

Macro-Level Economic Context

1.1 This Appendix was produced on behalf of the West of England by the Economics and Evidence Team at SWRDA (SWO Economy module), to provide a macro-economic level context for the partnership area LEA. This appendix is divided into three parts, firstly, the principles of economic development, secondly the current global, national and regional trends, and thirdly structural economic change. The focus of this analysis is how these three elements relate to the evidence base for development in the West of England.

The Fundamentals of Economic Development:

Economic Principles

1.2 The market system is the best tool that people have developed to make choices: to optimise resource allocation effectively and efficiently. The market is people undertaking exchange: choices in action. Over the long run, the historical evidence largely suggests that market-based resource allocation has been better at raising relative well-being than the alternatives for most people. This is because markets tend to reward effort and invention and spread those benefits most widely.

1.3 That is not to say that people's choices through markets are perfect. They tend to be better than the alternatives because they require open trade based on clear property rights. They imply the creation of mutual benefit when both sides of any exchange or trade are entered into freely. Sometimes, however, they "fail" because of inequalities of power or information, inadequate price signals, or because they do not take into account all the relevant cost or benefit factors.

1.4 Awareness of these "externalities" of market failure and missed opportunity can lead to calls for direct intervention to correct such market defects. Mostly, it falls to the public sector to make such interventions through the fiscal system, regulation, and/or direct economic development. These three tools may be used to ensure that non-market costs or benefits are reflected and a better resource allocation is achieved.

1.5 Fundamentally, policies for economic development should be about making the market work better rather than replacing the market. They are about "crowding in" good behaviour and change rather than "crowding out" what the market might otherwise provide perfectly adequately.

Economic Development Principles

1.6 Against this background, we can begin to see why economic development might be pursued by policy makers.

1.7 *The first principle* is that economic functionality should determine the scope of development interventions based on place. Intervention needs to be tailored to a spatial context where the failure or opportunity can be best addressed: functional economic areas.

1.8 At one level, all development is local – it occurs in a place or series of places. At another, it is national or even international – its market effects are large and widespread, indeed globally integrated. For many types of development activity, however, both intervention and impact is wider than locality, producing its best results when it engages over a geographical space or grouping of communities. Part of the task of economic development is to extend these positive impacts by promoting better market linkages between such areas and their hinterlands.

1.9 *The second principle* is about time, money and scale. Economic development really has to be engaged, over the long term, at a scale large enough to produce positive lasting change.

1.10 *The third principle* is that economic development should recognise, and alter beneficially, the appetites and aspirations of its target household and business population. It is about stimulating positive changes in attitude (an intangible aspect of human capital) as well as building infrastructure or providing other forms of physical capital and systems.

1.11 The appropriate “development” geography, then, can vary widely according to the nature of the intervention justified by market failure and/or opportunity.

Rationales for intervention

1.12 On this basis, we can identify four alternative rationales for intervention through economic development:

- Economic development should be about the “best”: investing in parts of the economy which already have competitive strengths and where the biggest “bang for buck” can be achieved within a reasonably short time. In summary, *play to your existing strengths*.

- Invest where change is most feasible, where current weaknesses can be identified and changed relatively easily: areas or sectors for which there are known recipes for successful intervention already at hand. *Play to your unrealised potential.*
- Address areas of most entrenched bad performance: the “worst” parts of the economy where social deprivation, as well as economic malaise, is in evidence. *Play to your areas of most weakness.*
- Pursue the re-balancing of an economy away from traditional activities to new sources of growth and development: towards different growth. *Play to your aspirations to a different economic league.*

1.13 It is rare that any one of these approaches is pursued in isolation, especially where non-economic development objectives are influenced by other policy considerations. Nevertheless, economics would ask that the four are considered with regard to the comparative net additional impact, in terms of value added and opportunity cost, of investments through time.

Growth and Productivity

1.14 Consideration of the development principles brings us to the economic concepts of growth and productivity. Economic growth is the process by which we raise living standards and economic well-being over time. Improvements in productivity are the roots of attaining sustainable economic growth.

Growth

1.15 Economic growth is the movement in the flow of value added between two periods of time. Mostly, this is measured as the rate of change in real gross domestic product between two years or quarters. At a regional, or sub-regional, basis this is alternatively measured as real gross value added.

1.16 There is often some debate as to whether economic growth is measured widely enough. In theory we can incorporate “externalities”, but it has not proved easy in practice because, by definition, they are difficult to count. Nevertheless, measures such as the Regional index of Sustainable Well-being developed by the English RDAs do comprise a wider “happiness” measure than just real GDP.

1.17 Whatever measures are adopted, there are three other human reasons why growth remains desirable:

- **Human populations grow.** As long as this is true, “no growth” implies falling living standards through time. We must grow to stand still in terms of providing jobs, goods and services, especially if the increasing population is also aging, with fewer “active workers” to create a steady state of wealth;
- **Human beings have aspiration.** Most people expect to improve their standard of living – both over their own lifetime and in terms of their aspirations for children and grandchildren. In the “zero sum” world of “no growth”, many aspirations would be frustrated and difficult issues of equity would arise when one person’s progress must mean someone else’s decline..
- **Human beings are inventive.** They find new things to do and new ways of doing things. Over time, we produce the same amount of goods and services with less labour and materials. This releases labour and materials for other activities. Without growth, this “surplus” labour will be under-utilised. In a utopia, this may be welcomed as more leisure but that too implies “growth”. In a dystopia, it might imply a loss of social cohesion between the fewer people who have work and the growing number who would not. Many studies show that “happiness” is strongly influenced by our relative position in society rather than our absolute income or wealth.

Given a continuing “need” for economic growth, then, we must consider what drives that growth.

1.18 Economic growth is driven by changes in productivity and employment: the former is a result of invention and aspiration - the latter, population change and education. In turn, by positive feedback, growth brings more employment and productivity.

1.19 Productivity and employment growth are, themselves, driven by the resources available for use: the natural, human and physical capital deployed and, over time, the technological and process changes that affect the effective and efficient use of that capital.

1.20 This tells us where economic development should be focused: on investment in the aspects of capital accumulation and use that lead to higher productivity and, thereby, employment growth over time.

Productivity

1.21 Productivity is a ratio of outputs to inputs. It measures what you get out from what you put in. There is really no point in doing any activity for which this ratio is negative over time. It is productivity that creates the surpluses that lead to the growth of incomes and employment. Thus, whilst, in the short term, measures to increase productivity may mean less employment in particular businesses or sectors, in the long run, it is the release and redeployment of these resources, whilst maintaining or enhancing existing value added, that allows a better resource allocation and the creation of more wealth and employment.

1.22 Because it is easier to collect and compare, and it reflects the value created by human activity, productivity is most often measured in relation to labour used, such as full-time equivalent jobs or hours worked. This *labour productivity*, however, is only one aspect of underlying economic performance. *Total factor productivity* (TFP) takes into account the other factors of production (capital used to produce output such as plant and machinery). Also, especially with interest in environmental issues growing, there is increased focus on *resource productivity* – productivity in relation to natural resource inputs. All these measures reflect the effectiveness and efficiency of resource use to create value or wealth.

1.23 Improvements in productivity are the “holy grail” of the development process because they underpin sustainable growth through time. We need to understand what drives such productivity growth.

1.24 The main factor is investment in useful capital stock and its continuing accumulation, dissemination and use:

- investment in *physical capital* - infrastructure, plant, machinery and virtual systems;
- formal and informal investment in *human capital* – physical and mental skills and other forms of educational enhancement and training;
- processes of innovation through research and development and organisational change, building productivity through *technological advance*;
- enhancement of *environmental capital*, in the form of resource stocks and flows and waste capacity management; and
- *social or cultural capital*, in the form of attitudes to risk and uncertainty, collaboration and competition, opportunity and access.

1.25 All these forms of “capital investment” boost the productive potential of human and other resources. In turn, capital has to be put together with ideas and aspiration in a way that generates markets, growth and development through new *entrepreneurship*. Then, the combination of investment and entrepreneurship leads to *competitiveness* in the market place which, in a globalised economy crucially means the competitiveness to compete across many markets and sectors.

1.26 A number of factors can inhibit or promote the process of comparative capital investment in ways that will boost or restrict productivity and generate or dampen growth. Six factors that are important in enhancing or inhibiting functional geographies are *peripherality and access to markets, population structure and flows, propensity to engage with direct investment and foreign trade, the fiscal & regulatory framework, processes of agglomeration and access to capital funding*.

Section Conclusion

1.27 Economic development should be related to the most relevant time and space in which optimal resource allocation can be promoted by correcting market failures and capturing market opportunities.

1.28 The optimisation of both employment and productivity growth is the aim, operating through a range of capital investments in the instruments and contextual factors and processes that support business competitiveness and aspiration.

1.29 Keeping these principles in mind is the vital framework for economic development and should underpin policy, strategy and delivery in respect to spatial and sector effectiveness and efficiency.

