed at the margins but the general picture of employee numbers probably applies for the core sector.

Table 1: Assumed definition of the environmental and green sector

SIC (2003) code	General description
0141	Agricultural services activities
0201	Forestry & logging
0202	Forestry & logging service activities
3120	Manufacture of electrical distribution & control appliances
3710	Recycling of metals
3720	Recycling of non-metals
4100	Collection, purification & distribution of water
5157	Wholesale of waste scrap
9001	Collection & treatment of sewage
9002	Collection &treatment of other waste
9003	Sanitation & remediation

Source: Experian, UK CEED and Orion Innovations for the LDA

The definition outlined in Table 1 takes as a start point the core areas identified by the LDA 'Green Alchemy' report[1], the core areas of the working definition operated by BIS and DEFRA and the basics of the 'narrow definition' used by Experian/Orion and UKCEED in their report for the LDA[2]. Note that that report also produced a broader variant of the sector but this was based on YELL classifications rather than SIC codes and cannot be replicated easily.

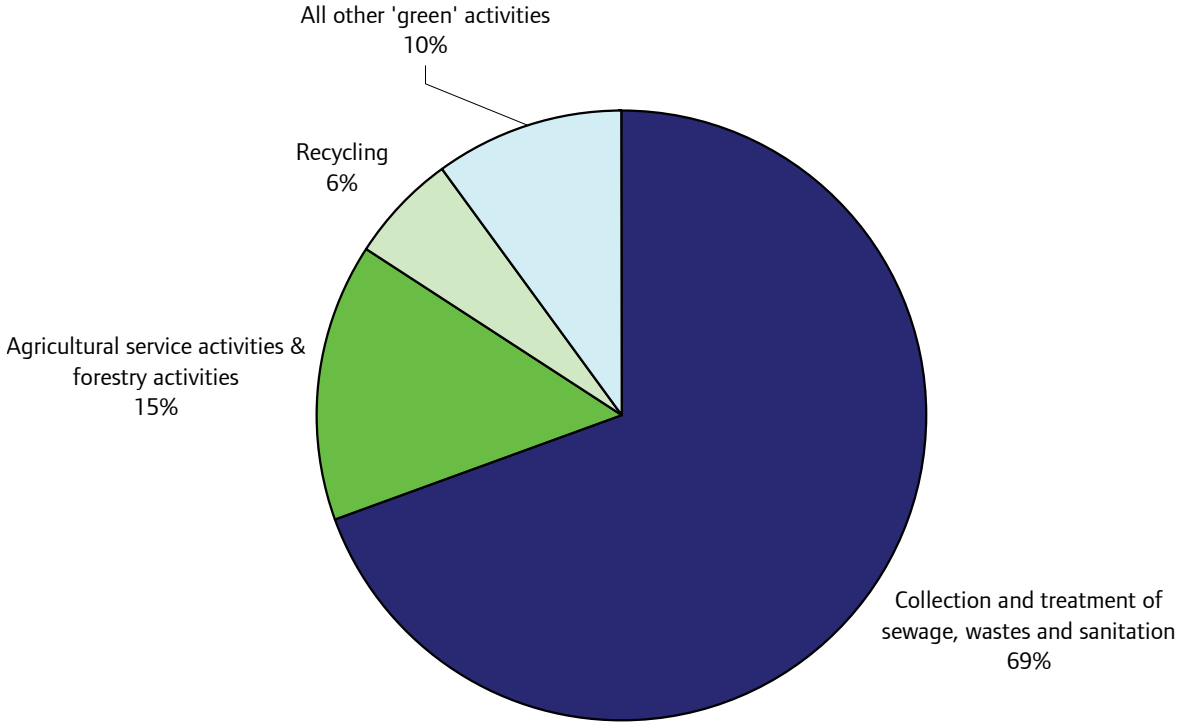
Current employee jobs in the sector in London

The definition outlined above suggests that London's Annual Business Inquiry (ABI) employees in the sector currently number around 25,000 or around 0.6 per cent of London's total employee jobs. Self-employment (which is not included in ABI data) may be considerable in some sub-sectors of the green economy.

