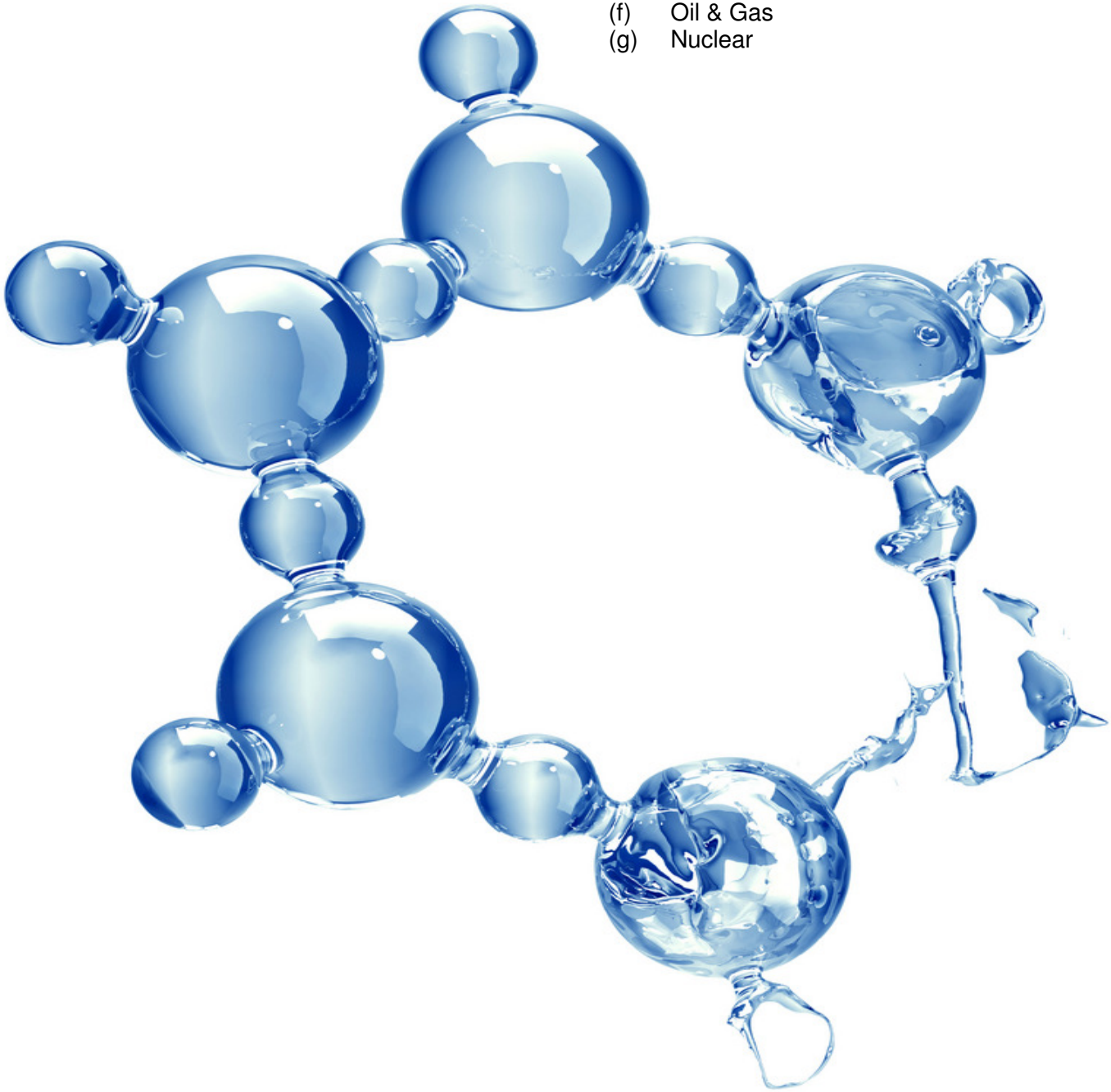


Appendix 2

Industry Factsheets 2010

Contents:

- (a) Cogent Corporate Factsheet
- (b) Chemicals
- (c) Pharmaceuticals & Medical Biotechnology
- (d) Polymers
- (e) Petroleum
- (f) Oil & Gas
- (g) Nuclear





Cogent Sector Skills Council - Labour Market & Econometric Data 2010

It is the skills of apprentices, technicians, scientists and engineers that add value to the science-based industries.

The industries are: world-leading (**Pharmaceuticals**) and wealth-creating (**Oil and Gas**); many are incubators of new technologies (**Chemicals – Industrial Biotechnology, Plastics - Composites**); some are strategically important (**Nuclear – Civil and Defence**); all contribute significantly to the infrastructure of our economy and society.

Economic Picture¹

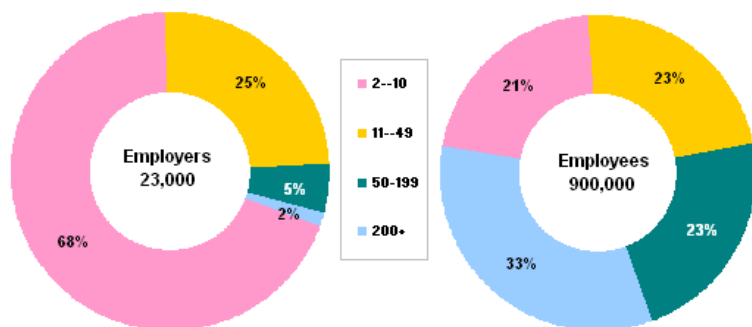
Industry	Turnover £ / bn	GVA £ / bn	GVA per Employee £
Chemicals	42.97	9.34	89,029
Pharmaceuticals and Medical Biotechnology	20.43	8.19	192,067
Nuclear (fuel processing)	2.26	1.12	74,467
Oil and Gas	57.88	34.13	1,101,032
Petroleum	54.76	4.60	69,758
Polymers	22.76	8.11	36,115
Overall	201.06	65.49	260,411

Headlines

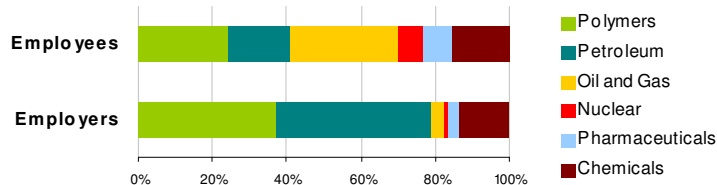
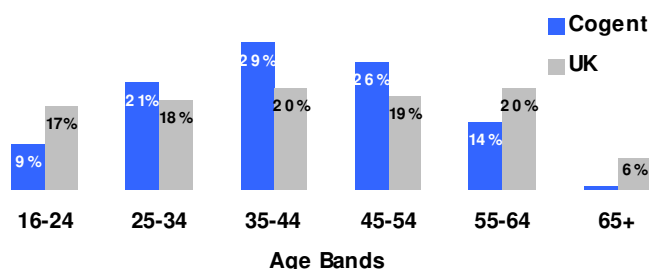
- The Cogent sector accounts for 6.5% of the whole UK GVA
- The industries directly supports over 900,000 people in high value jobs and indirectly supports around three times as many.
- The industries spend nearly £7.8bn a year on new capital investment and research and development, equivalent to 10% of operating profit.
- The industries account for 10% of UK manufacturing and employ 16% of the UK manufacturing workforce
- The average annual growth rate for the combined sectors is 4.5%. In 2012 the total footprint is forecast to reach a turnover of £221.8bn
- Combined Industries contributed £3.7bn to the UK fiscal balance in 2009.