Current Economic Trends:

1.30 **Balance** - *the world economy still needs to rebalance three related aspects – financial flows, trade flows and fiscal deficits. Persistent surpluses and deficits create difficult tensions between trading partners and the financial system. The dangers of protectionism need to be avoided.*

1.31 The world economy came through 2010 in better shape compared with 2009. Economic activity was higher in most parts of the world, especially through the second half of the year. In many cases, however, the recovery remained subdued. The economy will continue to face strong headwinds from

- the rebalancing of the financial and trading system
- public sector withdrawal of direct and indirect demand in most developed countries
- low business certainty and weak household incomes and confidence

1.32 The emergent economies, which now, in aggregate, contribute about one half of world output, are leading what recovery there is, with growth rates of 6% plus expected in Asia-Pacific for 2010. In contrast, the OECD forecasts real growth for its members (largely developed economies) averaging 2.7% in 2010 compared with -3.3% in 2009. They show no real acceleration into 2011 (2.8%): a distinctly modest recovery.

1.33 Table 1 shows the latest Consensus Forecasts, confirming that many forecasters anticipate at least another year of weak economic performance – mostly low growth and inflation - across the world’s “western” economies

Table 1: Consensus Forecasts: Real Growth & Inflation - % change year-on-year

	2009 growth	2010 growth	2011 growth	2011 inflation
Euro-zone	-4.0	+1.7	+1.5	+1.6
Germany	-4.7	+3.6	+2.2	+1.5
France	-2.5	+1.6	+1.5	+1.5
USA	-2.6	+2.8	+2.7	+1.5
Asia-Pacific	+1.9	+6.6	+5.0	+2.7
Japan	-5.3	+3.5	+1.1	-0.3
World	-1.8	+3.9	+3.2	+2.7

Source: Consensus Forecasts December 2010

1.34 **Momentum** - the loss of momentum seen through the late summer of 2009 may reassert itself, with constraints on consumer and government spending, investment and net exports. As the public sector recession bites in 2011, the question remains whether the private sector is ready and willing to fill the gap, as the public sector did in 2008-10. Barring policy errors, this re-distribution will take effect at some point in the decade: the debate is about how quickly it occurs.

1.35 Five factors are expected to constrain the UK recovery in the near term:

- 1) **Weak consumption growth** fuelled by
 - the household desire to pay down debt
 - the negative policy stimulus from government withdrawal
 - the expectation that real incomes are set to fall

- 2) **Weak investment spending.** Despite reasonable financial balances and a competitive exchange rate, UK firms and business sectors are not investing enough for future growth. This reflects:
 - low replacement demand reflecting pre-recession investment
 - a large 'output gap' that allows recovery without investment
 - CSR uncertainty about domestic demand
 - better returns from and state support for capacity investment elsewhere in the world

This negative sentiment could turn quickly if demand proves more robust than currently expected but, for now, companies seem cautious.

- 3) **Falling government contribution to aggregate demand**
 - CSR cuts in state spending are unlikely to be compensated immediately by private sector demand
 - It will be interesting to see how quickly private supply moves into previously public domains.

- 4) **Less than hoped for contribution from international trade.**
 - the UK's main external markets are growing relatively slowly (with the possible exception of Germany)
 - UK companies seem content to re-build profit margins rather than to grow market share through investment at home
 - gaps in UK capacity mean that imports tend to grow as soon as demand shows signs of life and that production tends to move abroad once scale is necessary for new or innovative products

- 5) **Smaller addition to growth from inventory accrual.**
 - Stock rebuilding, which was an important contributor to growth early in 2010, can not persist without support from 1)-4) above

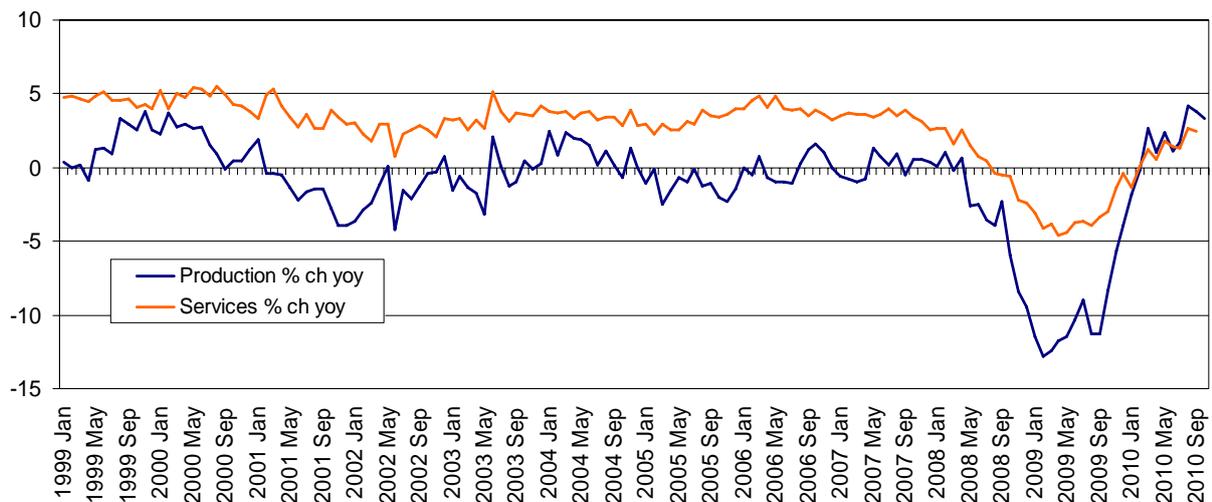
1.35 The UK economy has seen relatively high and persistent inflation during the downturn. The Bank of England has under-forecast inflation for some time. Its latest view is that inflation

will stay high through the next year and will not be back to “target” (CPI +2%p.a.) until 2012. Effectively, expectations about the CPI target have been allowed to rise to 3%.

Source: ONS

1.36 Chart 1 shows how big a “hole” in industrial production and services was made by the recession. A recovery is shown for this mid-year but this is from a very low level, particularly for production (largely manufacturing).

Chart 1: Industrial production & services (% change year on year)



Source: ONS

1.37 **Prospects** - in common with other more peripheral regions, the recovery in the South West has been very modest to date, especially in the labour market. The public sector gave the region many new jobs in the decade and a half before the recession – both directly through service expansion and indirectly through procurement and commissioning. The other main source of growth was through property, housing and related business services. It is unlikely that these parts of the economy will supply lots of new jobs in the next decade. At the margin, then, the economy needs to re-invent itself in order to boost its prospects after the downturn.

1.38 The current view is that 2011 and 2012 will be years of subdued forward progress. If the consensus is right, both consumption and investment will show very modest increases. This implies that the output gap will not be closed, employment will not grow much and inflation will remain above target. Monetary policy will stay loose, partly to offset tighter fiscal policy but also in the belief that inflation will revert to target later.

1.39 In the short term, the main constraint on UK and SW economic activity will be the one on real incomes and discretionary spending. Starting, four years ago, a series of factors have affected negatively the incomes/spending balance of SW households, namely:

- Higher food and energy costs affecting discretionary spending budgets
- Less access to credit and savings income because of the “crunch”
- Falling asset values, especially property and equities, affecting wealth-backed spending
- Cuts to incomes caused by the private sector recession through fewer jobs, reduced hours and constraints on take-home pay
- And now, the imminent restraints from public sector withdrawal and higher taxes.

These five “waves” suggest dampened effective demand across the economy for some time, making it harder for domestic-orientated businesses but, perhaps, encouraging some necessary rebalancing towards external demand.

Current Structural Change:

1.40 As well as the cyclical trends considered in the previous section, it is important to understand some of the structural changes underway that are likely to affect the SW economy over the future. The starting point for this analysis must lie with the structure¹ of our sectoral and spatial economy.

1.41 Official data shows the progress the SW economy made up to the onset of the recent recession and a relatively good performance through the downturn. For example, the latest ONS release on gross value added (GVA) and GVA per head can be summarised as showing:

- The South West Economy contracted (in nominal terms) to £95.3 billion (bn) in 2009. This was a decrease of 2.1% from 2008 (revised); the same rate of decline as the UK average. Only London (-1.5%), the North East (-1.5%) and the North West (-1.6%) recorded smaller declines;
- The region contributed 7.7% towards total UK GVA in 2009; excluding London, the figure was 9.8%. The former was a slight increase on the 2008 ratio;
- South West nominal GVA per head stood at £18,211 in 2009: the fourth highest of the English regions. As with GVA, SW GVA per head contracted in 2009 but by less than the UK average (-2.5% versus -2.7%).

¹ The best source on the structure of the SW economy and its sub-regions is the SW Regional Accounts available through us on the Economy Module and RDA websites

- Figures on regional GVA by industry showed that the manufacturing and utilities sectors were hit hard by the early stages of the downturn while financial intermediation still showed strong growth;
- Locally, the pattern was of relative strength in Cornwall, the wider Bristol conurbation and Bournemouth & Poole, with a relatively 'soft centre' (Devon, Dorset & Somerset).