This 25,000 probably includes very few people currently employed in areas of activity generated by the Mayor's own environmental programme. These have been separately estimated by Ernst and Young for the LDA[3]. On account of the narrow definition used above, the majority of employees in the environmental and green sector are actually employed in the relatively 'unglamorous' areas of sewage and refuse disposal. In fact, 9 per cent of London's green sector employee jobs is in the collection and treatment of sewage, 47 per cent in the collection and treatment of other wastes and 13 per cent in sanitation, remediation and similar activities. London's agricultural services component is (as would be expected) very small in comparison to other regions of Great Britain but still accounts for a significant share of employee jobs as shown in Figure 1.

[1] See ' Research Summary: Green Alchemy – turning green to gold' – Brook Lyndhurst for London Development Agency, Jan. 2004.
[2] 'The commercial opportunity for London businesses in the environmental sector'' (Jul 2008).
[3] 'Prospectus for London, the Low Carbon Capital', Ernst & Young report for LDA, 2009.

Figure 1: Internal breakdown of ABI employees by broad sub-area of economic activity in London



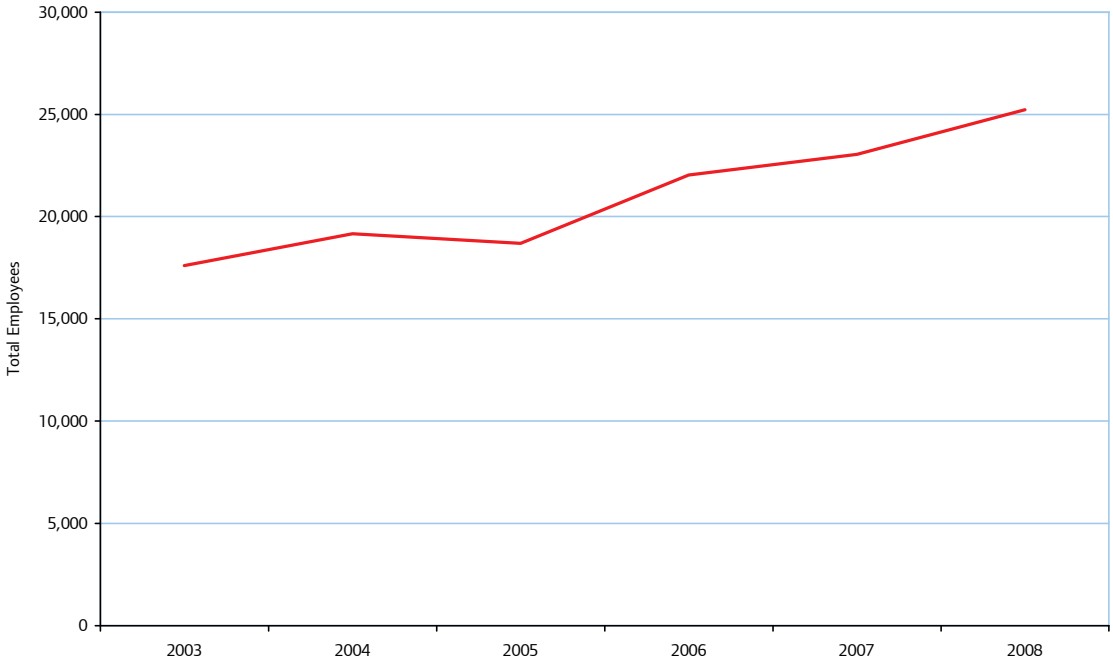
Source: ONS - ABI

The new Standard Industrial Code classification system, SIC 2007, has a markedly more detailed breakdown of consultants which will help to identify consultancy employees specifically working on environmental issues although it will not solve this problem.

Historic time series of employee jobs

In spite of the limitations of the definition, the number of employee jobs in the sector has risen more rapidly than that across 'all industries' in London.