The Workforce

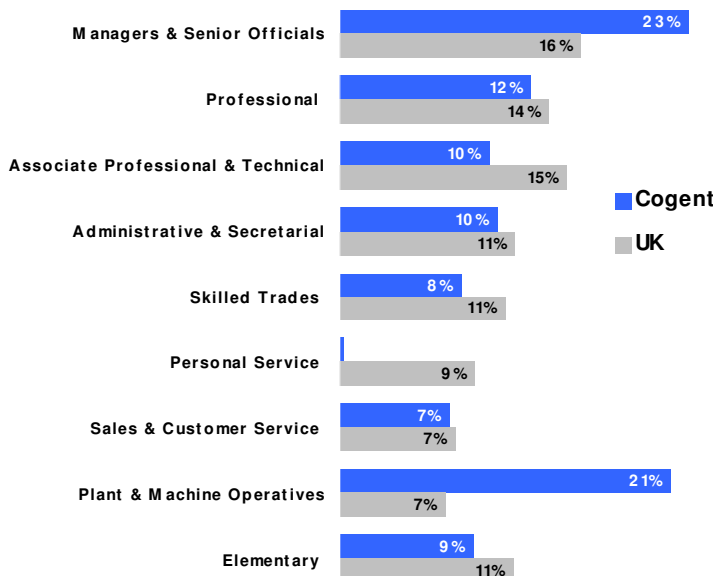
Employers and Employees by Company Size^{3,6,10}



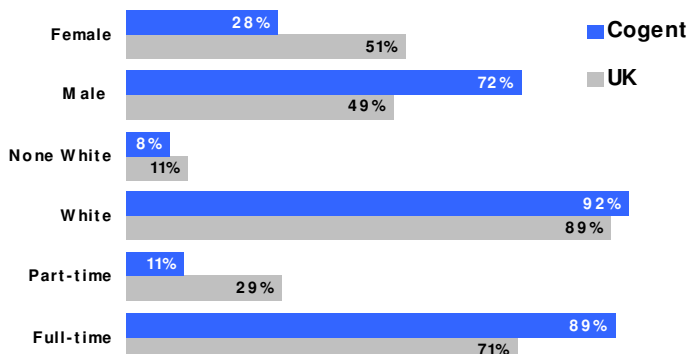
Age Profile^{2,10}



Occupational Distribution^{2,10}



Workforce Distribution¹

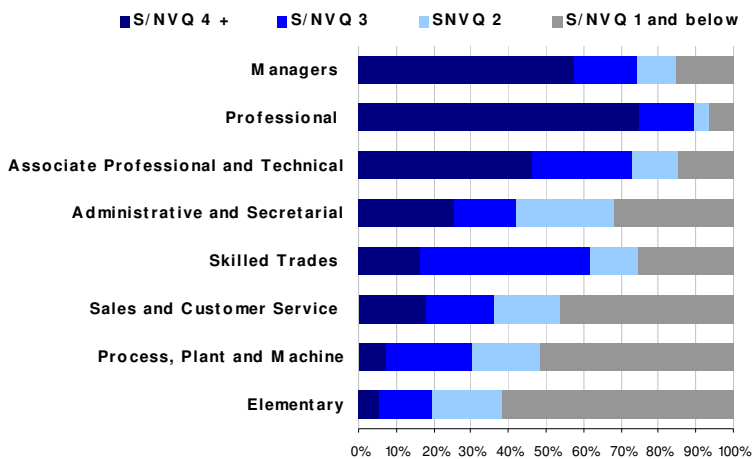


1. Annual Business Enquiry (ABI) 2008, Office of National Statistics (ONS) 2010
2. Labour Force Survey (LFS) 2009 (4 Qtr Average), ESDS 2010

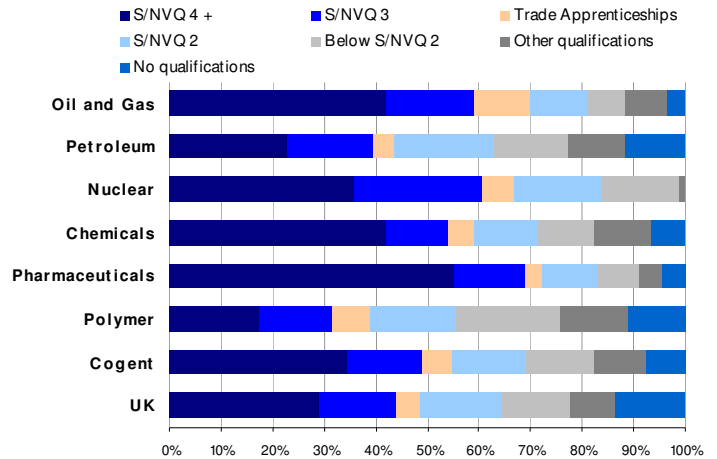
* GVA - Gross value added (GVA) represents the amount that individual businesses, industries or sectors contribute to the economy.

Skill Level

Skill Level of Workforce - Cogent²

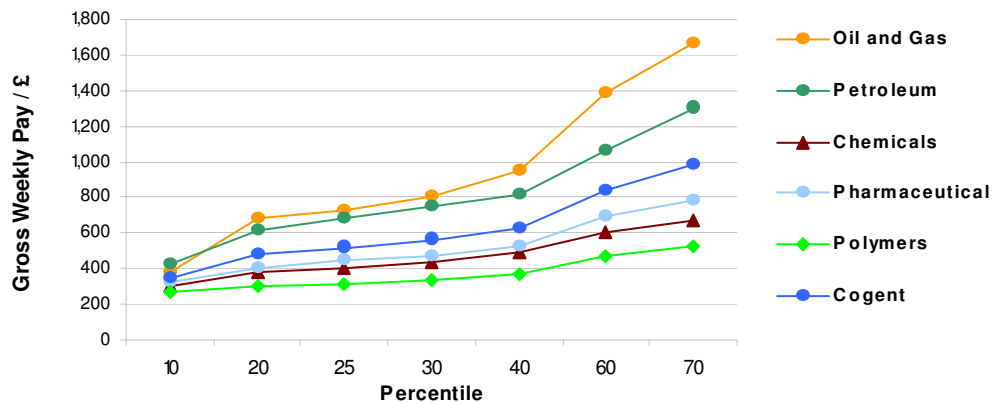


Skill Level of Workforce by Industry²



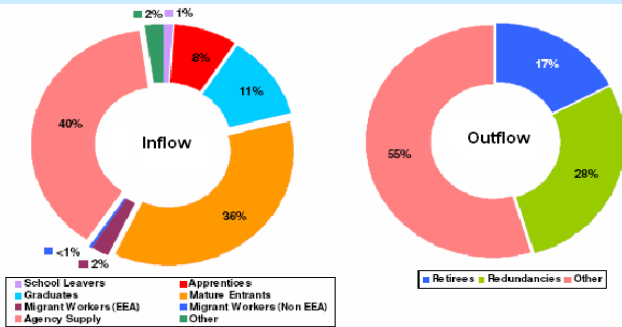
Earnings- Weekly pay⁵

Industry	Weekly pay Gross (£) Median-F/T
Oil and Gas	1,182
Petroleum	928
Nuclear	*
Chemicals	543
Pharmaceuticals	614
Polymer	414
Cogent	736
UK	488



