

# Engineering UK 2017

The state of engineering

## Annex



## 1. Acronyms and abbreviations

<b>AGR</b>	Association of Graduate Recruiters	<a href="http://www.agr.org.uk">www.agr.org.uk</a>
<b>A level</b>	General Certificate of Education Advanced level	
<b>AoC</b>	Association of Colleges	<a href="http://www.aoc.co.uk">www.aoc.co.uk</a>
<b>APS</b>	Annual Population Survey	
<b>ASHE</b>	Annual Survey of Hours and Earning	<a href="http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/index.html">www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/index.html</a>
<b>AS level</b>	Advanced Subsidiary level	
<b>AI</b>	Artificial Intelligence	
<b>AQA</b>	Assessment and Qualifications Alliance	<a href="http://www.aqa.org.uk/">www.aqa.org.uk/</a>
<b>BCS70</b>	British Cohort Study	<a href="http://www.cls.ioe.ac.uk/page.aspx?&amp;siteid=795&amp;site-sectionid=795&amp;site-sectiontitle=Welcome+to+the+1970+British+Cohort+Study">www.cls.ioe.ac.uk/page.aspx?&amp;siteid=795&amp;site-sectionid=795&amp;site-sectiontitle=Welcome+to+the+1970+British+Cohort+Study</a>
<b>BEIS</b>	Department for Business, Energy and Industrial Strategy	<a href="http://www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy">www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy</a>
<b>BIS</b>	Department for Business, Innovation and Skills	
<b>BME</b>	Black and Minority Ethnic	
<b>BRES</b>	Business Register and Employment Survey	<a href="http://www.ons.gov.uk/surveys/informationforbusinesses/businesssurveys/businessregisterandemploymentsurvey">www.ons.gov.uk/surveys/informationforbusinesses/businesssurveys/businessregisterandemploymentsurvey</a>
<b>BTEC</b>	Business and Technology Education Council	<a href="http://qualifications.pearson.com/en/about-us/qualification-brands/btec.html">qualifications.pearson.com/en/about-us/qualification-brands/btec.html</a>
<b>CBI</b>	Confederation of British Industry	<a href="http://www.cbi.org.uk">www.cbi.org.uk</a>
<b>CCDG</b>	Careers Choices Dewis Gyrfa	<a href="http://www.careerswales.com">www.careerswales.com</a>
<b>Cebr</b>	Centre for Economic and Business Research	<a href="http://www.cebr.com">www.cebr.com</a>
<b>CEng</b>	Chartered Engineer	
<b>CRAC</b>	Careers Research & Advisory Centre	<a href="http://www.crac.org.uk/">www.crac.org.uk/</a>
<b>DCLG</b>	Department for Communities and Local Government	<a href="http://www.gov.uk/government/organisations/department-for-communities-and-local-government">www.gov.uk/government/organisations/department-for-communities-and-local-government</a>
<b>DELNI</b>	Department for Employment and Learning Northern Ireland	<a href="http://www.delni.gov.uk">www.delni.gov.uk</a>

<b>DENI</b>	Department of Education Northern Ireland	<a href="http://www.deni.gov.uk">www.deni.gov.uk</a>
<b>DfE</b>	Department for Education	<a href="http://www.education.gov.uk">www.education.gov.uk</a>
<b>DLHE</b>	Destination of Leavers from Higher Education	<a href="http://hesa.ac.uk/pubs/dlhe">hesa.ac.uk/pubs/dlhe</a>
<b>EBacc</b>	English Baccalaureate	
<b>EEBM</b>	Engineers and Engineering Brand Monitor	<a href="http://www.engineeringuk.com/research">www.engineeringuk.com/research</a>
<b>EBM</b>	Engineering Brand Monitor	<a href="http://www.engineeringuk.com/research">www.engineeringuk.com/research</a>
<b>EEA</b>	European Economic Area	
<b>EEF</b>	Engineering Employers Federation	<a href="http://www.eef.org.uk/">www.eef.org.uk/</a>
<b>EMT</b>	Engineering and Manufacturing Technologies	
<b>EngTech</b>	Engineering Technician	
<b>EPSRC</b>	Engineering and Physical Sciences Research Council	<a href="http://www.epsrc.ac.uk/">www.epsrc.ac.uk/</a>
<b>EU</b>	European Union	<a href="http://europa.eu/index_en.htm">europa.eu/index_en.htm</a>
<b>EY</b>	Ernst & Young	<a href="http://www.ey.com/uk/en/home">www.ey.com/uk/en/home</a>
<b>FE</b>	Further Education	
<b>FSM</b>	Free School Meals	
<b>GCSE</b>	General Certificate of Secondary Education	
<b>GDP</b>	Gross Domestic Product	
<b>GVA</b>	Gross Value Added	
<b>HE</b>	Higher Education	
<b>HEFCE</b>	Higher Education Funding Council for England	<a href="http://www.hefce.ac.uk">www.hefce.ac.uk</a>
<b>HESA</b>	Higher Education Statistics Agency	<a href="http://www.hesa.ac.uk">www.hesa.ac.uk</a>
<b>HMRC</b>	Her Majesty's Revenue & Customs	<a href="http://www.gov.uk/government/organisations/hm-revenue-customs">www.gov.uk/government/organisations/hm-revenue-customs</a>
<b>HNC</b>	Higher National Certificate	