1.42 The SW economy is structurally similar, on the supply side, to most of the UK economy, deriving under 2% of output from land-based activities, 12% from manufacturing, almost 7% from construction, about 55% from largely market services and about 24% from largely public services. Within the region, of course, this mix varies from the major urban areas, through smaller market and coastal towns to the linked and remote rural areas. Economically, the key here is access, agglomeration and aspiration.

1.43 On the demand side, the SW economy has been structurally reliant on domestic demand from households, within and without the region, and from the public sector. In contrast, the economy has been relatively weak on investment and international trade, contributing less than 5% of UK exports.

1.44 This pattern of demand and supply can not persist if the growth aspirations of the government and the region are to be met. There needs to be some rebalancing of activity, away from UK current consumption towards longer term value added, productivity building activity.

1.45 Other structural characteristics of the SW economy that are important for development include:

- low comparative unemployment but aspects of under/hidden employment
- strong in small/micro business and high levels of part-time employment
- northern wages with southern prices/costs – relatively high cost of living and low real wages

Finally, the SW economy and its parts face some longer term economic shifts that can be summarised as demographic, climate and technological change.

APPENDIX 2

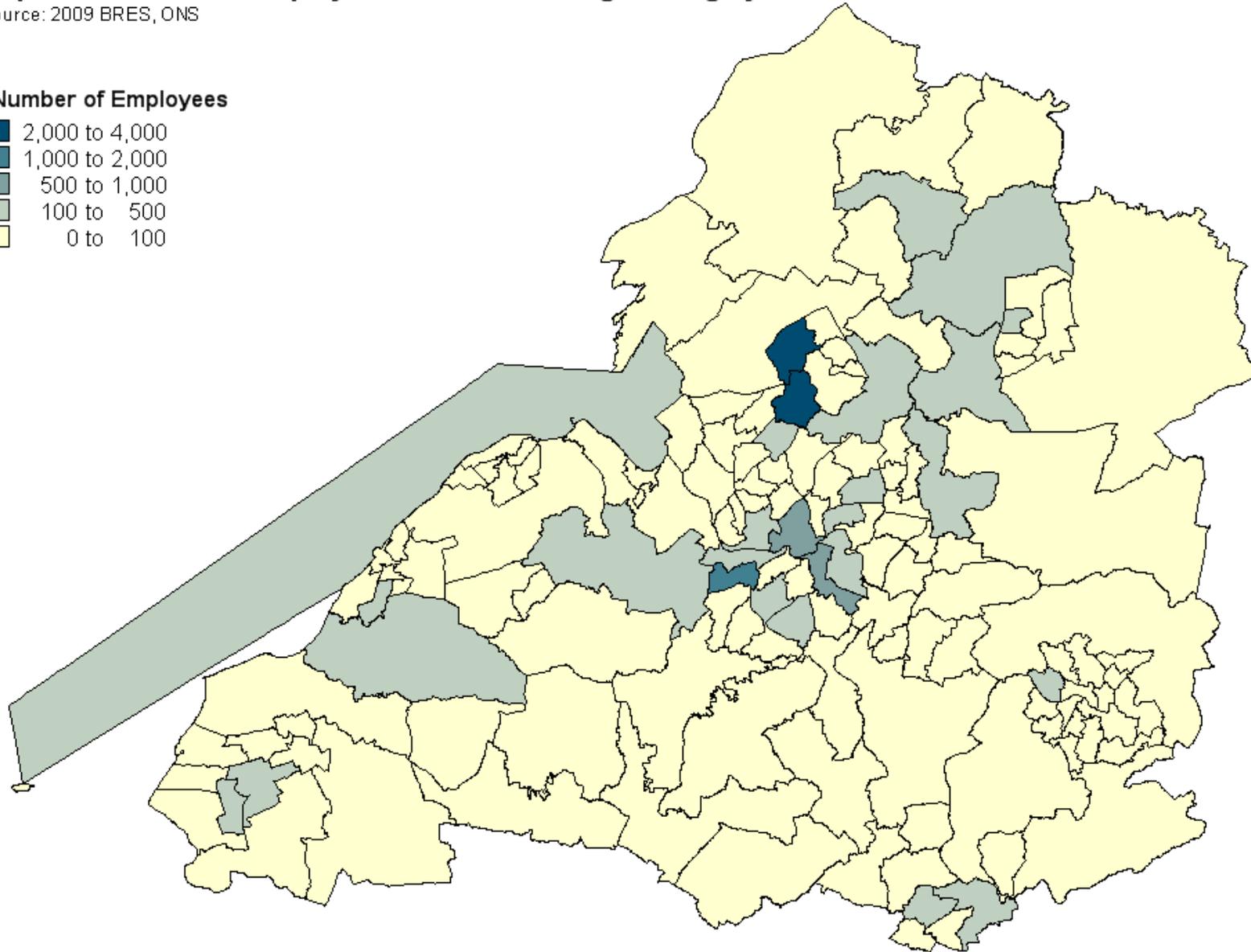
Sector Maps: Location of Employees within LEP Priority Sectors

Map 3.1: Location of Employees in Advanced Engineering by Ward

Source: 2009 BRES, ONS

Number of Employees

- 2,000 to 4,000
- 1,000 to 2,000
- 500 to 1,000
- 100 to 500
- 0 to 100



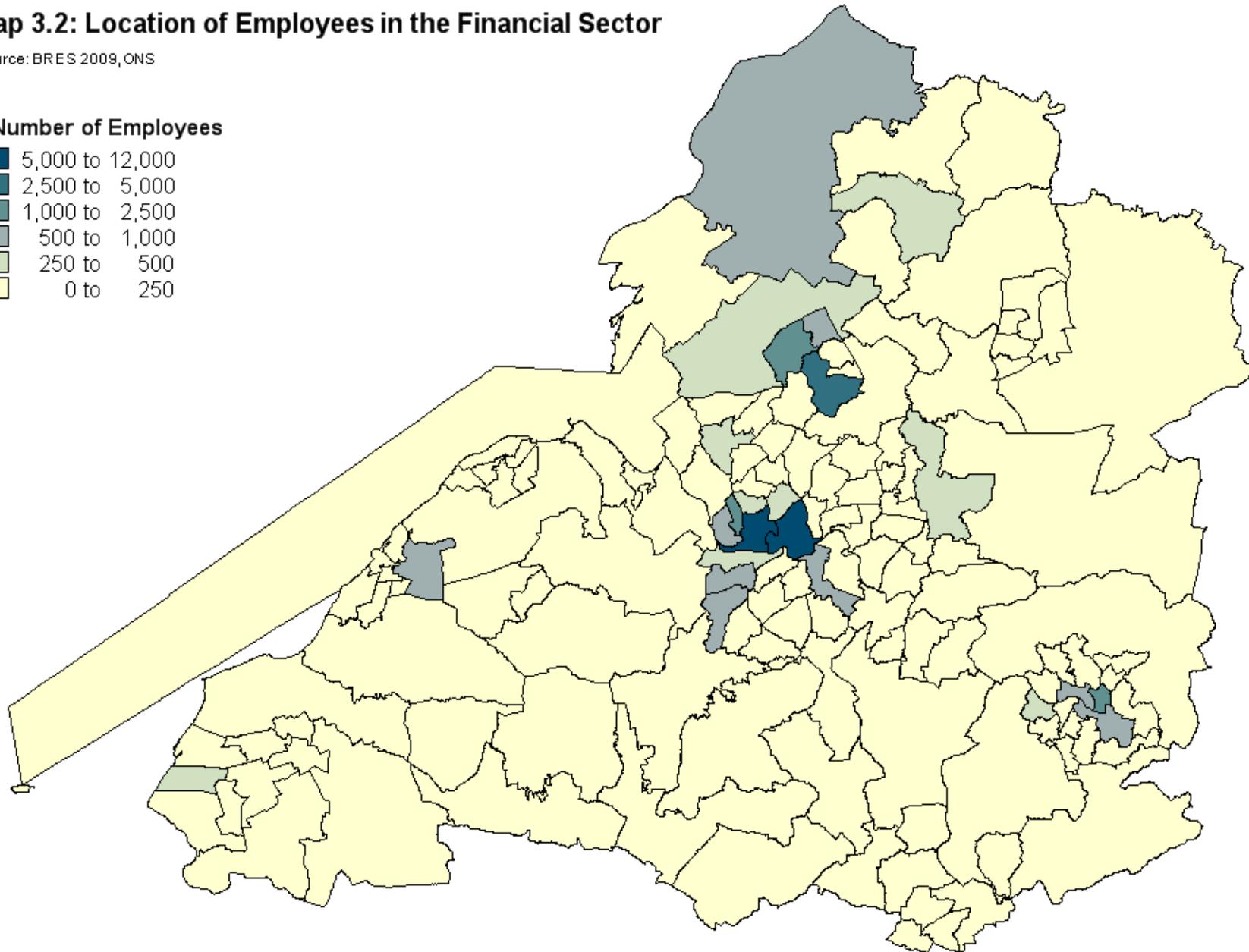
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Map 3.2: Location of Employees in the Financial Sector