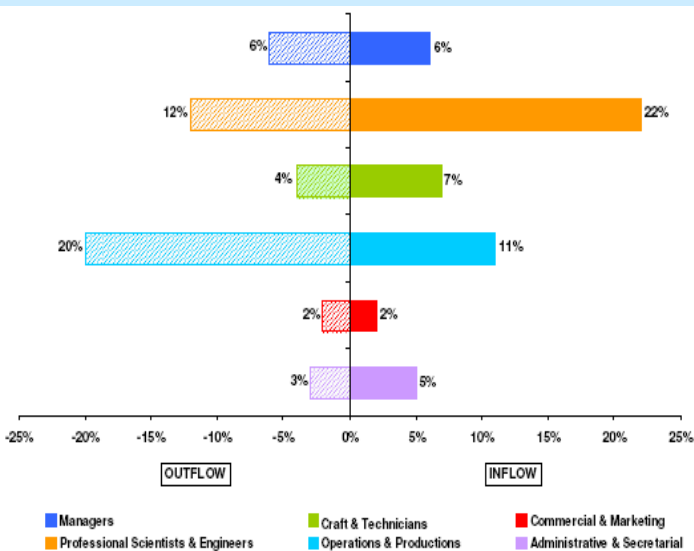
Employment and Workforce Distribution

Inflow and Outflow⁴



- **The inflow** of employment indicated that most Cogent companies recruited Agency Supply Workers (40%) and Mature Entrants (36%). The professional scientist and engineers were the largest (22%) part of inflow in to the Cogent Sector.
- **The outflow** of employment for employers reported 'other' as the main departure route for employees (55%), followed by redundancies (28%) and retirement (17%). Operations and productions were the largest outflow area (20%) .
- **Turnover of employment** (annual average) in the Cogent sector is approximately 15%. The Polymer industry has the highest turnover in employment (31%), and the Nuclear industry has the lowest (13%).

Employment Turnover by Occupation⁴



Employment by Region and Nation^{6,10}

	Employees		Employers	
	n	%	n	%
East	70,875	8%	2,522	11%
East Midlands	57,014	6%	2,148	9%
London	43,235	5%	1,643	7%
North East	40,973	5%	1,197	5%
North West	122,971	14%	2,899	12%
South East	104,260	12%	2,979	13%
South West	53,661	6%	2,012	8%
West Midlands	49,849	6%	2,327	10%
Yorkshire and The Humber	60,018	7%	2,128	9%
England	602,857	67%	19,855	83%
Scotland	232,434	26%	1,841	8%
Wales	40,683	5%	1,358	6%
Northern Ireland	21,208	2%	738	3%
Total	897,182	100%	23,791	100%

3. National Employers Skills Survey (NESS) 2009, Cogent Industry Estimate

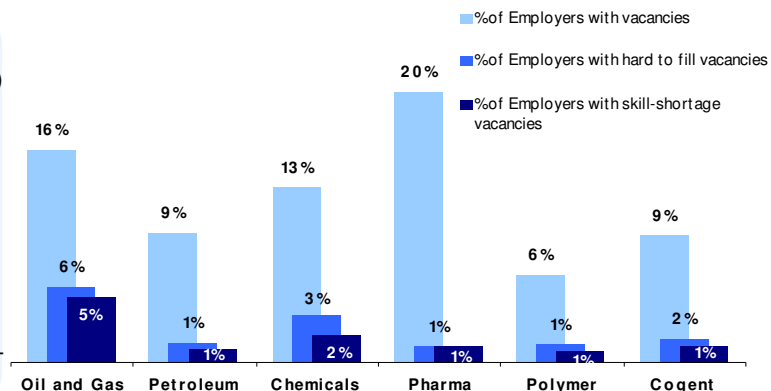
4. Skills Oracle 2010, Cogent SSC

5. The Annual Survey of Hours and Earnings (ASHE) 2009

6. Cogent Industry Estimate- (estimated from national data, ABI, LFS, NESS, BIS..etc)

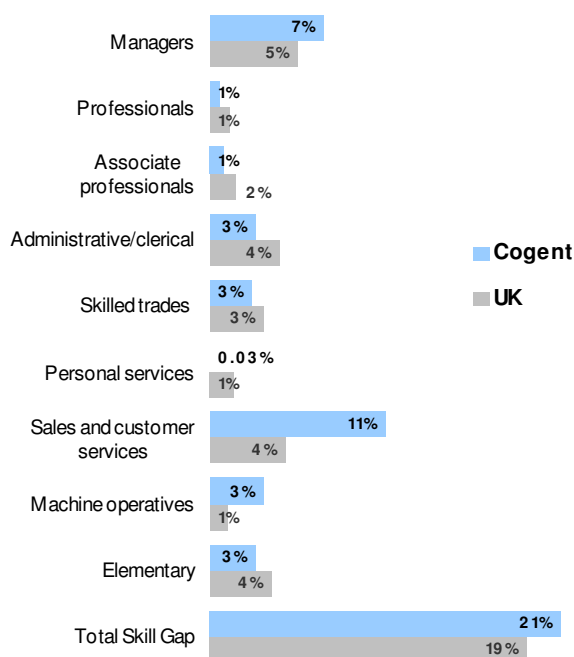
Skills Demand³

- 9% of employers reported vacancies (down from 18% in 2007)
- 1.7% of employers reported hard-to-fill vacancies (down from 6%)
- 12% of all vacancies were skill-shortage vacancies (down from 19%)
- 72% of employers expected the demand for both competence based and management level skills to increase in the next 12 months.
- Skills shortage vacancies are increasingly found in and among professional occupations.
- The proportion of employers with vacancies and hard to fill vacancies decreased by 11% and 9% respectively from 2003 to 2009.



Skills Gap / Skills Needs

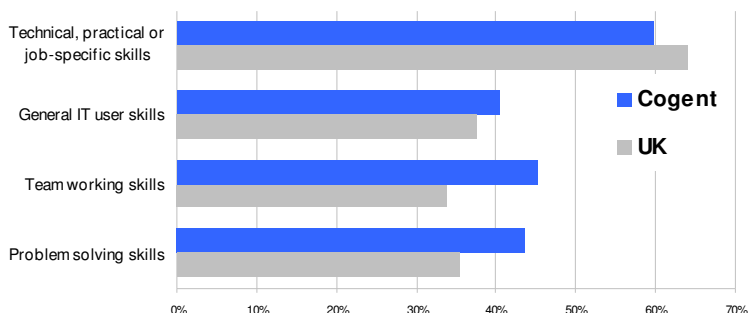
Skills Gap³



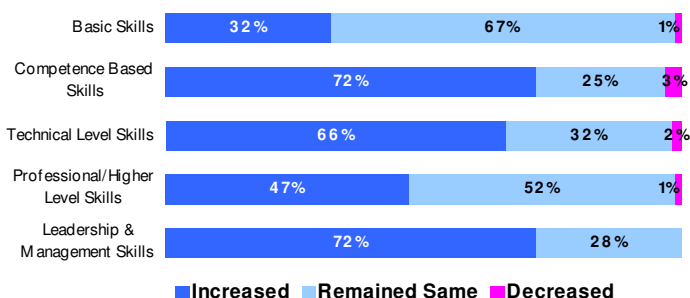
*Skills Gap: proportion of employees that are not fully proficient at their jobs, as reported by employers.

Skills Needs³

Top four skills that will need improving or updating in the next 12 months in all occupations, as reported by employers.