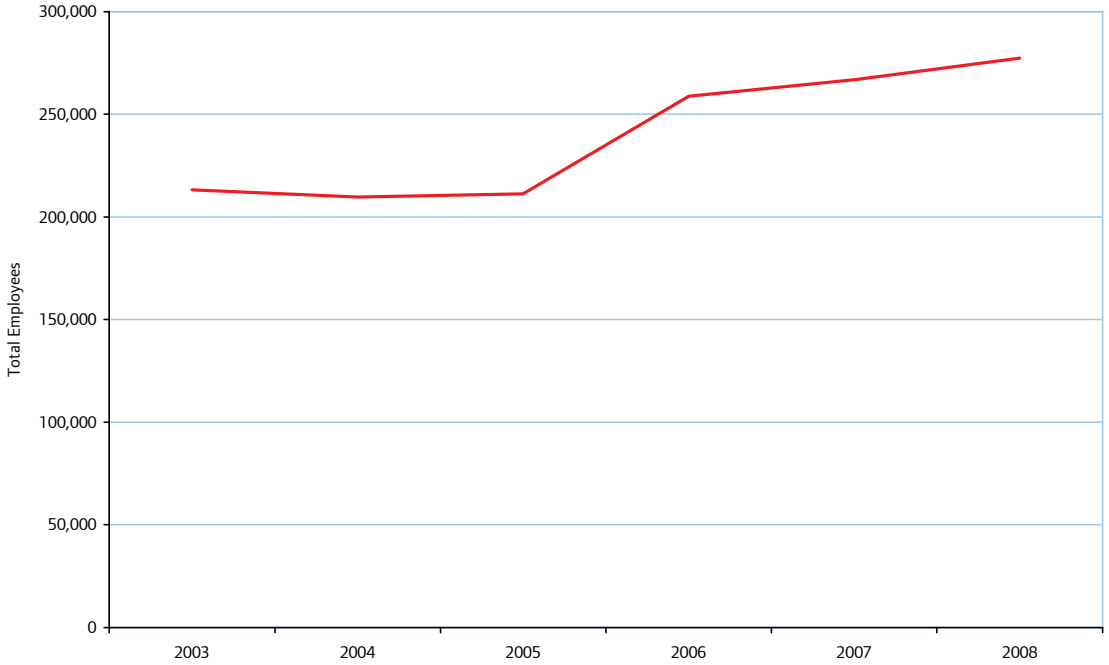
Figure 2: Employee jobs in London's environmental and green sector, 2003 - 2008



Source: ONS, ABI

Back in 2003 the sector represented 0.4 per cent of all employee jobs in London. The rate of growth since 2003 is broadly similar to that in the sector across Great Britain as a whole, which is shown in Figure 3.

Figure 3: Employee jobs in Great Britain's environmental and green sector, 2003 - 2008



Source: ONS, ABI

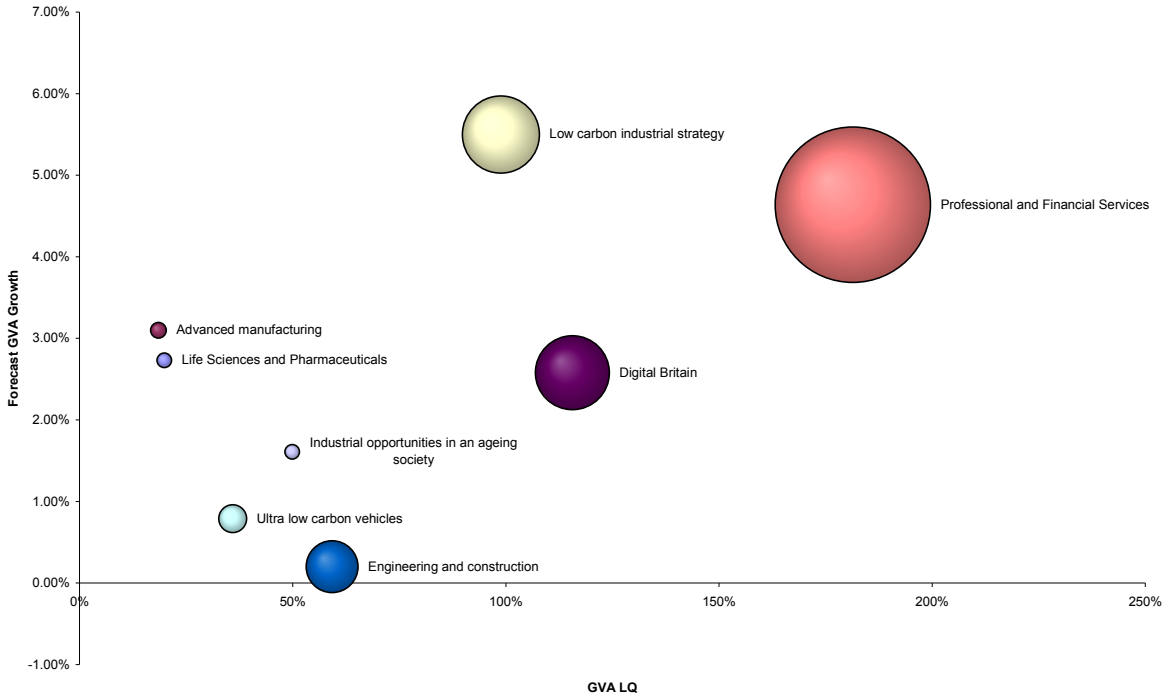
Why the 'sector definition' approach does not suffice