<b>HND</b>	Higher National Diploma	
<b>IAC</b>	Industry Apprenticeship Council	<a href="http://semta.org.uk/iac">semta.org.uk/iac</a>
<b>IB</b>	International Baccalaureate	<a href="http://www.ibo.org/">www.ibo.org/</a>
<b>ICT</b>	Information and Communications Technology	
<b>ICTTech</b>	Information and Communications Technology Technician	
<b>IEng</b>	Incorporated Engineer	
<b>IFS</b>	Institute of Fiscal Studies	<a href="http://www.ifs.org.uk">www.ifs.org.uk</a>
<b>IGCSE</b>	International General Certificate of Secondary Education	
<b>IMechE</b>	Institution of Mechanical Engineers	<a href="http://www.imeche.org/">www.imeche.org/</a>
<b>IPPR</b>	Institute for Public Policy Research	<a href="http://www.ippr.org/">www.ippr.org/</a>
<b>IoP</b>	Institute of Physics	<a href="http://www.iop.org">www.iop.org</a>
<b>JCQ</b>	Joint Council for Qualifications	<a href="http://www.jcq.org.uk">www.jcq.org.uk</a>
<b>L-DHLE</b>	Longitudinal Destination of Leavers from Higher Education	
<b>LEP</b>	Local Enterprise Partnership	<a href="http://www.hesa.ac.uk/pubs/dlhe">www.hesa.ac.uk/pubs/dlhe</a>
<b>LFS</b>	Labour Force Survey	
<b>MA</b>	Modern Apprenticeship	
<b>NAO</b>	National Audit Office	
<b>NAS</b>	National Apprenticeship Service	<a href="http://www.nao.org.uk/">www.nao.org.uk/</a>
<b>NCUB</b>	National Centre for Universities & Business	<a href="http://www.apprenticeships.gov.uk">www.apprenticeships.gov.uk</a>
<b>NEC</b>	Not elsewhere classified	<a href="http://www.ncub.co.uk/">www.ncub.co.uk/</a>
<b>NEET</b>	Not in employment education or training	
<b>NQF</b>	National Qualifications Framework	
<b>NVQ</b>	National Vocational Qualification	

<b>OCR</b>	Oxford, Cambridge and RSA Examinations	<a href="http://www.ocr.org.uk">www.ocr.org.uk</a>
<b>OECD</b>	Organisation for Economic Co-operation and Development	<a href="http://www.oecd.org">www.oecd.org</a>
<b>Ofqual</b>	The Office of Qualifications and Examinations Regulation	<a href="http://www.ofqual.gov.uk">www.ofqual.gov.uk</a>
<b>Ofsted</b>	Office for Standards in Education, Children's Services and Skills	<a href="http://www.gov.uk/government/organisations/ofsted">www.gov.uk/government/organisations/ofsted</a>
<b>ONS</b>	Office for National Statistics	<a href="http://www.ons.gov.uk">www.ons.gov.uk</a>
<b>PAYE</b>	Pay as you earn	
<b>PEI</b>	Professional Engineering Institution	
<b>POLAR3</b>	Participation of Local Areas (third iteration)	
<b>PwC</b>	Pricewaterhouse Coopers	<a href="http://www.hefce.ac.uk/analysis/yp/POLAR/">www.hefce.ac.uk/analysis/yp/POLAR/</a>
<b>QCF</b>	Qualification and Credit Framework	<a href="http://www.pwc.com/gx/en.html">www.pwc.com/gx/en.html</a>
<b>QTS</b>	Qualified Teacher Status	
<b>R&amp;D</b>	Research and Development	
<b>RAEng</b>	Royal Academy of Engineering	<a href="http://www.raeng.org.uk">www.raeng.org.uk</a>
<b>REF</b>	Research Excellence Framework	<a href="http://www.ref.ac.uk">www.ref.ac.uk</a>
<b>RQF</b>	Regulated Qualifications Framework	<a href="http://ofqual.blog.gov.uk/2015/10/01/explaining-the-rqf/">ofqual.blog.gov.uk/2015/10/01/explaining-the-rqf/</a>
<b>SFA</b>	Skills Funding Agency	<a href="http://www.gov.uk/government/organisations/skills-funding-agency">www.gov.uk/government/organisations/skills-funding-agency</a>
<b>SIC</b>	Standard Industrial Classification	
<b>SME</b>	Small and medium-sized enterprise	
<b>SMMT</b>	Society of Motor Manufacturers & Traders	<a href="http://www.smmmt.co.uk/">www.smmmt.co.uk/</a>
<b>SOC</b>	Standard Occupational Classification	
<b>SQA</b>	Scottish Qualifications Authority	<a href="http://www.sqa.org.uk">www.sqa.org.uk</a>
<b>STEM</b>	Science, Technology, Engineering and Mathematics	
<b>SVQ</b>	Scottish Vocational Qualification	

<b>TRaM</b>	Technician Registration and Membership	
<b>THE</b>	Times Higher Education	<a href="http://www.timeshighereducation.com/">www.timeshighereducation.com/</a>
<b>UCAS</b>	Universities and Colleges Admissions Service	<a href="http://www.ucas.com">www.ucas.com</a>
<b>UKCES</b>	United Kingdom Commission for Employment and Skills	<a href="http://www.ukces.org.uk">www.ukces.org.uk</a>
<b>UKRI</b>	UK Research and Innovation	
<b>UK-SPEC</b>	UK Standards for Professional Engineering Competence	<a href="http://www.engc.org.uk/ukspec.aspx">www.engc.org.uk/ukspec.aspx</a>
<b>UoA</b>	Unit of Assessment	
<b>UPMAP</b>	Understanding participation rates in post-16 mathematics and physics	<a href="http://www.ioe.ac.uk/UPMAP">www.ioe.ac.uk/UPMAP</a>
<b>UTC</b>	University Technical College	
<b>VRQ</b>	Vocationally Related qualification	
<b>WISE</b>	Women in Science, Technology and Engineering	<a href="http://www.wisecampaign.org.uk">www.wisecampaign.org.uk</a>

## 2. The EngineeringUK Engineering footprint

There is not a universally agreed definition of the engineering sector in the UK. For practical purposes, including for this report, we define engineering as a sector through a selection of industries and/or as a range of job types through a selection of occupations. These are selected from the ONS Standard Occupational Classification 2010 (jobs) and the Standard Industrial Classification 2007 (companies). Together these selections form EngineeringUK's 'Engineering footprint'. While the selection is EngineeringUK's own it has been done in consultation with the Engineering Council and the Royal Academy of Engineering; it takes a relatively broad definition of engineering, particularly in terms of industries. At its core are engineering jobs that are in engineering companies ("SIC X SOC"), but the footprint also includes engineering jobs that are in non-engineering companies and non-engineering jobs that are in engineering companies.