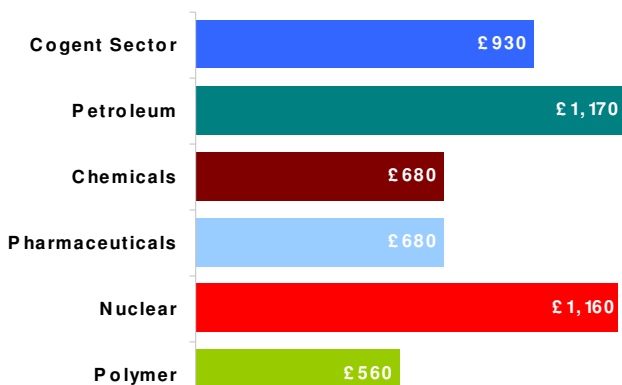
Skills Needs (1 year ahead)⁴



Skills Demand / Training

Training ³	Cogent	UK
Proportion of employers that provided training over the last 12 months	66%	68%
Number of staff trained as a proportion of employees (last 12 months)	50%	56%
Proportion of employers with training plan	53%	43%
Proportion of employers used FE colleges to provide teaching or training in past 12 months	20%	27%
Proportion of employers has used universities to provide teaching or training in past 12 months	7%	10%
Proportion of employers currently have or offer Apprenticeships	7%	9%
Proportion of employers that expect staff will need to acquire new skills or knowledge in the next 12 months	63%	70%
Internal skills gap (proportion of employees that are not fully proficient at their jobs, as reported by employers)	21%	19%

Training Budget per Employee⁴

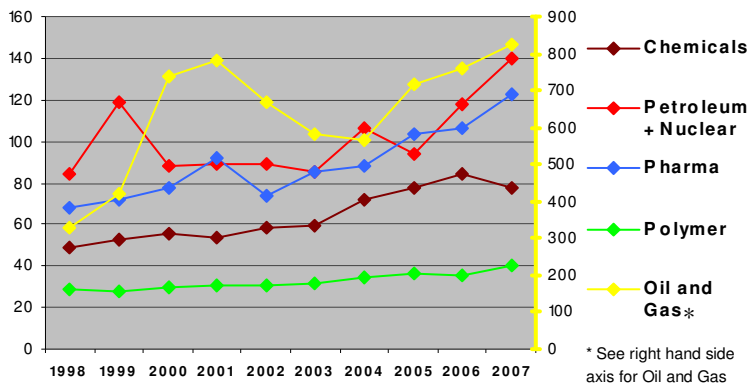


Average Training Budget per Employee

Training budgets (per annum) — In addition to this companies may incur additional cost such as travel, subsistence, internal training and mentoring, the maintenance cost of training facilities as well as maintaining productivity during training.

Productivity

Apparent Productivity of Cogent Sector¹



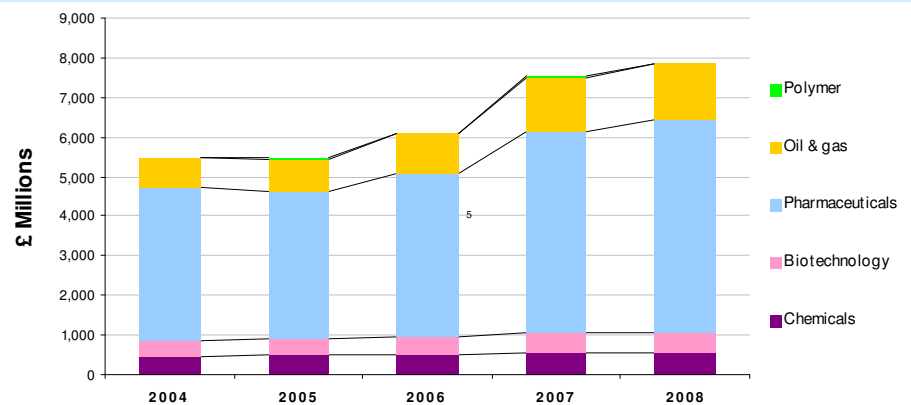
- Productivity in the industries overall increased by 86% over the last 10 years, with an average growth rate of 8% per year, partly because the added value in any one year and increasing level of R&D has benefited to the rise, between 1998 to 2007.
- Oil and Gas industry has grown with an annual average growth rate of 9%, and reach £822,000 in 2007, the highest within the Cogent footprint .
- Productivity in Petroleum and Nuclear Fuel Processing Industries are the next highest, with an average growth rate of 5%, reaching £140,000 in 2007.
- Productivity in Pharmaceuticals grew steadily at 6% per annum reaching £122,000 in 2007.

Apparent labour productivity - calculated as gross value added (GVA) per employee

R&D Growth⁷

- Industries within the Cogent footprint **invested 7.8bn (30% of UK R&D)** collectively, which equivalent to more than £21m per day.
- Pharmaceutical companies carry out more than a quarter of all industrial R&D in the UK, with a **7.6% year- on- year increase**, and spend more than 20% of their gross output on R&D.
- Oil and Gas companies increased their R&D relatively slowly in comparison to the rest of the industries - **an increase of 5% on the previous year**.

R&D Trends⁷



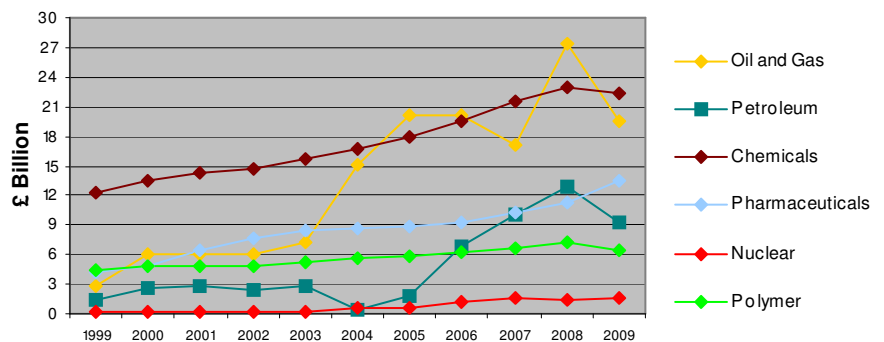
Imports and Exports

Imports and Exports 2009⁸

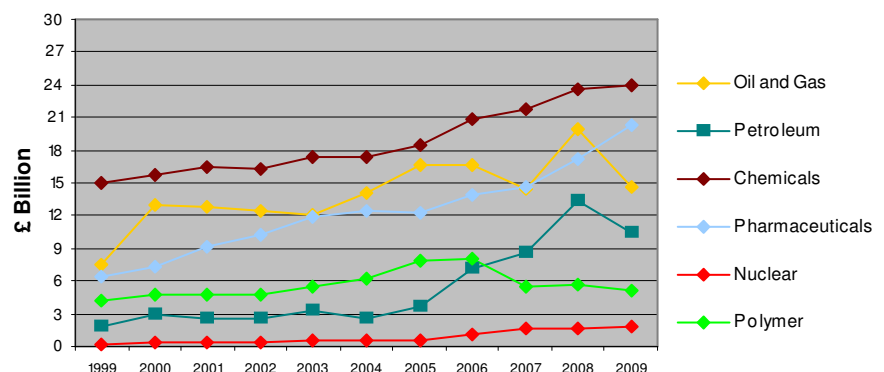
	Import	Export	Balance
	£ bn	£ bn	£ bn
Oil and Gas	19.46	14.54	-4.91
Petroleum	9.30	10.49	1.18
Chemicals	22.26	24.00	1.74
Pharmaceuticals	13.40	20.37	6.97
Nuclear	1.63	1.76	0.13
Polymer	6.51	5.16	-1.34
UK- Cogent	72.56	76.32	3.77
UK- Manufacturing	263.14	194.92	-68.22
UK Total	306.86	224.99	-81.87

- Cogent industries contributed £72.6bn to exports, resulting in a £3.8bn net contribution to the balance of trade in 2009⁶.
- The Pharmaceutical industry makes the largest contribution (6.9 bn) into the UK balance of trade in 2009.

Import Trends⁹



Export Trends⁹





Chemicals

The Chemicals industry is one of the largest and most diverse manufacturing industries in the UK. It is a vital trade supply chain to UK manufacturing from Aerospace to Pharmaceuticals, as well as retail manufacturing from Food & Drink to Personal Care.