Of course, it would be a false assumption to assume that more 'ideas-based' environmental activities have only grown at the same rate as activities such as water purification. Given data limitations, it is impossible to estimate these 'hidden' environmental activities at present via this methodology. However, some estimates of the growth of retrofitting-type activities is possible although, again, separating out displacement of existing jobs is a complex matter. Most of these jobs are likely to be generated in sectors such as construction – which, again, will not be picked up by the definition of the 'sector' outlined in Table 1. Sectors such as Information and Communications Technology also have a huge role to play in the greening of the economy and London's role in research and development is also important.

The fact that the methodology outlined earlier in this paper to estimate the importance of London's environmental and green sector fails to reflect the situation accurately is demonstrated by the findings of Ernst and Young's Low Carbon London Phase II project. This shows that London's specialisms are in activities not captured by the SIC definition at all. London's sectors identified as having comparative advantage in terms of GVA-based industrial location quotient are the professional and financial services, low carbon industry and digital industry. Furthermore, these specialisms in London tend to be in higher value added activities meaning that they are best examined in terms of estimated output rather than employment as shown in Figure 4. These findings are broadly in-line with the findings of GLA Economics' own Economic Evidence Base for the Tripartite Strategies[4].

[4] Economic Evidence Base, GLA Economics, 2010.

Figure 4: Comparative advantage and growth opportunities in the London low carbon sector[5]



Source: LDA/Ernst & Young

Ernst & Young estimates that the Greater South East (including London) has some 42 per cent of Great Britain's 'low carbon' employment and that London dominates this in terms of low carbon research. Table 2 shows estimates produced by Ernst & Young defining London's market attractiveness for the low carbon sector.

[5] The GVA industrial location quotient can be calculated as follows where G= GVA, L= London, B = Great Britain, e= the environment sector, a = all sectors.
GVA ILQ= $((G^e_L/G^a_L)/(G^e_B/G^a_B))*100$
An index above 100 indicates that GVA is higher in London than would be expected simply on the basis of the 'all sectors' GVA of London compared to that of Great Britain. The size of the bubble indicates the relative overall size of GVA.