Source: BRES 2009, ONS

Number of Employees

- 5,000 to 12,000
- 2,500 to 5,000
- 1,000 to 2,500
- 500 to 1,000
- 250 to 500
- 0 to 250

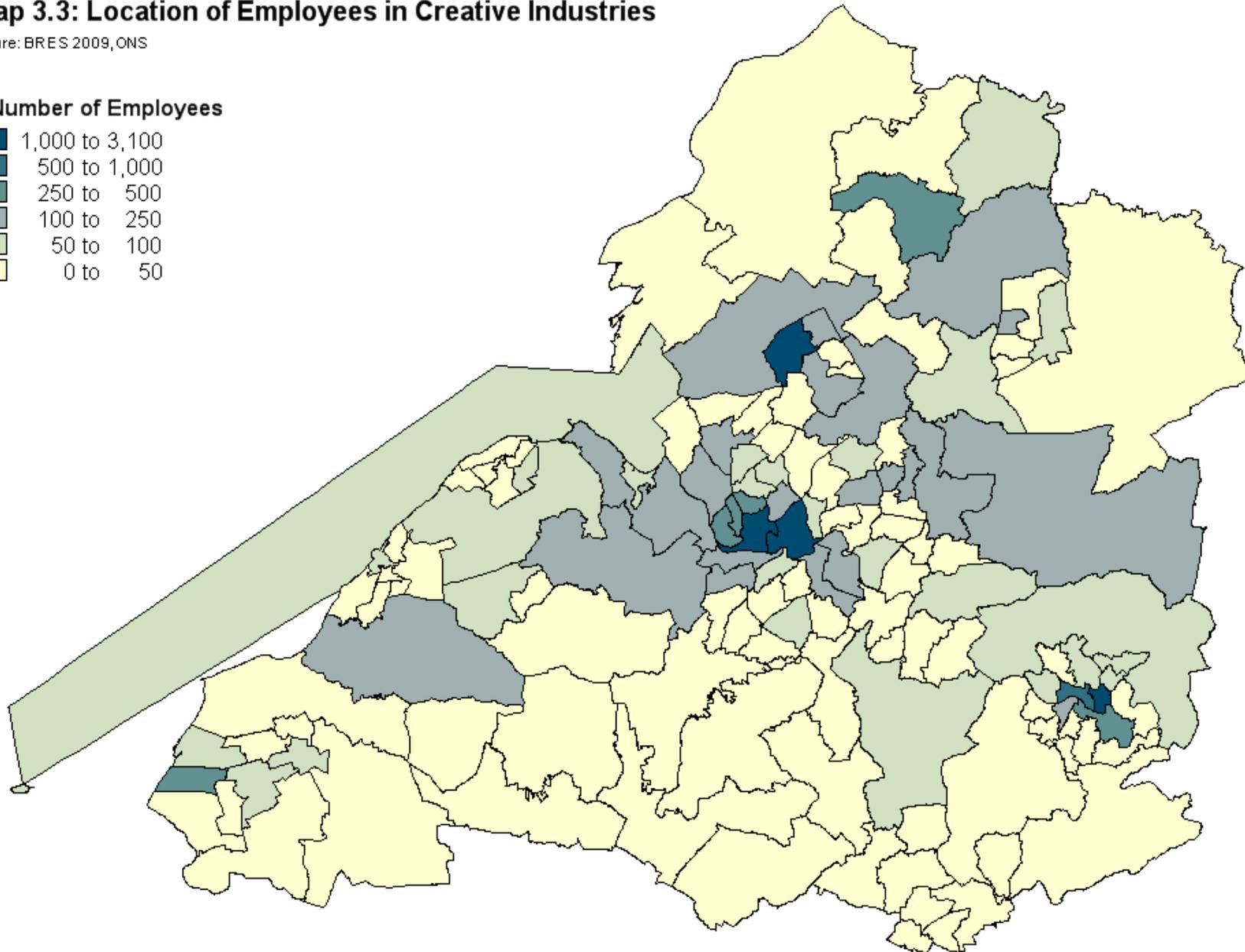
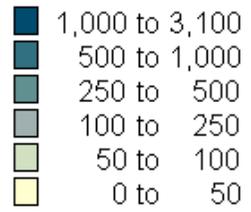


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Map 3.3: Location of Employees in Creative Industries

Source: BRES 2009, ONS

Number of Employees



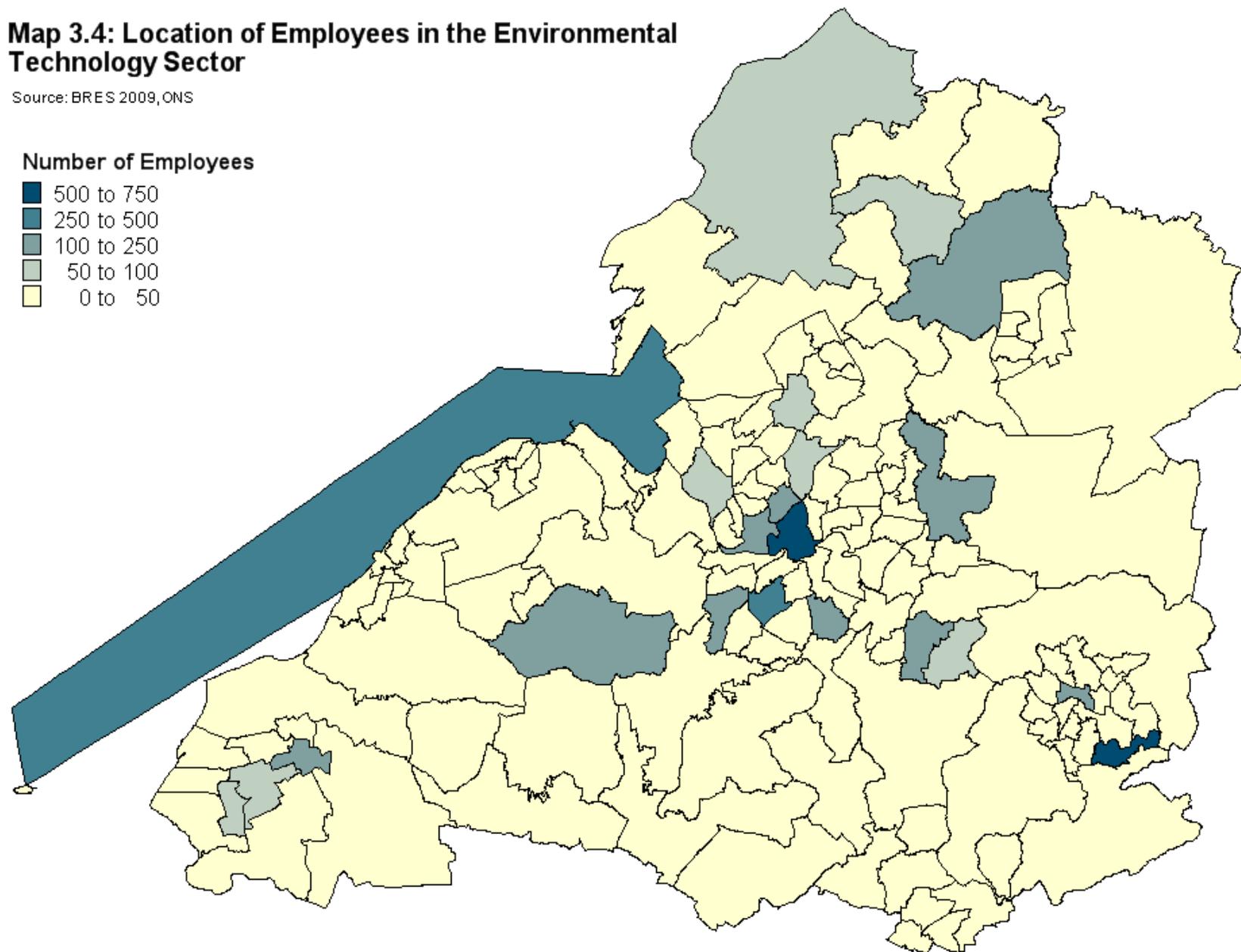
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Map 3.4: Location of Employees in the Environmental Technology Sector