The Chemicals industry is comprised of commodity chemicals (e.g. industrial gases), speciality/fine chemicals (e.g. pharmaceutical intermediates, pesticides, explosives) and consumer products (detergents, fragrances, oils). The UK Chemicals sector directly employs **over 140,000 people** in high value jobs and indirectly supports around three times as many.

Headlines

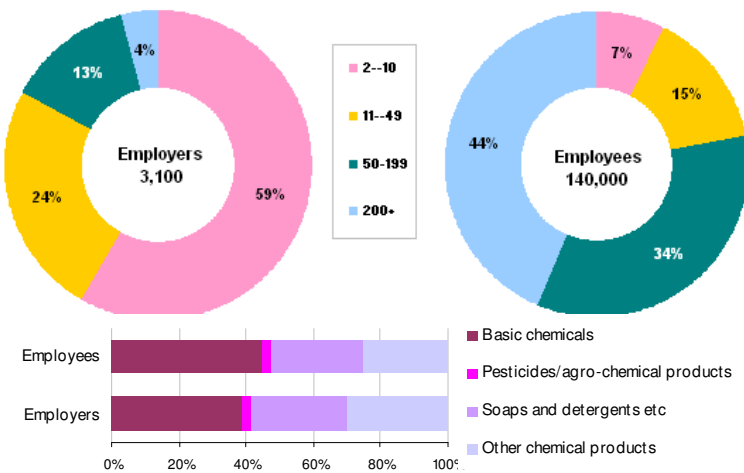
- The UK Chemical industry represents around **12% of value added in manufacturing**, equivalent to **1.5% of GDP**.
- The industry exported £24bn and contributed £1.7bn value added to the UK economy in 2009⁷, adding £30m daily to the UK balance of trade.
- The Chemicals industry in the UK invests **£628m in research and development**⁶, and around **£1bn on capital expenditure**¹ in the UK.
- Average annual growth rate for the Chemicals industry is 5.4%. The industry is forecast to reach a turnover of **£56.8bn** in 2015^{1,4}.
- **Productivity in the Chemicals Industry has increased by 69%** since 1999-2009.

Economic Picture¹

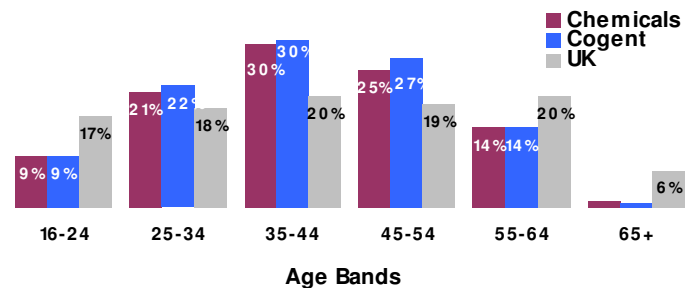
Industry	Turnover	GVA*	GVA per Employee
	£ / bn	£ / bn	£
Basic chemicals	32.29	5.59	119,000
Pesticides/agro-chemical products	0.83	0.25	85,000
Soaps and detergents etc	4.19	1.41	48,690
Other chemical products	5.66	2.08	80,308
Overall	42.97	9.34	89,029

The Workforce

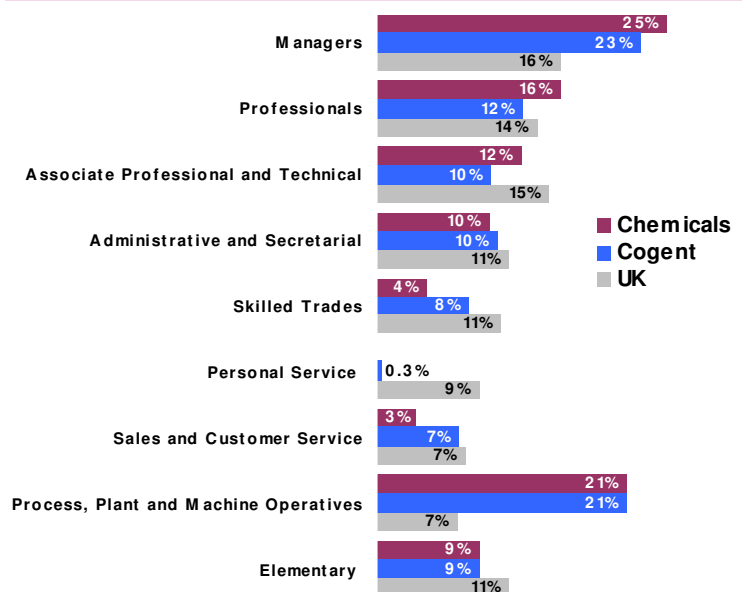
Employers and Employees by Size^{2,4}



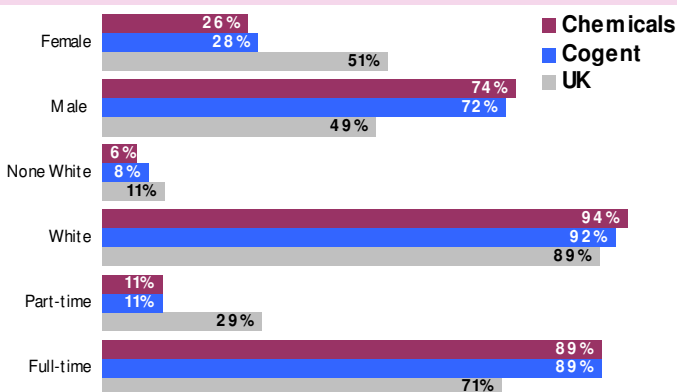
Age Profile³



Occupational Distribution³



Workforce Distribution-Gender¹, Ethnicity³ and Employment Profile³



1. Annual Business Enquiry (ABI) 2008-data released June 2010, Office of National Statistics (ONS) 2010

2. National Employers Skills Survey (NESS) 2009

3. Labour Force Survey (LFS) 2009, ESDS 2010

4. Cogent Industry Estimate- (estimated from national data, ABI, LFS, NESS, BIS..etc)

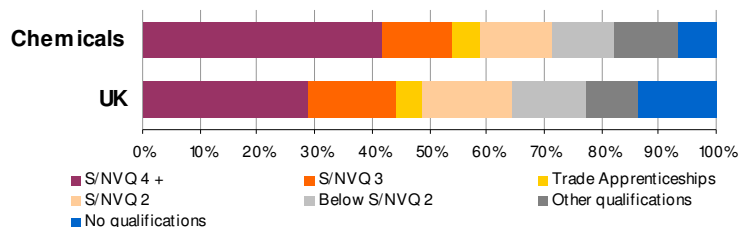
5. The Chemicals Industries Association (CIA) 2010

6. Business Enterprise R & D (BERD) 2008 – released Dec 2009, ONS 2010

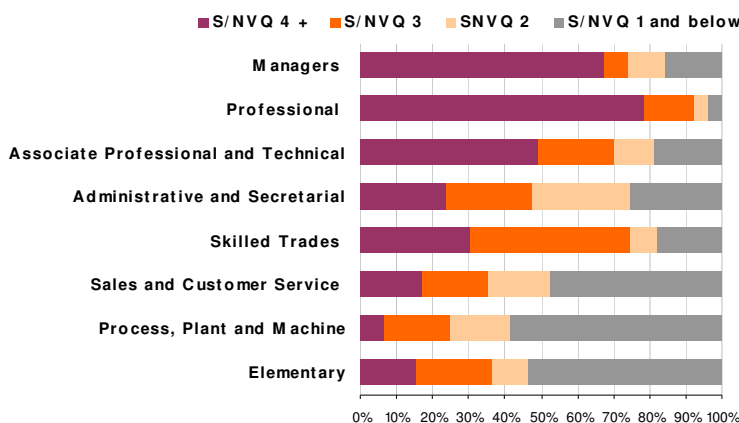
* GVA - Gross value added (GVA) represents the amount that individual businesses, industries or sectors contribute to the economy.