### Standard Occupational Classifications in the Engineering Footprint

The Standard Occupational Classification was first published in 1990 to replace both the Classification of Occupations 1980 (CO80) and

the Classification of Occupations and Dictionary of Occupational Titles (CODOT). Since 1990 there have been two revisions, one in 2000 and the second in 2010. However, the two main concepts of the classification remain unchanged:

- kind of work performed – job
- competent performance of the tasks and duties – skill<sup>1</sup>

Table 17.5 lists the SOC 2010 codes used to define engineers and technicians.

EngineeringUK uses SOC codes in a binary manner for data analysis; that is, 100% of workers in a SOC code in the EngineeringUK engineering and technician footprint are counted as an engineer or technician.

Other organisations use sections of the footprint or apply proportions to the codes in order to facilitate sub-sector and bespoke analysis.

Standard Occupational Classifications (2010) used to define engineers

Code	Standard Occupation
1121	Production managers and directors in manufacturing
1122	Production managers and directors in construction
1123	Production managers and directors in mining and energy
1136	Information technology and telecommunications directors
1255	Waste disposal and environmental services managers
2121	Civil engineers
2122	Mechanical engineers
2123	Electrical engineers
2124	Electronics engineers

2126	Design and development engineers	3119	Science, engineering and production technicians n.e.c.	5235	Aircraft maintenance and related trades
2127	Production and process engineers	3121	Architectural and town planning technicians	5236	Boat and ship builders and repairers
2129	Engineering professionals n.e.c.	3122	Draughtspersons	5237	Rail and rolling stock builders and repairers
2133	IT specialist managers	3131	IT operations technicians	5241	Electricians and electrical fitters
2134	IT project and programme managers	3132	IT user support technicians	5242	Telecommunications engineers
2135	IT business analysts, architects and systems designers	3218	Medical and dental technicians	5244	TV, video and audio engineers
2136	Programmers and software development professionals	3422	Product, clothing and related designers	5245	IT engineers
2139	Information technology and telecommunications professionals n.e.c.	3512	Aircraft pilots and flight engineers	5249	Electrical and electronic trades n.e.c.
2150	Research and development managers	3565	Inspectors of standards and regulations	5250	Skilled metal, electrical and electronic trades supervisors
2431	Architects	5211	Smiths and forge workers	5311	Steel erectors
2433	Quantity surveyors	5212	Moulders, core makers and die casters	5312	Bricklayers and masons
2434	Chartered surveyors	5213	Sheet metal workers	5313	Roofers, roof tilers and slaters
2435	Chartered architectural technologists	5214	Metal plate workers, and riveters	5314	Plumbers and heating and ventilating engineers
2436	Construction project managers and related professionals	5215	Welding trades	5315	Carpenters and joiners
2461	Quality control and planning engineers	5216	Pipe fitters	5316	Glaziers, window fabricators and fitters
2462	Quality assurance and regulatory professionals	5221	Metal machining setters and setter-operators	5319	Construction and building trades n.e.c.
3111	Laboratory technicians	5222	Tool makers, tool fitters and markers-out	5330	Construction and building trades supervisors
3112	Electrical and electronics technicians	5223	Metal working production and maintenance fitters	5422	Printers
3113	Engineering technicians	5224	Precision instrument makers and repairers	8111	Food, drink and tobacco process operatives
3114	Building and civil engineering technicians	5225	Air-conditioning and refrigeration engineers	8112	Glass and ceramics process operatives
3115	Quality assurance technicians	5231	Vehicle technicians, mechanics and electricians	8113	Textile process operatives
3116	Planning, process and production technicians	5232	Vehicle body builders and repairers	8114	Chemical and related process operatives
		5234	Vehicle paint technicians	8115	Rubber process operatives

8116	Plastics process operatives	8129	Plant and machine operatives n.e.c.	8232	Marine and waterways transport operatives
8117	Metal making and treating process operatives	8131	Assemblers (electrical and electronic products)	9120	Elementary construction occupations
8118	Electroplaters	8132	Assemblers (vehicles and metal goods)	9132	Industrial cleaning process occupations
8119	Process operatives n.e.c.	8133	Routine inspectors and testers	9134	Packers, bottlers, canners and fillers
8121	Paper and wood machine operatives	8134	Weighers, graders and sorters	9139	Elementary process plant occupations n.e.c.
8122	Coal mine operatives	8135	Tyre, exhaust and windscreen fitters		
8123	Quarry workers and related operatives	8139	Assemblers and routine operatives n.e.c.		
8124	Energy plant operatives	8141	Scaffolders, staggers and riggers		
8125	Metal working machine operatives	8142	Road construction operatives		
8126	Water and sewerage plant operatives	8143	Rail construction and maintenance operatives		
8127	Printing machine assistants	8149	Construction operatives n.e.c.		

### Standard Industrial Classification (SIC) codes in the Engineering footprint

A Standard Industrial Classification (SIC) was first introduced into the UK in 1948 for use in classifying business establishments and other statistical units by the type of economic activity in which they are engaged. The classification provides a framework for the collection, tabulation, presentation and analysis of data, and its use promotes uniformity. In addition, it can be used for administrative purposes and by non-government bodies as a convenient way of classifying industrial activities into a common structure. Since 1948 the classification has been revised in 1958, 1968, 1980, 1992, 1997, 2003 and 2007.<sup>2</sup>

Standard Industrial Classification (2007) codes used to define engineering enterprises.