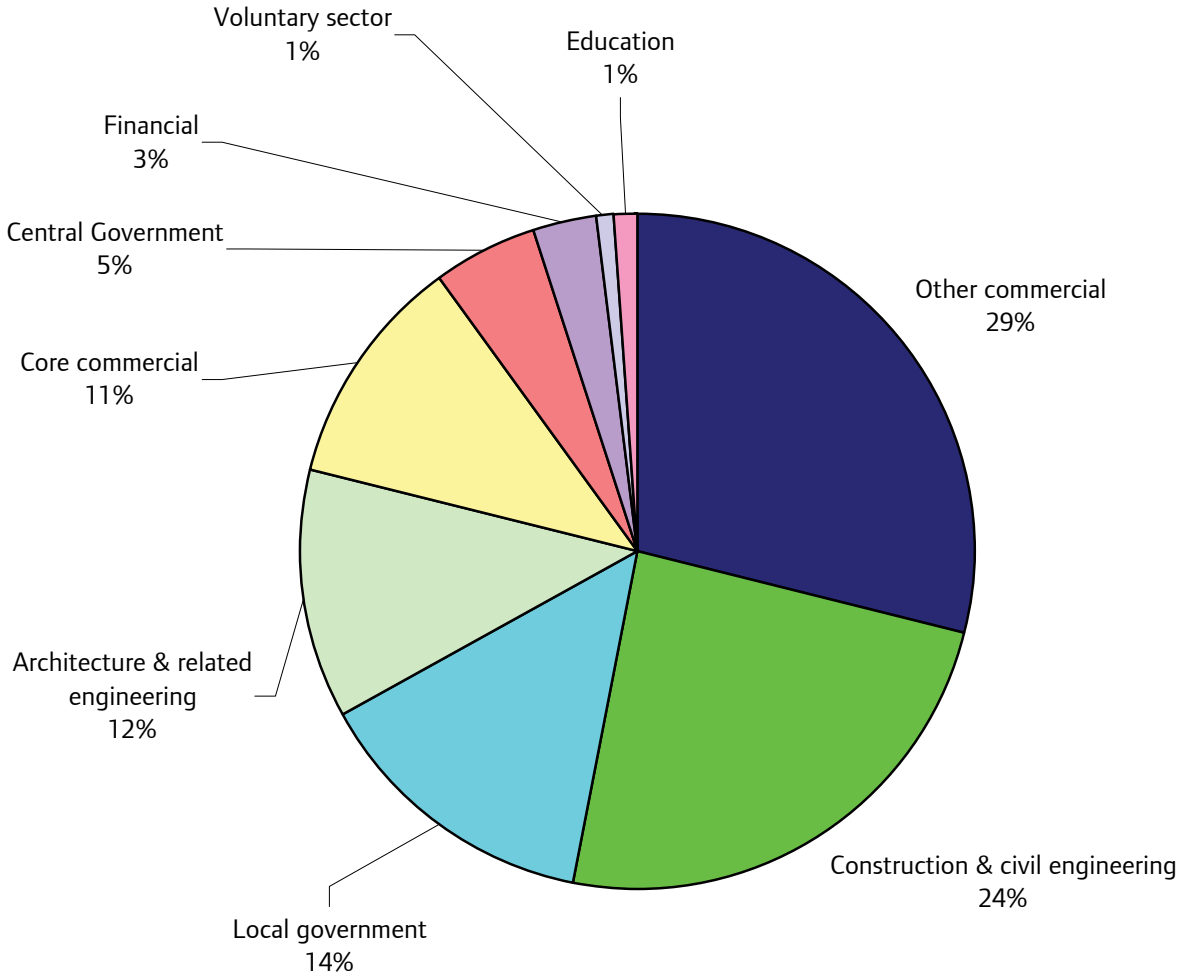
Table 2: London's market attractiveness to the low carbon sector

LONDON	GVA	GVA growth		Venture capital Investment	Trade performance
Sectors	£bn	Historical	Future	UK VC investment	Exports (£bn)
Low carbon industrial strategy	20.9	5.2%	5.5%	n/a	1.81
Ultra low carbon vehicles	2.7	3.0%	n/a	9	0.50
Digital Britain	19.2	5.7%	2.6%	343	1.01
Professional and Financial Services	85.3	8.4%	4.6%	183	n/a
Life Sciences and Pharmaceuticals	0.7	6.5%	2.7%	54	0.28
Engineering and construction	9.6	9.9%	0.2%	0	n/a
Advanced manufacturing	0.9	1.1%	3.1%	65	2.03
Industrial opportunities in an ageing society	0.7	0.0%	0.6%	12	n/a