Skill level and Skills Needs

Skill Level³

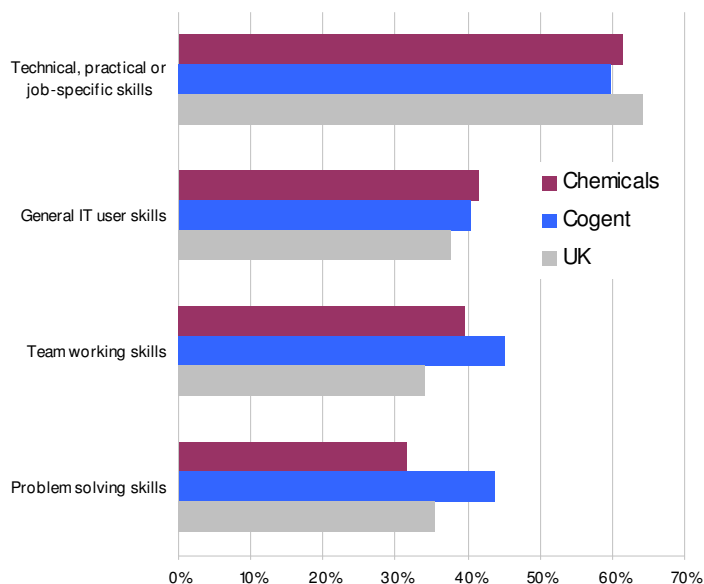


Skill Level by Occupation³



Skills Needs²

Top four skills that will need improving or updating in the next 12 months in all occupations, as reported by employers.



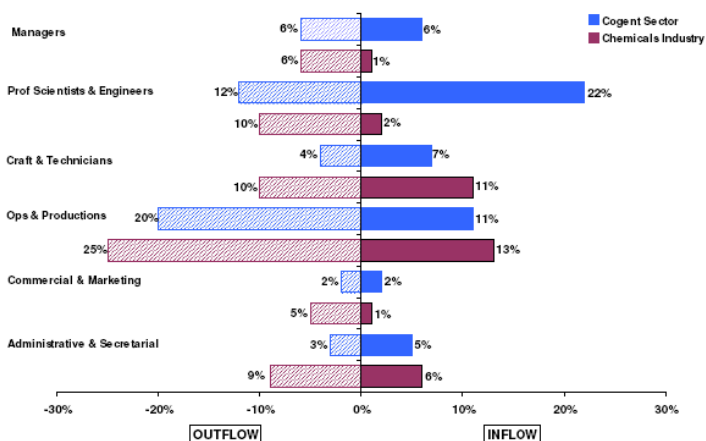
Skills Demand / Training²

- Vacancies for 'Associate Professionals' were reported by employers as the most 'hard to fill'.
- Employers expect the demand for competence based skills, leadership and management and technical level skills to increase in the next 12 months⁷.

	Chemicals	Cogent
Proportion of employers that expect staff will need to acquire new skills or knowledge in the next 12 months	61%	63%
Internal skills gap (proportion of employees that are not fully proficient at their jobs, as reported by employers)	19%	21%
Proportion of employers that provided training over the last 12 months	68%	66%
Number of staff trained as a proportion of employees (last 12 months)	53%	50%
Average annual training budgets per employee ⁸ (excludes cost of maintaining production while training the employee)	£680	£930

Employment and Workforce Distribution

Employment Turnover by Skill Level⁸



According to the Chemicals Skills Oracle, employment turnover for 2009 was 13%.

- The main recruitment routes were: 'Mature Entrants' (45%), 'Agency' (29%), 'Apprentices' (17%) and 'Graduates' (6%). Across the sector, 75% of employers reported dependence on contractors for routine operations.
- The main departure routes were: 'other' (47%), redundancies (31%) and retirements (22%).

Employment by Region and Nation¹

	Employees		Employers	
	n	%	n	%
East	6,627	7%	270	9%
East Midlands	8,538	9%	264	8%
London	1,821	2%	224	7%
North East	7,281	8%	396	12%
North West	20,577	22%	488	15%
South East	11,538	12%	396	12%
South West	4,405	5%	203	6%
West Midlands	5,812	6%	227	7%
Yorkshire and The Humber	10,214	11%	268	8%
England	76,812	83%	2,736	86%
Scotland	7,778	8%	178	6%
Wales	6,747	7%	155	5%
Northern Ireland ^{9,4}	1,691	2%	100	3%
Total*	93,028	100%	3,169	100%

* Industry estimates can exceed ABI employee and employer data due to contractor workforce and SIC limitations. Cogent estimates an additional 47,000 employees for the Chemicals workforce.

7. Trade Statistics 2009, HM Revenue and Customs (HMRC) 2010

8. Skills Oracle 2010, Cogent SSC

9. Northern Ireland Annual Business Inquiry (NIABI) 2008, ONS

Standard Industrial Classification (SIC 07 code ; 24.11; 24.12; 24.13; 24.14; 24.15; 24.16; 24.20; 24.51; 24.52; 24.61; 24.62; 24.63; 24.64; 24.65; 24.66). Office of National Statistics

Cogent website: www.cogent-ssc.com

Published Q4 2010



Pharmaceuticals and Medical Biotechnology

The UK Pharmaceuticals and Biotechnology industry is one of the most well established in the world and is a major export industry. Covering the lifecycle of a pharmaceutical from discovery through development to manufacture and treatment, the sector and its supply chain encompasses modern bioscience and biotechnology. From biologics to vaccines, and genomes to diagnostics, the sector operates at the frontiers of the sciences. It is intensely interdisciplinary, requiring specialists in science, bioscience, engineering and regulatory affairs to drive scientific and technological innovation.

Cogent estimates that pharmaceutical and associated biotechnology companies employ at least 73,000 people directly - 45,000 in established pharmaceuticals and 28,000 in associated biotechnologies. Induced employment is estimated at up to 250,000⁴.

Headlines

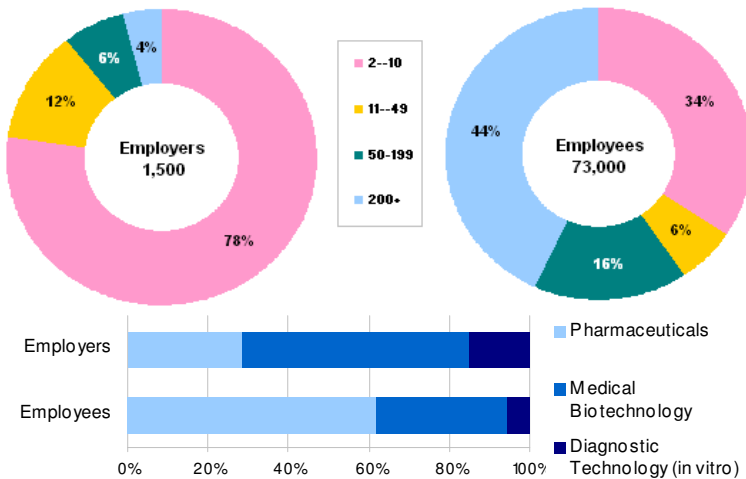
- UK Pharmaceutical industry is the **4th largest exporter** in Europe (£20.8bn). Two of the Global top 10 corporations are in the UK, with a combined **global market share 10.1%**⁵.
- The Pharmaceutical industry invests **£4.3bn in research and development**⁶ and around **£655m on capital expenditure**¹ in the UK, representing around a quarter of all industry-supported R&D investment.
- Average annual growth rate is 4.7% over 1998-08. The industry is forecast to reach a turnover of £22bn in 2015⁴.
- The UK Biotechnology sector is the second largest globally with turnover of at least £5.2bn and a strong skills emphasis on R&D. There are approximately 800 biotechnology enterprises in the UK employing 28,000 people⁴.
- Every year around 100 new biotechnology companies start up in the UK. 99% of these have fewer than 20 employees⁸. Most of this employment is in biotechnology professions with support services outsourced.