Code	Description	Code	Description	Code	Description
01630	Post-harvest crop activities	05101	Deep coal mines	08930	Extraction of salt
01640	Seed processing for propagation	05102	Open cast coal working	08990	Other mining and quarrying n.e.c.
		05200	Mining of lignite	09100	Support activities for petroleum and natural gas mining
		06100	Extraction of crude petroleum	09900	Support activities for other mining and quarrying
		06200	Extraction of natural gas	10130	Production of meat and poultry meat products
		07100	Mining of iron ores	10200	Processing and preserving of fish, crustaceans and molluscs
		07210	Mining of uranium and thorium ores	10310	Processing and preserving of potatoes
		07290	Mining of other non-ferrous metal ores	10320	Manufacture of fruit and vegetable juice
		08110	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	10390	Other processing and preserving of fruit and vegetables
		08120	Operation of gravel and sand pits; mining of clays and kaolin	10410	Manufacture of oils and fats
		08910	Mining of chemical and fertilizer minerals	10420	Manufacture of margarine and similar edible fats



10511	Liquid milk and cream production	11020	Manufacture of wine from grape	14131	Manufacture of other men's outerwear
10512	Butter and cheese production	11030	Manufacture of cider and other fruit wines	14132	Manufacture of other women's outerwear
10519	Manufacture of other milk products	11040	Manufacture of other non-distilled fermented beverages	14141	Manufacture of men's underwear
10520	Manufacture of ice cream	11050	Manufacture of beer	14142	Manufacture of women's underwear
10611	Grain milling	11060	Manufacture of malt	14190	Manufacture of other wearing apparel and accessories n.e.c.
10612	Manufacture of breakfast cereals and cereals-based food	11070	Manufacture of soft drinks; production of mineral waters and other bottled waters	14200	Manufacture of articles of fur
10620	Manufacture of starches and starch products	12000	Manufacture of tobacco products	14310	Manufacture of knitted and crocheted hosiery
10710	Manufacture of bread; manufacture of fresh pastry goods and cakes	13100	Preparation and spinning of textile fibres	14390	Manufacture of other knitted and crocheted apparel
10720	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	13200	Weaving of textiles	15110	Tanning and dressing of leather; dressing and dyeing of fur
10730	Manufacture of macaroni, noodles, couscous and similar farinaceous products	13300	Finishing of textiles	15120	Manufacture of luggage, handbags and the like, saddlery and harness
10810	Manufacture of sugar	13910	Manufacture of knitted and crocheted fabrics	15200	Manufacture of footwear
10821	Manufacture of cocoa and chocolate confectionery	13921	Manufacture of soft furnishings	16100	Sawmilling and planing of wood
10822	Manufacture of sugar confectionery	13922	Manufacture of canvas goods, sacks, etc.	16210	Manufacture of veneer sheets and wood-based panels
10831	Tea processing	13923	Manufacture of household textiles	16220	Manufacture of assembled parquet floors
10832	Production of coffee and coffee substitutes	13931	Manufacture of woven or tufted carpets and rugs	16230	Manufacture of other builders' carpentry and joinery
10840	Manufacture of condiments and seasonings	13939	Manufacture of other carpets and rugs	16240	Manufacture of wooden containers
10850	Manufacture of prepared meals and dishes	13940	Manufacture of cordage, rope, twine and netting	16290	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials
10860	Manufacture of homogenized food preparations and dietetic food	13950	Manufacture of non-wovens and articles made from non-wovens, except apparel	17110	Manufacture of pulp
10890	Manufacture of other food products n.e.c.	13960	Manufacture of other technical and industrial textiles	17120	Manufacture of paper and paperboard
10910	Manufacture of prepared feeds for farm animals	13990	Manufacture of other textiles n.e.c.	17211	Manufacture of corrugated paper and paperboard, sacks and bags
10920	Manufacture of prepared pet foods	14110	Manufacture of leather clothes	17219	Manufacture of other paper and paperboard containers
11010	Distilling, rectifying and blending of spirits	14120	Manufacture of workwear	17220	Manufacture of household and sanitary goods and of toilet requisites

17230	Manufacture of paper stationery	20301	Manufacture of paints, varnishes and similar coatings, mastics and sealants	23190	Manufacture and processing of other glass, including technical glassware
17240	Manufacture of wallpaper	20302	Manufacture of printing ink	23200	Manufacture of refractory products
17290	Manufacture of other articles of paper and paperboard n.e.c.	20411	Manufacture of soap and detergents	23310	Manufacture of ceramic tiles and flags
18110	Printing of newspapers	20412	Manufacture of cleaning and polishing preparations	23320	Manufacture of bricks, tiles and construction products, in baked clay
18121	Manufacture of printed labels	20420	Manufacture of perfumes and toilet preparations	23410	Manufacture of ceramic household and ornamental articles
18129	Printing n.e.c.	20510	Manufacture of explosives	23420	Manufacture of ceramic sanitary fixtures
18130	Pre-press and pre-media services	20520	Manufacture of glues	23430	Manufacture of ceramic insulators and insulating fittings
18140	Binding and related services	20530	Manufacture of essential oils	23440	Manufacture of other technical ceramic products
18201	Reproduction of sound recording	20590	Manufacture of other chemical products n.e.c.	23490	Manufacture of other ceramic products n.e.c.
18202	Reproduction of video recording	20600	Manufacture of man-made fibres	23510	Manufacture of cement
18203	Reproduction of computer media	21100	Manufacture of basic pharmaceutical products	23520	Manufacture of lime and plaster
19100	Manufacture of coke oven products	21200	Manufacture of pharmaceutical preparations	23610	Manufacture of concrete products for construction purposes
19201	Mineral oil refining	22110	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres	23620	Manufacture of plaster products for construction purposes
19209	Other treatment of petroleum products (excluding petrochemicals manufacture)	22190	Manufacture of other rubber products	23630	Manufacture of ready-mixed concrete
20110	Manufacture of industrial gases	22210	Manufacture of plastic plates, sheets, tubes and profiles	23640	Manufacture of mortars
20120	Manufacture of dyes and pigments	22220	Manufacture of plastic packing goods	23650	Manufacture of fibre cement
20130	Manufacture of other inorganic basic chemicals	22230	Manufacture of builders' ware of plastic	23690	Manufacture of other articles of concrete, plaster and cement
20140	Manufacture of other organic basic chemicals	22290	Manufacture of other plastic products	23700	Cutting, shaping and finishing of stone
20150	Manufacture of fertilizers and nitrogen compounds	23110	Manufacture of flat glass	23910	Production of abrasive products
20160	Manufacture of plastics in primary forms	23120	Shaping and processing of flat glass	23990	Manufacture of other non-metallic mineral products n.e.c.
20170	Manufacture of synthetic rubber in primary forms	23130	Manufacture of hollow glass	24100	Manufacture of basic iron and steel and of ferro-alloys
20200	Manufacture of pesticides and other agrochemical products	23140	Manufacture of glass fibres	24200	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
				24310	Cold drawing of bars