Source: BRES 2009, ONS

Number of Employees

- 500 to 750
- 250 to 500
- 100 to 250
- 50 to 100
- 0 to 50



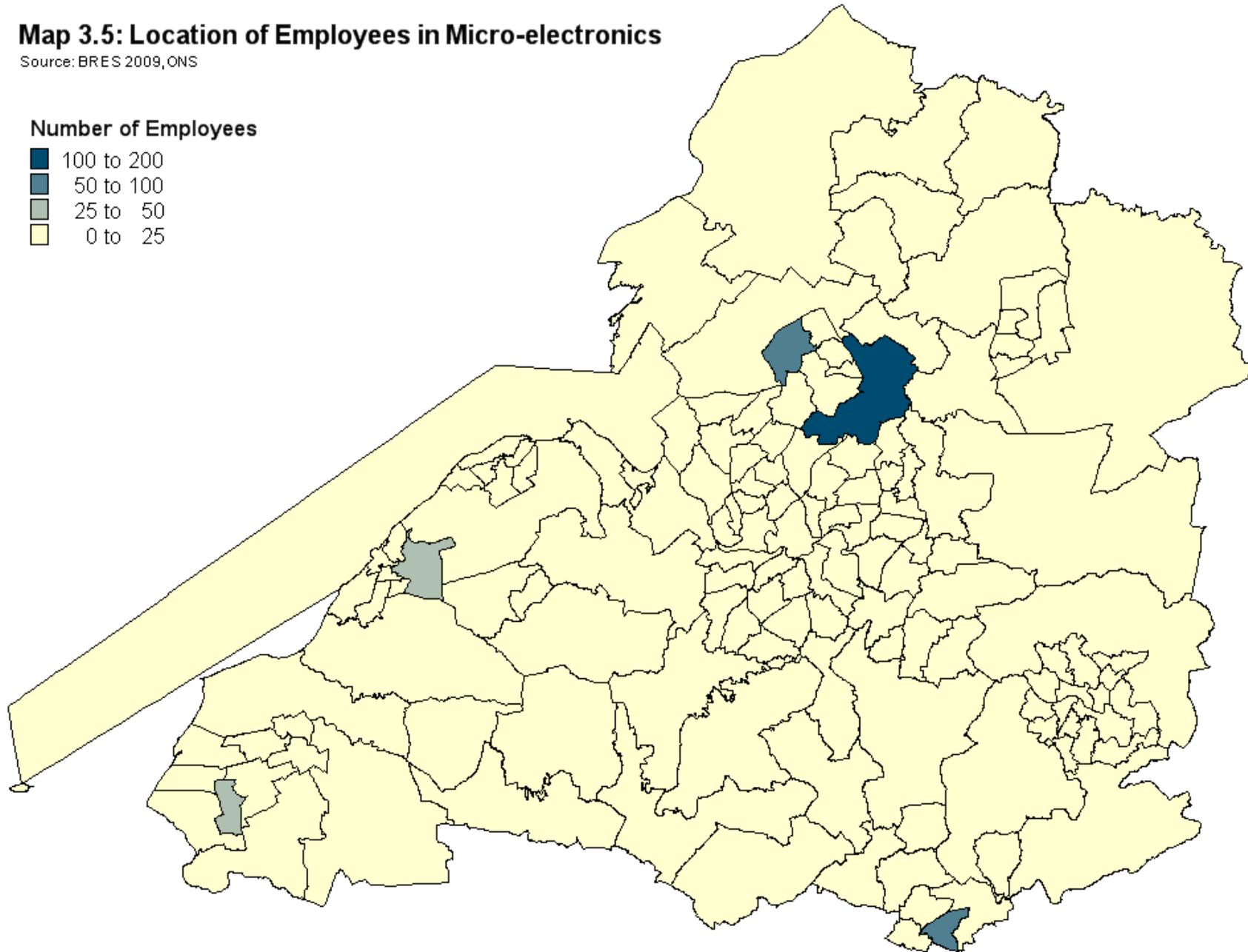
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Map 3.5: Location of Employees in Micro-electronics

Source: BRES 2009, ONS

Number of Employees

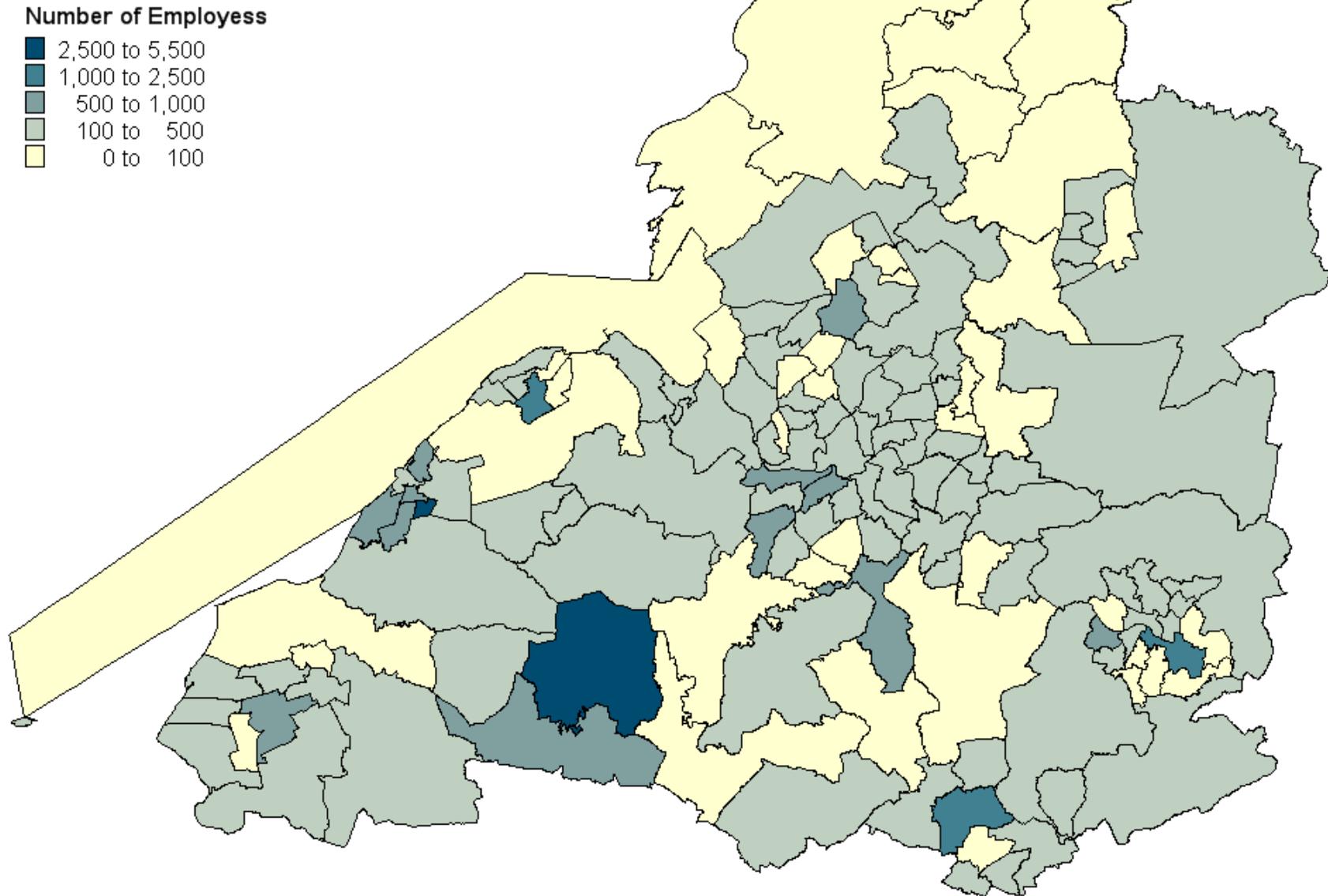
- 100 to 200
- 50 to 100
- 25 to 50
- 0 to 25



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Map 3.6: Location of Employees Working in Tourism