Economic Picture^{1,4}

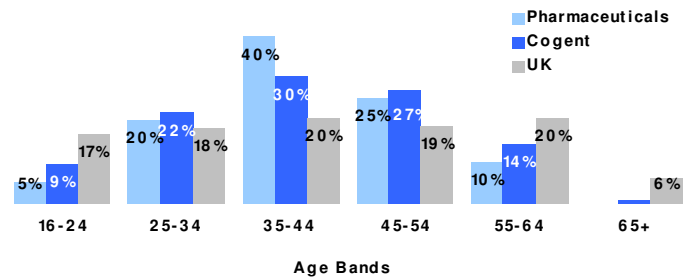
Industry	Turnover	GVA*	GVA per Employee
	£ / bn	£ / bn	£
Medical Biotechnology ⁴	5.25	*	*
Pharmaceuticals ¹	15.18	8.64	192,067

The Workforce

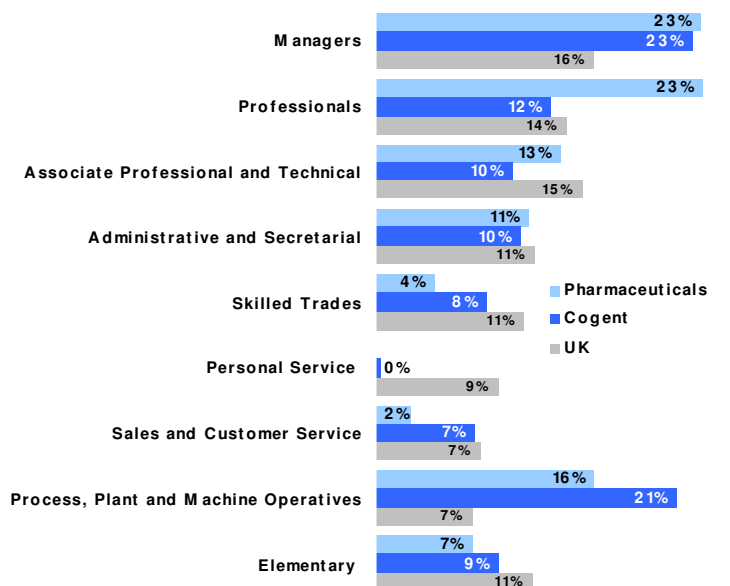
Employers and Employees by Size (all sectors)^{2,4}



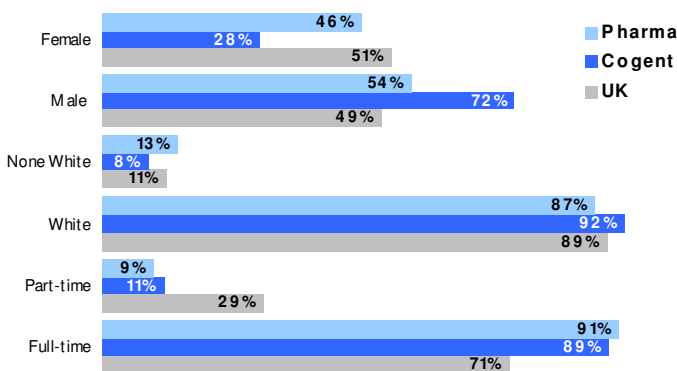
Age Profile³



Occupational Distribution³



Workforce Distribution- Gender¹, Ethnicity³ and Employment Profile³



1. Annual Business Enquiry (ABI) 2008-data released June 2010, Office of National Statistics (ONS) 2010

2. National Employers Skills Survey (NESS) 2009

3. Labour Force Survey (LFS) 2009, ESDS 2010

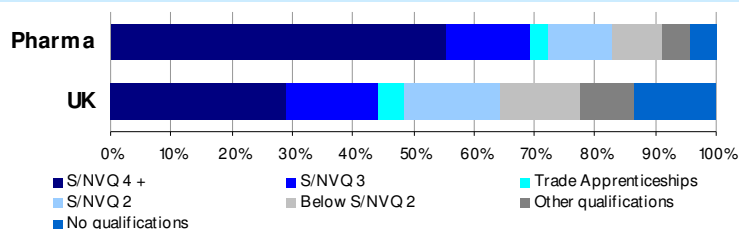
4. Cogent Industry Estimate- (estimated from national data, ABI, LFS, NESS, BIS..etc)

5. The Association of the British Pharmaceutical Industry (ABPI) 2010

* GVA - Gross value added (GVA) represents the amount that individual businesses, industries or sectors contribute to the economy.

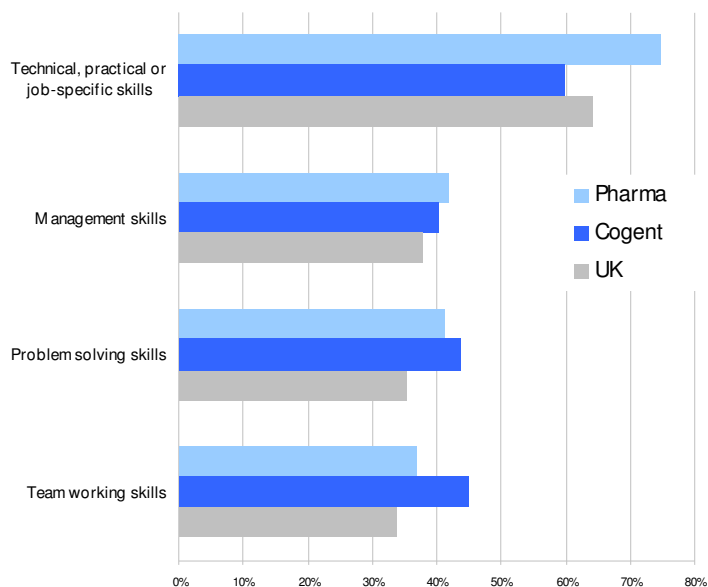
Skill level and Skills Needs

Skill Level³

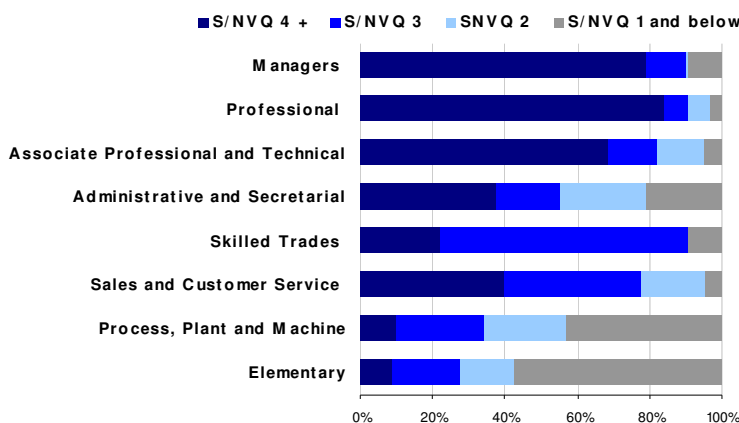


Skills Needs²

Top four skills that will need improving or updating in the next 12 months in all occupations, as reported by employers.