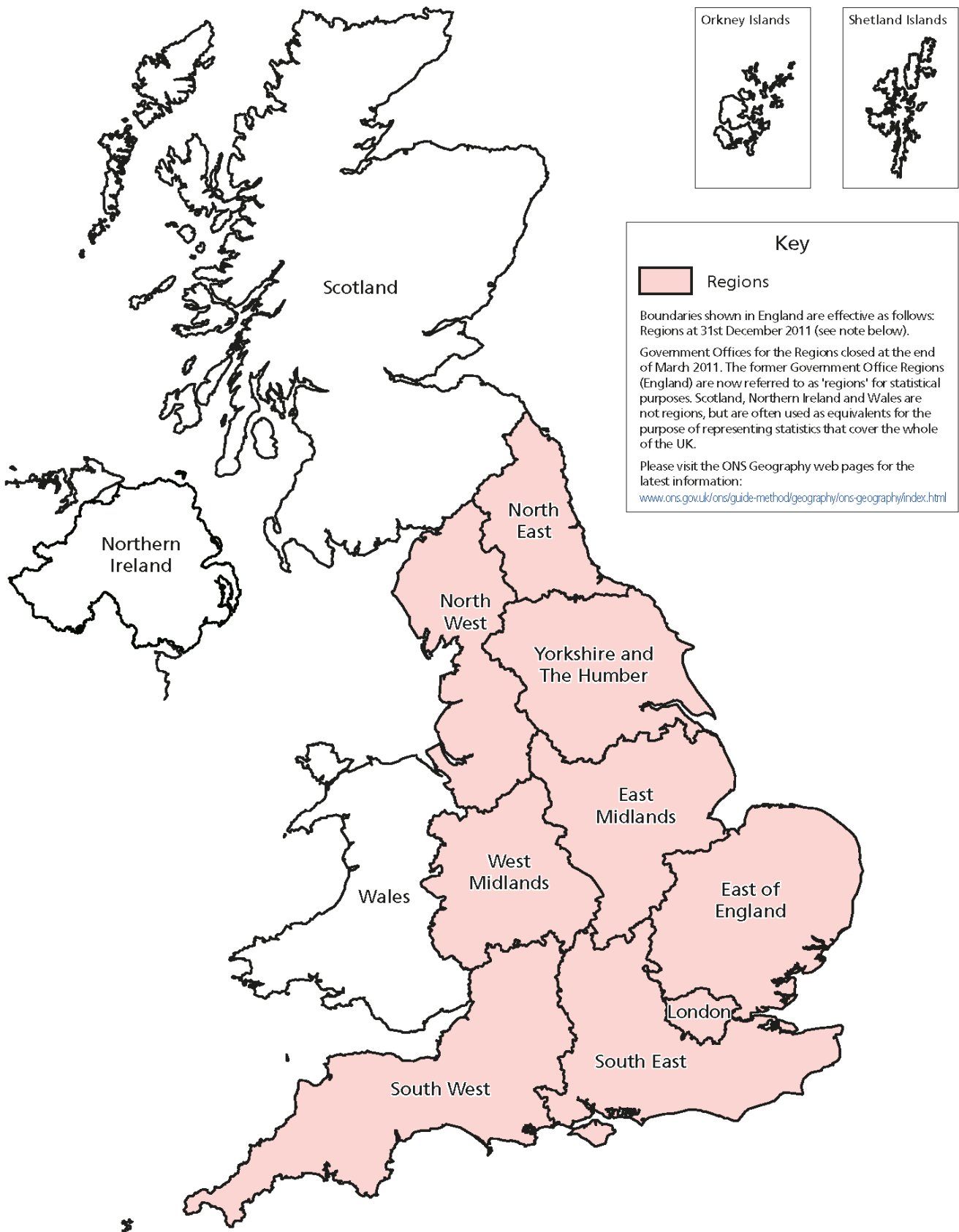
24320	Cold rolling of narrow strip	25720	Manufacture of locks and hinges	26702	Manufacture of photographic and cinematographic equipment
24330	Cold forming or folding	25730	Manufacture of tools	26800	Manufacture of magnetic and optical media
24340	Cold drawing of wire	25910	Manufacture of steel drums and similar containers	27110	Manufacture of electric motors, generators and transformers
24410	Precious metals production	25920	Manufacture of light metal packaging	27120	Manufacture of electricity distribution and control apparatus
24420	Aluminium production	25930	Manufacture of wire products, chain and springs	27200	Manufacture of batteries and accumulators
24430	Lead, zinc and tin production	25940	Manufacture of fasteners and screw machine products	27310	Manufacture of fibre optic cables
24440	Copper production	25990	Manufacture of other fabricated metal products n.e.c.	27320	Manufacture of other electronic and electric wires and cables
24450	Other non-ferrous metal production	26110	Manufacture of electronic components	27330	Manufacture of wiring devices
24460	Processing of nuclear fuel	26120	Manufacture of loaded electronic boards	27400	Manufacture of electric lighting equipment
24510	Casting of iron	26200	Manufacture of computers and peripheral equipment	27510	Manufacture of electric domestic appliances
24520	Casting of steel	26301	Manufacture of telegraph and telephone apparatus and equipment	27520	Manufacture of non-electric domestic appliances
24530	Casting of light metals	26309	Manufacture of communication equipment other than telegraph, and telephone apparatus and equipment	27900	Manufacture of other electrical equipment
24540	Casting of other non-ferrous metals	26400	Manufacture of consumer electronics	28110	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
25110	Manufacture of metal structures and parts of structures	26511	Manufacture of electronic instruments and appliances for measuring, checking, testing, navigation and other purposes, except industrial process control equipment	28120	Manufacture of fluid power equipment
25120	Manufacture of doors and windows of metal	26512	Manufacture of electronic industrial process control equipment	28131	Manufacture of pumps
25210	Manufacture of central heating radiators and boilers	26513	Manufacture of non-electronic instruments and appliances for measuring, checking, testing, navigation and other purposes, except process control equipment	28132	Manufacture of compressors
25290	Manufacture of other tanks, reservoirs and containers of metal	26514	Manufacture of non-electronic industrial process control equipment	28140	Manufacture of taps and valves
25300	Manufacture of steam generators, except central heating hot water boilers	26520	Manufacture of watches and clocks	28150	Manufacture of bearings, gears, gearing and driving elements
25400	Manufacture of weapons and ammunition	26600	Manufacture of irradiation, electromedical and electrotherapeutic equipment	28210	Manufacture of ovens, furnaces and furnace burners
25500	Forging, pressing, stamping and roll-forming of metal; powder metallurgy	26701	Manufacture of optical precision instruments	28220	Manufacture of lifting and handling equipment
25610	Treatment and coating of metals			28230	Manufacture of office machinery and equipment (except computers and peripheral equipment)
25620	Machining			28240	Manufacture of power-driven hand tools
25710	Manufacture of cutlery				