Source: Ernst & Young Analysis, 2009

Work undertaken by Brook Lyndhurst for the LDA's 'Green Alchemy' series of reports published in 2004 also attempted to define and estimate the size of London's green sector. In order to capture fully the breadth of the sector it utilised the notion of an umbrella with almost all sectors of the London economy having some part of them covered by the definition. Unsurprisingly, the result was a far higher estimate of the number of people employed in the sector in the capital. The activities falling under the umbrella were estimated to employ 140,000 people in London. Employment was greatest in the construction & civil engineering and the 'other commercial' sub-sectors. However, particular strengths in London were identified in waste processing, the sustainable energy sector, the built environment, the green 'knowledge economy', eco-business services and headquarters functions.

Figure 5: 'Green Alchemy' estimates of environment sector employment in London

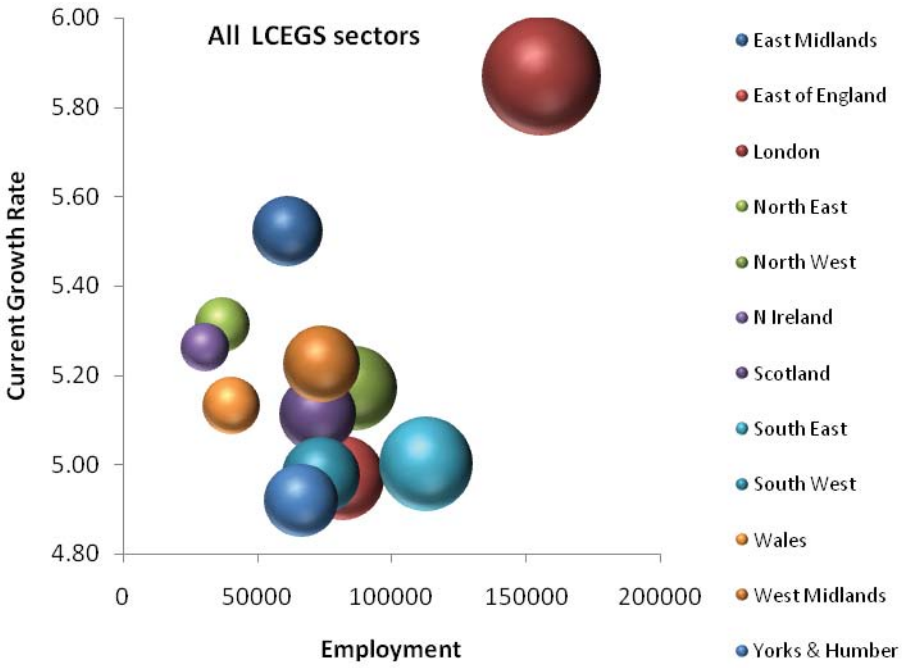


Source: The environment sector in London (Brook Lyndhurst / LDA, 2003)

The Innovas report[6] commissioned by BERR showed around 10,000 low carbon and environmental firms in London employing nearly 156,000 people with annual sales worth £21 billion. It suggested that London's sector grew by 5.9 per cent in 2007/08 – a higher rate of growth than in any other region of the UK. However, the methodology for estimating employment in this study involved estimating most employment figures on a pro-rata basis from company sales. So, if 50 per cent of a specific firm's sales were within the sector, 50 per cent of employment was attributed to the sector. The study broke London's sector employment down into three broad areas: 'traditional' environmental (32,500), renewable energy (51,700) and emerging low carbon (71,700). In all, London accounted for 18.4 per cent of the UK employment total and a 19.3 per cent share of the UK GVA total from the sector.

[6] 'Low carbon and environmental goods & services – an industry analysis' – Innovas for BERR.

Figure 6: All low carbon and environmental goods and services sectors – market value, growth rate and employment by region, 2007/08



Source: Innovas Solutions Ltd./BERR

Conclusion

This note has shown the uncertainties of estimating the size of the green sector. At a minimum we can be sure that there at least 25,000 people employed in it. But with some heroic assumptions about people doing 'green' jobs in sectors of other colours, we can potentially bring this number up to as much as 150,000. Even then, this only represents around 3 or 4 per cent of London's employment.

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