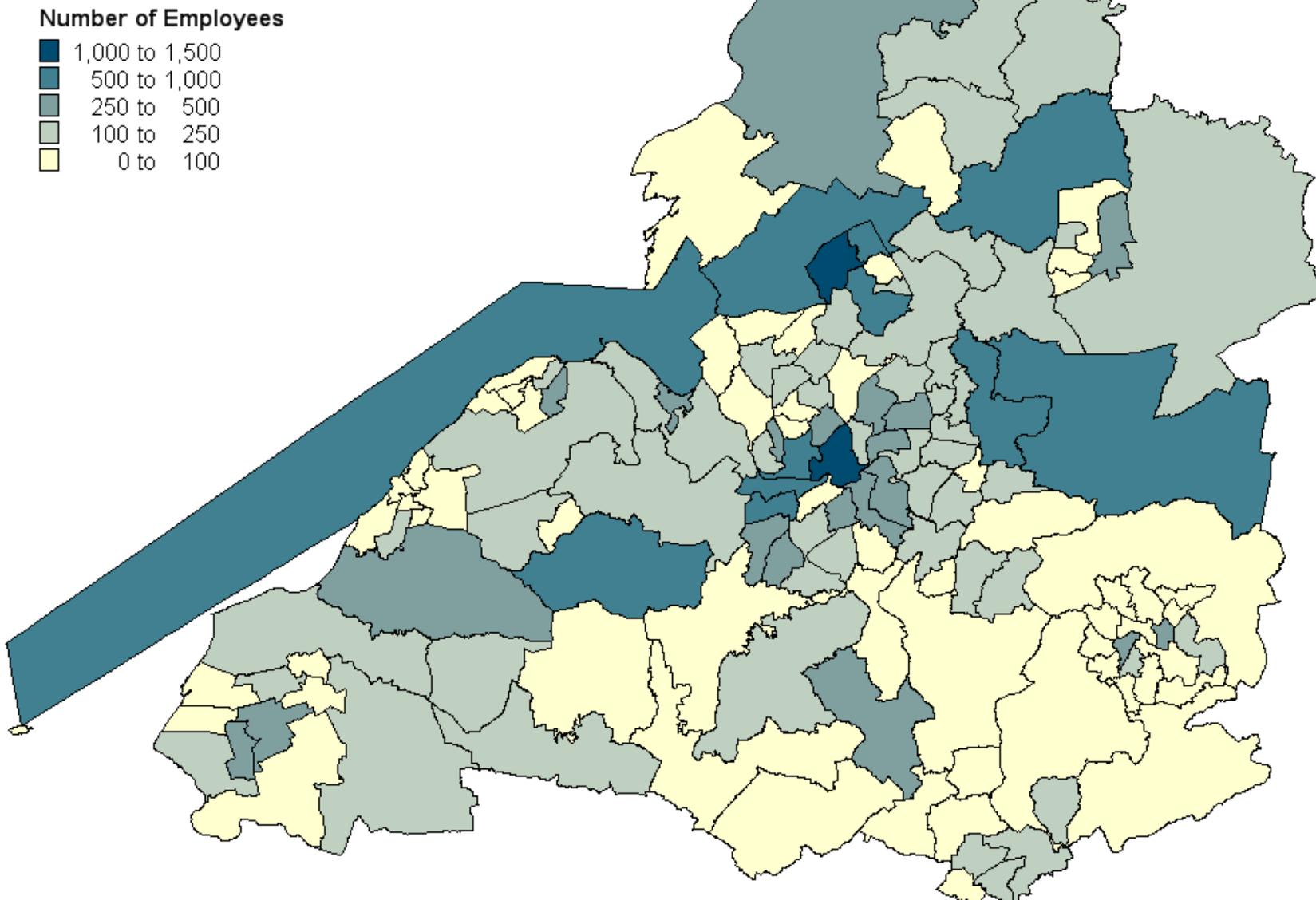
Source: BRES 2009, ONS



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Map 3.7: Location of Employees in Construction

Source: BRES 2009, ONS



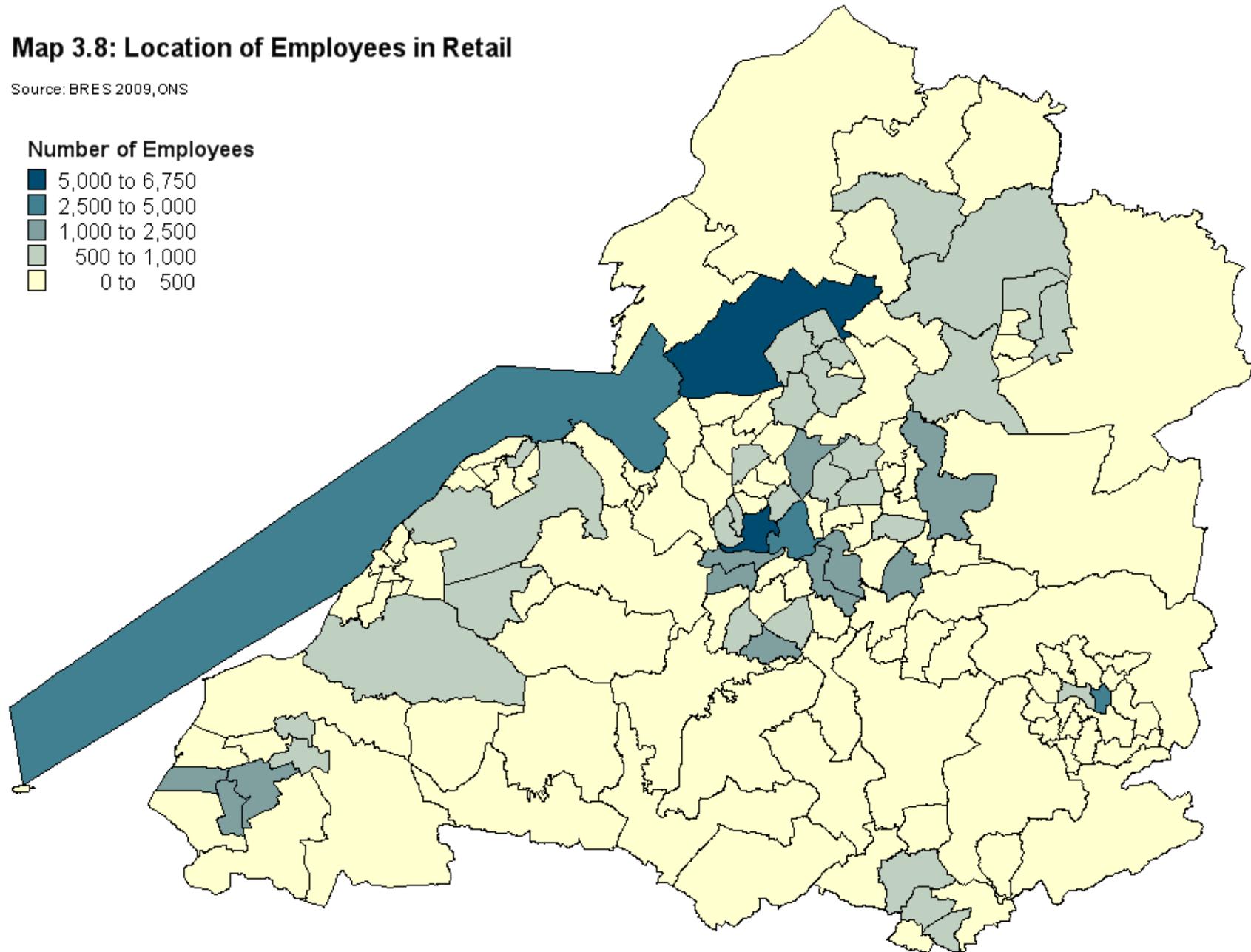
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Map 3.8: Location of Employees in Retail

Source: BRES 2009, ONS

Number of Employees

- 5,000 to 6,750
- 2,500 to 5,000
- 1,000 to 2,500
- 500 to 1,000
- 0 to 500



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SECTOR DEFINITIONS

One of the key problems encountered in producing this Economic Assessment was the variation in the way different researchers / organisations define industrial sectors. The ones used in this study are set out below.

LEP Priority Sector Definitions

Based on SIC 2007

Advanced Engineering

27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment n.e.c.
254	Manufacture of weapons and ammunition
256	Treatment and coating of metals; machining
263	Manufacture of communication equipment
265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks
266	Manufacture of irradiation, electromedical and electrotherapeutic equipment
267	Manufacture of optical instruments and photographic equipment
268	Manufacture of magnetic and optical media
303	Manufacture of air and spacecraft and related machinery
304	Manufacture of military fighting vehicles
325	Manufacture of medical and dental instruments and supplies
332	Installation of industrial machinery and equipment
2562	Machining
33110	Repair of fabricated metal products
33120	Repair of machinery
33130	Repair of electronic and optical equipment
33140	Repair of electrical equipment
33160	Repair and maintenance of aircraft and spacecraft

Micro-electronics and Silicon Design

261	Manufacture of electronic components and boards
262	Manufacture of computers and peripheral equipment
264	Manufacture of consumer electronics
2931	Manufacture of electrical and electronic equipment for motor vehicles

Creative Industries

14	Manufacture of wearing apparel
58	Publishing activities
59	Motion picture, video and television programme production, sound recording and music publishing activities
60	Programming and broadcasting activities
90	Creative, arts and entertainment activities
152	Manufacture of footwear
182	Reproduction of recorded media

- 731 Advertising
- 741 Specialised design activities
- 742 Photographic activities
- 1512 Manufacture of luggage, handbags and the like, saddlery and harness
- 5811 Book publishing
- 5813 Publishing of newspapers
- 5814 Publishing of journals and periodicals
- 5819 Other publishing activities
- 6201 Computer programming activities
- 6202 Computer consultancy activities
- 6391 News agency activities
- 7111 Architectural activities
- 4778/1 Retail sale in commercial art galleries
- 4779/1 Retail sale of antiques including antique books, in stores
- 7810/1 Motion picture, television and other theatrical casting