<b>28250</b>	Manufacture of non-domestic cooling and ventilation equipment	<b>30120</b>	Building of pleasure and sporting boats	<b>33140</b>	Repair of electrical equipment
<b>28290</b>	Manufacture of other general-purpose machinery n.e.c.	<b>30200</b>	Manufacture of railway locomotives and rolling stock	<b>33150</b>	Repair and maintenance of ships and boats
<b>28301</b>	Manufacture of agricultural tractors	<b>30300</b>	Manufacture of air and spacecraft and related machinery	<b>33160</b>	Repair and maintenance of aircraft and spacecraft
<b>28302</b>	Manufacture of agricultural and forestry machinery other than tractors	<b>30400</b>	Manufacture of military fighting vehicles	<b>33170</b>	Repair and maintenance of other transport equipment n.e.c.
<b>28410</b>	Manufacture of metal forming machinery	<b>30910</b>	Manufacture of motorcycles	<b>33190</b>	Repair of other equipment
<b>28490</b>	Manufacture of other machine tools n.e.c.	<b>30920</b>	Manufacture of bicycles and invalid carriages	<b>33200</b>	Installation of industrial machinery and equipment
<b>28910</b>	Manufacture of machinery for metallurgy	<b>30990</b>	Manufacture of other transport equipment n.e.c.	<b>35110</b>	Production of electricity
<b>28921</b>	Manufacture of machinery for mining	<b>31010</b>	Manufacture of office and shop furniture	<b>35120</b>	Transmission of electricity
<b>28922</b>	Manufacture of earthmoving equipment	<b>31020</b>	Manufacture of kitchen furniture	<b>35130</b>	Distribution of electricity
<b>28923</b>	Manufacture of equipment for concrete crushing and screening and roadworks	<b>31030</b>	Manufacture of mattresses	<b>35210</b>	Manufacture of gas
<b>28930</b>	Manufacture of machinery for food, beverage and tobacco processing	<b>31090</b>	Manufacture of other furniture	<b>35220</b>	Distribution of gaseous fuels through mains
<b>28940</b>	Manufacture of machinery for textile, apparel and leather production	<b>32110</b>	Striking of coins	<b>35300</b>	Steam and air conditioning supply
<b>28950</b>	Manufacture of machinery for paper and paperboard production	<b>32130</b>	Manufacture of imitation jewellery and related articles	<b>36000</b>	Water collection, treatment and supply
<b>28960</b>	Manufacture of plastics and rubber machinery	<b>32200</b>	Manufacture of musical instruments	<b>37000</b>	Sewerage
<b>28990</b>	Manufacture of other special-purpose machinery n.e.c.	<b>32300</b>	Manufacture of sports goods	<b>38210</b>	Treatment and disposal of non-hazardous waste
<b>29100</b>	Manufacture of motor vehicles	<b>32401</b>	Manufacture of professional and arcade games and toys	<b>38220</b>	Treatment and disposal of hazardous waste
<b>29201</b>	Manufacture of bodies (coachwork) for motor vehicles (except caravans)	<b>32409</b>	Manufacture of other games and toys, n.e.c.	<b>38310</b>	Dismantling of wrecks
<b>29202</b>	Manufacture of trailers and semi-trailers	<b>32500</b>	Manufacture of medical and dental instruments and supplies	<b>38320</b>	Recovery of sorted materials
<b>29203</b>	Manufacture of caravans	<b>32910</b>	Manufacture of brooms and brushes	<b>39000</b>	Remediation activities and other waste management services
<b>29310</b>	Manufacture of electrical and electronic equipment for motor vehicles	<b>32990</b>	Other manufacturing n.e.c.	<b>41201</b>	Construction of commercial buildings
<b>29320</b>	Manufacture of other parts and accessories for motor vehicles and their engines	<b>33110</b>	Repair of fabricated metal products	<b>41202</b>	Construction of domestic buildings
<b>30110</b>	Building of ships and floating structures	<b>33120</b>	Repair of machinery	<b>42110</b>	Construction of roads and motorways
		<b>33130</b>	Repair of electronic and optical equipment	<b>42120</b>	Construction of railways and underground railways

<b>42130</b>	Construction of bridges and tunnels	<b>58141</b>	Publishing of learned journals	<b>62090</b>	Other information technology and computer service activities
<b>42210</b>	Construction of utility projects for fluids	<b>58142</b>	Publishing of consumer and business journals and periodicals	<b>63110</b>	Data processing, hosting and related activities
<b>42220</b>	Construction of utility projects for electricity and telecommunications	<b>58190</b>	Other publishing activities	<b>63120</b>	Web portals
<b>42910</b>	Construction of water projects	<b>58210</b>	Publishing of computer games	<b>71111</b>	Architectural activities
<b>42990</b>	Construction of other civil engineering projects n.e.c.	<b>58290</b>	Other software publishing	<b>71112</b>	Urban planning and landscape architectural activities
<b>43110</b>	Demolition	<b>59111</b>	Motion picture production activities	<b>71121</b>	Engineering design activities for industrial process and production
<b>43120</b>	Site preparation	<b>59112</b>	Video production activities	<b>71122</b>	Engineering related scientific and technical consulting activities
<b>43130</b>	Test drilling and boring	<b>59113</b>	Television programme production activities	<b>71129</b>	Other engineering activities
<b>43210</b>	Electrical installation	<b>59120</b>	Motion picture, video and television programme post-production activities	<b>71200</b>	Technical testing and analysis
<b>43220</b>	Plumbing, heat and air-conditioning installation	<b>59200</b>	Sound recording and music publishing activities	<b>72190</b>	Other research and experimental development on natural sciences and engineering
<b>43290</b>	Other construction installation	<b>61100</b>	Wired telecommunications activities	<b>74901</b>	Environmental consulting activities
<b>43999</b>	Other specialised construction activities n.e.c.	<b>61200</b>	Wireless telecommunications activities	<b>74902</b>	Quantity surveying activities
<b>45200</b>	Maintenance and repair of motor vehicles	<b>61300</b>	Satellite telecommunications activities	<b>80200</b>	Security systems service activities
<b>49500</b>	Transport via pipeline	<b>61900</b>	Other telecommunications activities	<b>84220</b>	Defence activities
<b>51220</b>	Space transport	<b>62011</b>	Ready-made interactive leisure and entertainment software development	<b>95110</b>	Repair of computers and peripheral equipment
<b>58110</b>	Book publishing	<b>62012</b>	Business and domestic software development	<b>95120</b>	Repair of communication equipment
<b>58120</b>	Publishing of directories and mailing lists	<b>62020</b>	Computer consultancy activities	<b>95210</b>	Repair of consumer electronics
<b>58130</b>	Publishing of newspapers	<b>62030</b>	Computer facilities management activities	<b>95220</b>	Repair of household appliances and home and garden equipment

3. Geography, regions and Local Enterprise Partnerships

Nations and regions (2011) – UK

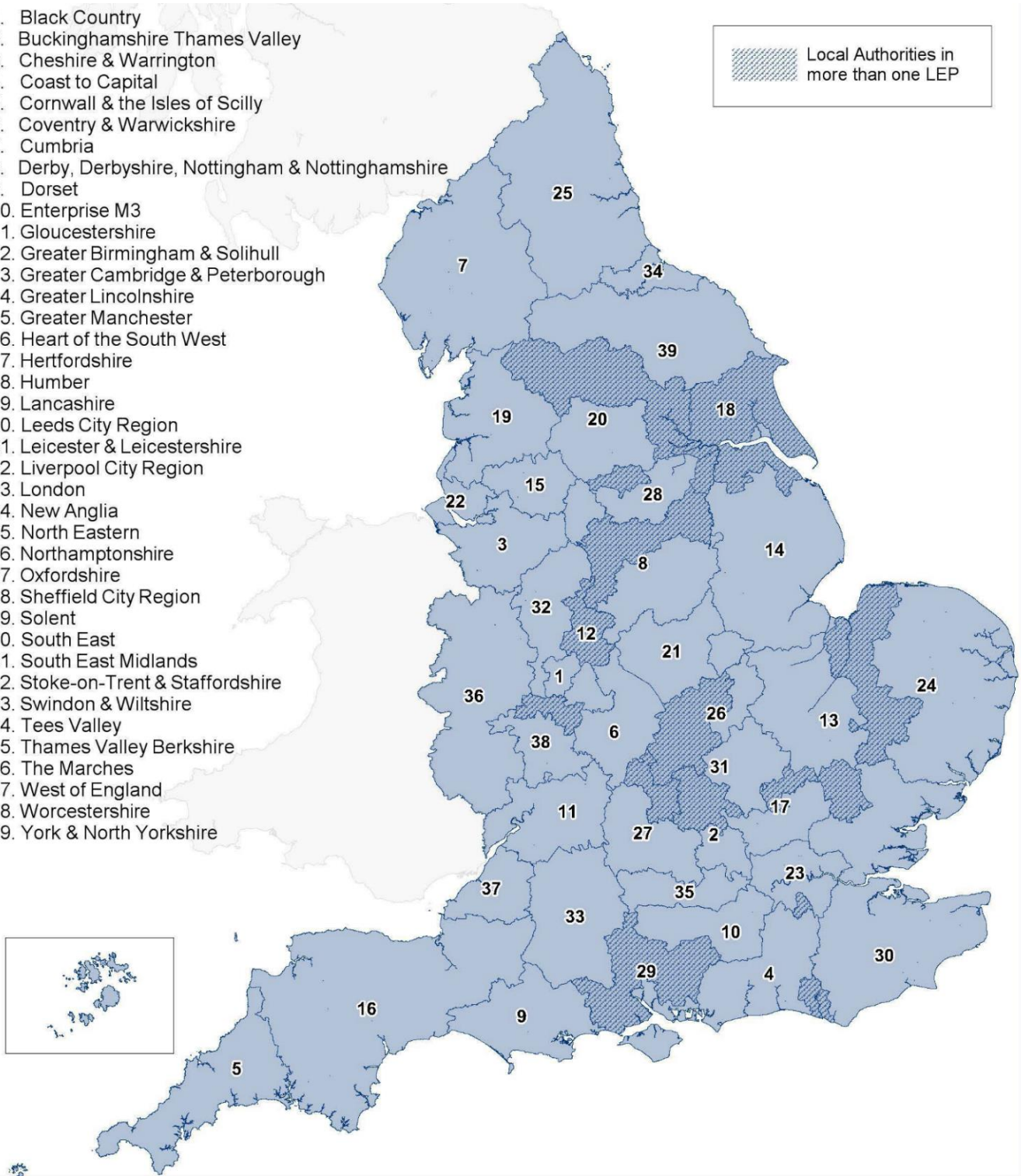
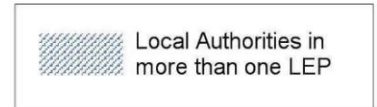