Tourism

- 55 Accommodation
- 56 Food and beverage service activities
- 79 Travel agency, tour operator and other reservation service and related activities
- 92 Gambling and betting activities
- 93 Sports activities and amusement and recreation activities
- 772 Renting and leasing of personal and household goods
- 8551 Sports and recreation education
- 8552 Cultural education

Financial

- 65 Insurance, reinsurance and pension funding, except compulsory social security
- 66 Activities auxiliary to financial services and insurance activities
- 69 Legal and accounting activities
- 70 Activities of head offices; management consultancy activities
- 641 Monetary intermediation
- 643 Trusts, funds and similar financial entities
- 649 Other financial service activities, except insurance and pension funding
- 64205 Activities of financial services holding companies

Retail and Distribution

- 45 Wholesale and retail trade and repair of motor vehicles and motorcycles
- 46 Wholesale trade, except of motor vehicles and motorcycles
- 471 Retail sale in non-specialised stores
- 472 Retail sale of food, beverages and tobacco in specialised stores
- 473 Retail sale of automotive fuel in specialised stores
- 474 Retail sale of information and communication equipment in specialised stores

- 475 Retail sale of other household equipment in specialised stores
- 476 Retail sale of cultural and recreation goods in specialised stores
- 478 Retail sale via stalls and markets
- 479 Retail trade not in stores, stalls or markets
- 4771 Retail sale of clothing in specialised stores
- 4772 Retail sale of footwear and leather goods in specialised stores
- 4773 Dispensing chemist in specialised stores
- 4774 Retail sale of medical and orthopaedic goods in specialised stores
- 4775 Retail sale of cosmetic and toilet articles in specialised stores
- 4776 Retail sale of flowers, plants, seeds, fertilisers, pet animals and pet food in specialised stores
- 4777 Retail sale of watches and jewellery in specialised stores
- 47782 Retail sale by opticians
- 47789 Other retail sale of new goods in specialised stores (other than by opticians or commercial art galleries), nec
- 47799 Retail sale of second-hand goods (other than antiques and antique books) in stores

Anthony Plumridge, UWE, Key Sectors Study 2009

Based on SIC 2003

Advanced Engineering

SIC 2003

2941	Manufacture portable hand held power tools
2942	Manufacture metal working machine tools
2943	Manufacture other machine tools
3130	Manufacture insulated wire & cable
3210	Manufacture electronic valves etc
3310	Manufacture medic & surgical equip
3320	Manufacture instruments for measuring
3330	Manufacture industrial process cnt equip
3340	Manufacture optical instruments
3410	Manufacture motor vehicles
3420	Manufacture motor vehicles bodies etc
3430	Manufacture parts for motor vehicles
3530	Manufacture aircraft & spacecraft

Banking, Legal & Finance

SIC 2003

6511	Central Banking
6512	Other money intermediation
6521	Financial leasing
6522	Other credit granting
6523	Other financial intermediation
6712	Security Broking & Fund Management
6713	Auxiliary to financial intermediation
7412	Accounting, book-keeping, auditing, tax consultancy
6601	Life Insurance
6602	Pension funding
6603	Non life insurance
6770	Auxiliary to pension & insurance
6711	Administration to financial markets
7414	Business & management consultancy activities
7415	Management activity of holding costs

Biotechnology

2441	Manufacture of basic pharmaceuticals
2442	Manufacture of pharmaceutical preparations
7310	R & D natural sciences & engineering

Creative Industries

SIC 2003

2211	Publishing of books
2212	Publishing of newspapers
2213	Publishing of journals and periodicals
2214	Publishing of sound recordings
2215	Other publishing
7420	Architects
7440	Advertising

9211	Motion picture and video production
9212	Motion picture and video distribution
9213	Motion picture projection
9220	Radio & TV activities
9231	Artistic & literal creation & interpretation
7481	Photographic activities

Distribution

SIC 2003

511	Wholesale on a fee or contract basis
512	Wholesale on a fee or contract basis
514	Wholesale of household goods
515	Wholesale of non-agtl intermediate products
518	Wholesale of machinery
519	Other wholesale

Environmental Technologies

SIC 2003

3710	Recycling metal waste & scrap
3720	Recycling non metal waste & scrap
2923	Manufacture non domestic cooling & vent equipment
4511	Demolition & wrecking of buildings and earth moving
4532	Insulation work activities
7430	Technical testing and analysis
3120	Manufacture electricity distribution & control apparatus
4100	Collection, purification & distribution of water
4524	Construction of water projects
9001	Collection & treatment of sewage
9002	Collection & treatment of other waste
9003	Sanitation, remediation & sim activities

Food

SIC 2003

111	Growing cereals & other crops not elsewhere
112	Growing vegetables etc
113	Growing fruit/nuts/beverages/spices
121	Farming cattle/dairy farming
0122-5	Farming of other livestock
130	Growing of crops and farming of animals
141/2	Agricultural service activities
50	Fishing
15	Food processing

ICT

SIC 2003

2233	Reproduction of computer media
3002	Manufacture of computers
3220	Manufacture TV/radio transmitters
3230	Manufacture of TV/radio receivers
6420	Telecommunications
7210	Hardware consultancy
7221	Publishing of software

7222	Other software consultancy & supply
7230	Data processing
7240	Data base activities
7250	Maintenance/repair: office machinery etc
7260	Other computer related activities

Marine

SIC 2003

2911	Manufacture engines & turbines
3511	Building & repairing of ships
3512	Building & repairing of pleasure boats etc

Tourism

SIC 2003

5510	Hotels
5521	Youth Hostels & mountain refuges
5522	Camping sites, including caravan sites
5523	Other provision of lodgings
6330	Activities of travel agencies
9232	Operation of arts facilities
9233	Fair and amusement park activities
9234	Other entertainment activities
9251	Libraries & archive activities
9252	Museum activities etc
9253	Botanical & zoological gardens etc
9261	Operation of sports arenas and stadiums
9262	Other sporting activities
9271	Gambling & betting activities
9272	Other recreational activities not elsewhere

Bristol City Council Definitions

Based on SIC 2003

Advanced Engineering and Aerospace

3530 : Manufacture of aircraft and spacecraft
29 : Manufacture machinery and equipment not elsewhere classified (nec)
30 : Manufacture office machinery and computers
31 : Manufacture electrical machinery/apparatus nec
32 : Manufacture radio, tv/communications equipment
33 : Manufacture medical, precision instruments, etc
62 : Air transport

Banking and Insurance

65 : Financial intermediation, etc
66 : Insurance and pension funding, etc

Communications and ICT

64 : Post and telecommunications
72 : Computing and related activities

Construction

45 : Construction

Education

80 : Education

Health and Social Work

85 : Health and social work

Professional Services

671 : Activities auxiliary to financial intermediation, except insurance and pension funding
672 : Activities auxiliary to insurance and pension funding
731 : Research and experimental development on natural sciences and engineering
741 : Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy; holdings

Public Administration and Defence

75 : Public admin/defence; compulsory SS

Retail

52 : Retail trade, except of motor vehicles

Leisure and Tourism

5248 : Other retail sale: specialised stores
SIC 1992 group (3 digit)
364 : Manufacture of sports goods
365 : Manufacture of games and toys
551 : Hotels
552 : Camping sites etc
553 : Restaurants
554 : Bars
612 : Inland water transport

633 : Activities of travel agencies etc nec
925 : Library, archives, museums etc
926 : Sporting activities
SIC 1992 class (4 digit)
9232 : Operation of arts facilities
9233 : Fair and amusement park activities
9234 : Other entertainment activities nec
9271 : Gambling and betting activities
9272 : Other recreational activities nec

Wholesale and Distribution

50 : Sale, maintenance/repair motor vehicles
51 : Wholesale trade/commission trade, etc
60 : Land transport; transport via pipelines
61 : Water transport
63 : Supporting/auxiliary transport, etc

Environmental Technologies

75 % of 74.2 : Architectural and engineering activities and related technical consultancy
37 : Recycling
41 : Collection, purification and distribution of water
90 : Sewage and refuse disposal, sanitation and similar activities
SIC 2003 class (4 digit)
2923 : Manufacture of non-domestic cooling and ventilation equipment
4511 : Demolition and wrecking of buildings; earth moving
4524 : Construction of water projects
4532 : Insulation work activities
312 : Manufacture of electricity distribution and control apparatus
731 : Research and experimental development on natural sciences and engineering
743 : Technical testing and analysis

Creative Industries

100% of SIC's Listed below

2211 : Publishing of books
2212 : Publishing of newspapers
2213 : Publishing of journals and periodicals
2214 : Publishing of sound recordings
5245 : Retail sale of electrical household appliances and radio and television goods
5247 : Retail sale of books, newspapers and stationery
5143 : Wholesale of electrical household appliances and radio and television goods
2464 : Manufacture photographic chemical material
2465 : Manufacture of prepared unrecorded media
SIC 2003 group (3 digit)
222 : Printing and services activities related to printing
321 : Manufacture of electronic valves and tubes and other electronic components
323 : Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods
363 : Manufacture of musical instruments
722 : Software consultancy and supply
744 : Advertising
922 : Radio and television activities
924 : News agency activities
SIC 2003 class (4 digit)
9211 : Motion picture and video production

9212 : Motion picture and video distribution
9213 : Motion picture projection
9231 : Artistic and literary creation and interpretation
9232 : Operation of arts facilities

50% of SIC's listed below

2215 : Other publishing
9234 : Other entertainment activities not elsewhere classified
SIC 2003 group (3 digit)
243 : Manufacture of paints, varnishes and similar coatings, printing ink and mastics
322 : Manufacture of television and radio transmitters and apparatus for line telephony and line telegraph
714 : Renting of personal and household goods not elsewhere classified

25% of SIC's listed below

2231 : Reproduction of sound recording
2232 : Reproduction of video recording
2233 : Reproduction of computer media
3340 : Manufacture of optical instruments and photographic equipment
7420 : Architectural and engineering activities and related technical consultancy
7481 : Photographic activities
9272 : Other recreational activities not elsewhere classified

5% of SIC's listed below

5147 : Wholesale of other household goods
5248 : Other retail sale in specialised stores
5250 : Retail sale of second-hand goods in stores

5% of SIC's listed below

1771 : Manufacture of knitted and crocheted hosiery
1772 : Manufacture of knitted and crocheted pullovers, cardigans and similar articles
1810 : Manufacture of leather clothes
1821 : Manufacture of workwear
1822 : Manufacture of other outerwear
1823 : Manufacture of underwear
1824 : Manufacture of other wearing apparel and accessories not elsewhere classified
1830 : Dressing and dyeing of fur; manufacture of articles of fur
1930 : Manufacture of footwear

2% of SIC below

7487 : Other business activities not elsewhere classified

OECD Knowledge Based Industries

30 : Manufacture of office machinery and computers
32 : Manufacture of radio, television and communication equipment and apparatus
33 : Manufacture of medical, precision and optical instruments, watches and clocks
SIC 2003 group (3 digit)
244 : Manufacture of pharmaceuticals, medicinal chemicals and botanical products
353 : Manufacture of aircraft and spacecraft
8511 : Hospital activities
65 : Financial intermediation, except insurance and pension funding
66 : Insurance and pension funding, except compulsory social security
67 : Activities auxiliary to financial intermediation
72 : Computer and related activities

73 : Research and development

SIC 2003 group (3 digit)

642 : Telecommunications

741 : Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy; holdings

742 : Architectural and engineering activities and related technical consultancy

743 : Technical testing and analysis

744 : Advertising

803 : Higher education

9211 : Motion picture and video production

9220 : Radio and television activities

9231 : Artistic and literary creation and interpretation

Oxford Economics Definition

Based on SIC 2003

Industry	SIC03
Agriculture, fishing & forestry	01-05
Extraction	10-14
Manufacturing - food, drink & tobacco	15-16
Manufacturing - textiles & clothing	17-19
Manufacturing - wood & wood products	20
Manufacturing - pulp, paper & printing	21-22
Manufacturing - coke, oil & nuclear	23
Manufacturing - chemicals	24
Manufacturing - rubber & plastic products	25
Manufacturing - other non-metals	26
Manufacturing - metals	27-28
Manufacturing - machinery & equipment	29
Manufacturing - electrical & optical	30-33
Manufacturing - transport equipment	34-35
Manufacturing - other manufacturing nec	36-37
Electricity, gas & water	40-41
Construction	45
Distribution & retail	50-52
Hotels & restaurants	55
Transport & communications	60-64
Financial services	65-67
Business services	70-74
Public administration & defence	75
Education	80
Health	85
Other personal services	90-99

Work carried out on the Low Carbon Economy by Regen SW.

A large amount of work has already been carried out Regen SW on the low carbon economy. In order to avoid duplication of work a list of studies already undertaken has been included; this list is not exhaustive and further details on the work carried out by Regen SW can be found on their website at <http://www.regensw.co.uk/>

1) Regen SW Annual Survey of renewable energy and online map

This report sets out the renewable resources we have, the progress we are making in harnessing them and the lessons we can draw to increase the speed of deployment.

The map shows information about non-domestic renewable energy projects gathered through Regen SW's annual survey of projects.

Annual Survey <http://www.regensw.co.uk/projects/support-for-decision-makers/annual-survey>

Project map <http://www.regensw.co.uk/projects/support-for-decision-makers/annual-survey/project-map>

2) Searchable supply chain directory of south west sustainable energy organisations, including separate marine and energy efficiency directories.

The directories allow you to perform a comprehensive search for sustainable energy companies in the SW, pull up their contact details, and pinpoint them on an interactive map. You can search by service, technology and area.

<http://www.regensw.co.uk/directory/>

3) 2010 Report on 'Economic Contribution of the Renewable Energy and Energy Efficiency Sectors in the South West of England'

This is a detailed analysis based on research with over 250 companies.

The key objectives of the study are to:

- *Identify the economic contribution of the RE and EE sectors to the South West economy in terms of jobs and Gross Value Added (GVA)¹ in 2010, and compare this to previous studies*
- *Identify business attitudes towards the support services provided by Regen SW to organisations active in the RE and EE sectors*

http://regensw.s3.amazonaws.com/1282046376_675.pdf

4) Detailed resource assessments of renewable energy on south west (funded by DECC)

This provides updated onshore renewable energy resource assessments for the South West. The resource assessments provide local authorities with a suite of

spatial information about the opportunities for renewable energy generation in their area. They provide the platform for detailed local studies to examine specific opportunities in more detail.

<http://www.regensw.co.uk/projects/support-for-decision-makers/resource-assessments>

- 5) The road to 2020 – an analysis of barriers to renewable energy

The report lays out an early analysis of what the new UK renewables target for 2020 could mean for the South West of England and where there are opportunities for the region to speed up renewable energy deployment.

http://regensw.s3.amazonaws.com/1276784501_126.pdf

- 6) Guide to energy efficiency products and services in the South West of England – 2nd Edition.

This guide highlights and showcases some of the innovative businesses in the south west that are providing energy efficiency products and services.

http://regensw.s3.amazonaws.com/energy_efficiency_directory_2nd_edition_40609b239f6ec1dc.pdf

- 7) MCS installer certified bodies details and fees – 14th Feb 2011

This list provides contact details, prices and technologies covered for the Microgeneration Certification Scheme (MCS) certification bodies for microgeneration installers in England. Microgeneration refers to small scale renewable energy, with the common definition being up to 50kW for electricity and up to 45 kW for heat.

http://regensw.s3.amazonaws.com/mcs_installer_certification_bodies_list_2011_2_14_4deb556470f2b9be.pdf

- 8) The South West Heat Map – July 2010

Regen SW commissioned The Centre for Sustainable Energy (CSE) and Geofutures Ltd to produce an address-level heat demand map of the South West of England. This provides part of the Regen SW evidence base support programme for planners in the South West.

http://regensw.s3.amazonaws.com/sw_heat_map_report_final_version_reduced_a37841b639008ad4.pdf

NEFA – the national enterprise network: Enterprise Escalator

In their November 2010 publication *'Putting the 'E' into LEPs'* set out an Enterprise Escalator – this escalator sets out a number of progressive steps of comprehensive and effective business support recommended for the start up and early stages of businesses.

1. **Outreach and awareness raising:** there is a recognised need to continue to raise awareness of the opportunities entrepreneurship offices and to make specific efforts to engage with groups under-represented in entrepreneurship, both at a national and local level.
2. **Pre-start advice:** it is important to evaluate individual's skills and motivations to ensure they are consistent with a successful start. Their needs to be links back to alternative solutions for those who decide against start-up, such as adult training and employment opportunities.
3. **Start-up training:** everyone should be able to access introductory and basic training, in parallel with standard web, telephone and printed advice. Feedback to NEFA highlighted that there is a need for financial management training, to facilitate renewed lending into the small business sector.
4. **One to one support:** experience shows that spending time with an experienced business adviser is the most effective single form of support.
5. **Access to finance:** There are obvious challenges in resourcing start-up grants and deploying them effectively. Small grants can be effective as a marketing tool, and we know that if utilised carefully, small grants can be vital in getting some small enterprises off the ground and unlocking finance from other sources. CDFI's particularly business orientated ones, need further support and again can unlock much greater packages of finance from commercial sources.
6. **Mentoring:** provision of mentoring in the early stages of trading is limited at present. It should be available to a much wider audience than just those receiving the intensive start up support.
7. **Networking:** this can be a superb resource in terms of business development, confidence building and facilitating peer-to-peer networking which gets such high marks in most surveys of effective business support.
8. **Premises:** practical physical support, by way of incubation, workspace or even virtual incubation, can ease the way into business, provide valuable networking and peer support and facilitates on-going support, formally or informally.

NEFA recognise that local need and budgets may mean that the model needs to be flexed and view the model as a number of self-contained modules.