Source: Office for National Statistics<sup>3</sup>



## Local Enterprise Partnerships (2013) - England

1. Black Country
2. Buckinghamshire Thames Valley
3. Cheshire & Warrington
4. Coast to Capital
5. Cornwall & the Isles of Scilly
6. Coventry & Warwickshire
7. Cumbria
8. Derby, Derbyshire, Nottingham & Nottinghamshire
9. Dorset
10. Enterprise M3
11. Gloucestershire
12. Greater Birmingham & Solihull
13. Greater Cambridge & Peterborough
14. Greater Lincolnshire
15. Greater Manchester
16. Heart of the South West
17. Hertfordshire
18. Humber
19. Lancashire
20. Leeds City Region
21. Leicester & Leicestershire
22. Liverpool City Region
23. London
24. New Anglia
25. North Eastern
26. Northamptonshire
27. Oxfordshire
28. Sheffield City Region
29. Solent
30. South East
31. South East Midlands
32. Stoke-on-Trent & Staffordshire
33. Swindon & Wiltshire
34. Tees Valley
35. Thames Valley Berkshire
36. The Marches
37. West of England
38. Worcestershire
39. York & North Yorkshire



Source: Department of Business, Innovation and Skills<sup>4</sup>

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**Region(s) covered by Local Enterprise Partnerships (LEPs)**

LEP	Region
Black Country	West Midlands
Buckinghamshire Thames Valley	South East
Cheshire and Warrington	North West
Coast to Capital	South East (part London)
Cornwall and the Isles of Scilly	South West
Coventry and Warwickshire	West Midlands
Cumbria	North West
Derby, Derbyshire, Nottingham and Nottinghamshire	East Midlands
Dorset	South West
Enterprise M3	South East
Gloucestershire	South West
Greater Birmingham and Solihull	West Midlands
Greater Cambridge & Greater Peterborough	East of England (part East Midlands)
Greater Lincolnshire	East Midlands (part Yorkshire and The Humber)
Greater Manchester	North West
Heart of the South West	South West
Hertfordshire	East of England
Humber	Yorkshire and The Humber
Lancashire	North West
Leeds City Region	Yorkshire and The Humber
Leicester and Leicestershire	East Midlands
Liverpool City Region	North West
London	London
New Anglia	East of England
North Eastern	North East
Northamptonshire	East Midlands
Oxfordshire	South East
Sheffield City Region	Yorkshire and The Humber (part East Midlands)
Solent	South East
South East	South East (part East of England)
South East Midlands	East Midlands (part South East and East of England)
Stoke-on-Trent and Staffordshire	West Midlands
Swindon and Wiltshire	South West
Tees Valley	North East
Thames Valley Berkshire	South East
The Marches	West Midlands
West of England	South West
Worcestershire	West Midlands
York, North Yorkshire and East Riding	Yorkshire and The Humber

Source: Adapted from Department for Business, Innovation and Skills<sup>5</sup>



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<sup>1</sup> Adapted from *About the standard occupational classification 2010 (SOC2010)*, Office for National Statistics, <https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2010.html>

<sup>2</sup> Adapted from *UK Standard Industrial Classification of Economic Activities 2007 (UK SIC 2007)*, Office for National Statistics; <http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html>

<sup>3</sup> *United Kingdom: Regions, 2011*, Office for National Statistics, 2011; [https://geoportal.statistics.gov.uk/Docs/Maps/Regions\\_\(Eng\)\\_2011\\_map.pdf](https://geoportal.statistics.gov.uk/Docs/Maps/Regions_(Eng)_2011_map.pdf)

<sup>4</sup> *Local Enterprise Partnerships*, Office for National Statistics, 2013; [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/252793/bis-11-768-local-enterprise-partnerships-boundary-map-august-2013.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/252793/bis-11-768-local-enterprise-partnerships-boundary-map-august-2013.pdf)

<sup>5</sup> *Mapping local comparative advantages in innovation: Framework and indicators*, Department for Business, Innovation and Skills, July 2015; [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/468179/bis-15-344-mapping-local-comparative-advantages-in-innovation-framework-and-indicators.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/468179/bis-15-344-mapping-local-comparative-advantages-in-innovation-framework-and-indicators.pdf)