Skill Level by Occupation (Pharmaceuticals only)³



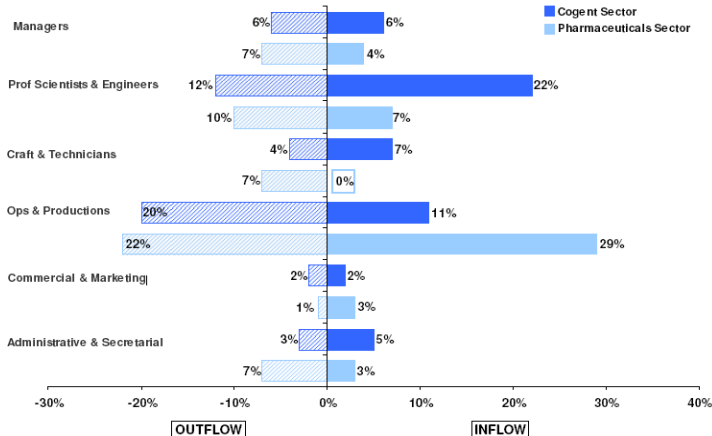
Skills Demand / Training^{2,7}

- Vacancies for 'Associate Professionals' were reported by employers as most 'hard to fill'.
- Pharmaceuticals employers expected that the demand for both professional/higher level (86%) and technical level (71%) skills to increase in the next 12 months⁷

	Pharma	Cogent
Proportion of employers that expect staff will need to acquire new skills or knowledge in the next 12 months	76%	63%
Internal skills gap (proportion of employees that are not fully proficient at their jobs, as reported by employers)	23%	21%
Proportion of employers that provided training over the last 12 months	78%	66%
Number of staff trained as a proportion of employees (last 12 months)	71%	50%
Average annual training budgets per employee ⁷ (excludes cost of maintaining production while training the employee)	£680	£930

Employment Turnover and Workforce Distribution

Employment Turnover by Skill Level⁷



According to the Pharmaceuticals Skills Oracle, employment turnover for 2009 was 13%.

- The main recruitment routes were: 'Mature Entrants' (75%), 'Graduates' (63%), 'Agency' (50%) and 'Other' (38%). Across the sector, 75% of employers reported dependence on contractors for routine operations.
- The main departure routes were: 'other' (74%), redundancies (21%) and retirements (5%).

Employment by Region and Nation⁴

Pharmaceuticals, Medical Biotechnology, Diagnostic Technology	Employees		Employers	
	n	%	n	%
East	12,572	17%	279	18%
East Midlands	2,188	3%	82	5%
London	4,420	6%	153	10%
North East	3,751	5%	66	4%
North West	8,561	12%	136	9%
South East	15,051	21%	286	19%
South West	5,823	8%	75	5%
West Midlands	1,991	3%	59	4%
Yorkshire and The Humber	4,436	6%	88	6%
England	58,793	80%	1,223	80%
Scotland	6,902	9%	159	10%
Wales	5,621	8%	117	8%
Northern Ireland	1,882	3%	33	2%
Total	73,197	100%	1,531	100%

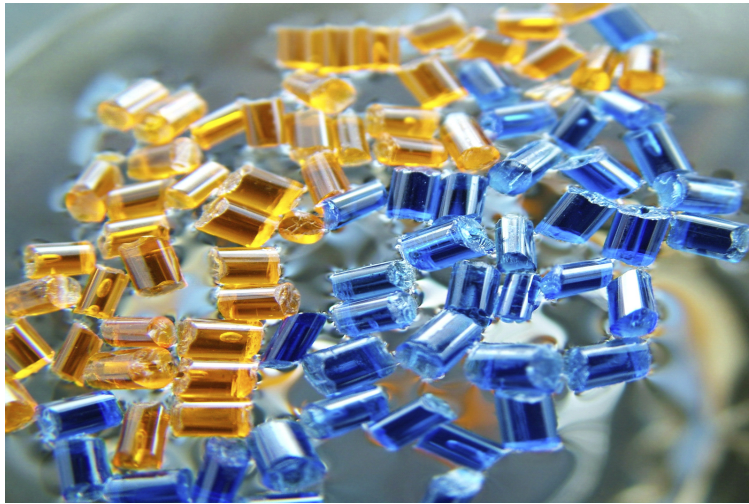
6. Business Enterprise R & D (BERD) 2008 – released Dec 2009, ONS 2010

7. Skills Oracle 2010, Cogent SSC

8. Business Demography 2008, ONS 2010

Standard Industrial Classification (SIC 07 code: 21.10; 21.20; 72.11), ONS 2010

Cogent website: www.cogent-ssc.com



Polymers

The Polymer industry comprises four discrete processing areas: Polymer Processing (Plastics & Rubber Processing) Composites, Signmaking and Packaging. The industry is important supply chain to heavy manufacturing industries such as automotive and aerospace. Polymer products are commonly used in many household products from cling-film to high tech composites. Polymers are versatile in that their shape, density, colour, translucency, conductivity, mechanical strength, corrosion resistance etc and can be finely tuned for a required application. The industry directly employs over 220,000 people. This figure rises to approximately 400,000 employees when companies who process polymers as a secondary operation to their main business, are taken into consideration. Products and component parts developed using polymers, are used in many applications. Each year the demand steadily grows.

Headlines

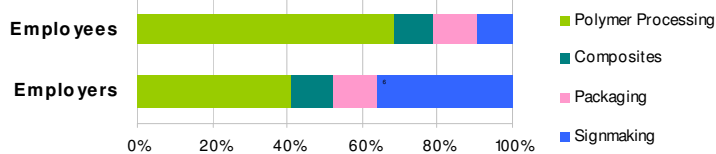
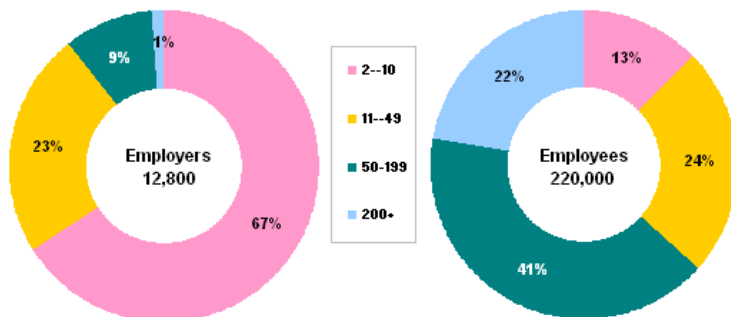
- The UK is one of **the top 5 Plastics Processing countries in the EU** with some 4.8m tonnes of materials processed in the UK.
- **Sales account for approximately £17.5bn** (approximately 2.1% of UK GDP).
- The **packaging sector accounts for 36% of plastics consumption** in the UK⁵.
- The industry invests **£76m in research and development⁶** and around **£482m on capital expenditure⁷** in the UK.
- Productivity in the Polymers Industry has increased by 44% over the last 10 years. Average annual growth rate for the industry is 5.4%. The industry is forecast to reach a **turnover of £54bn** in 2015.

Economic Picture¹

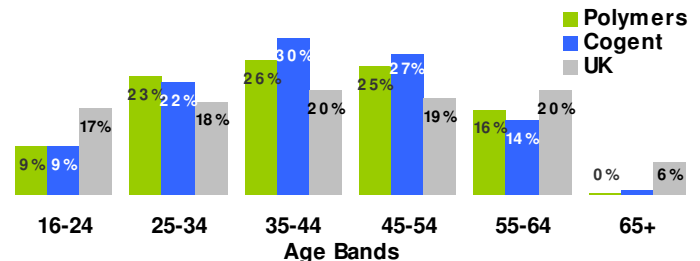
Industry	Turnover	GVA*	GVA per Employee
	£ / bn	£ / bn	£
Polymer Processing	19.88	7.47	41,282
Packaging	2.88	0.64	24,731
Overall	22.76	8.11	36,115

The Workforce

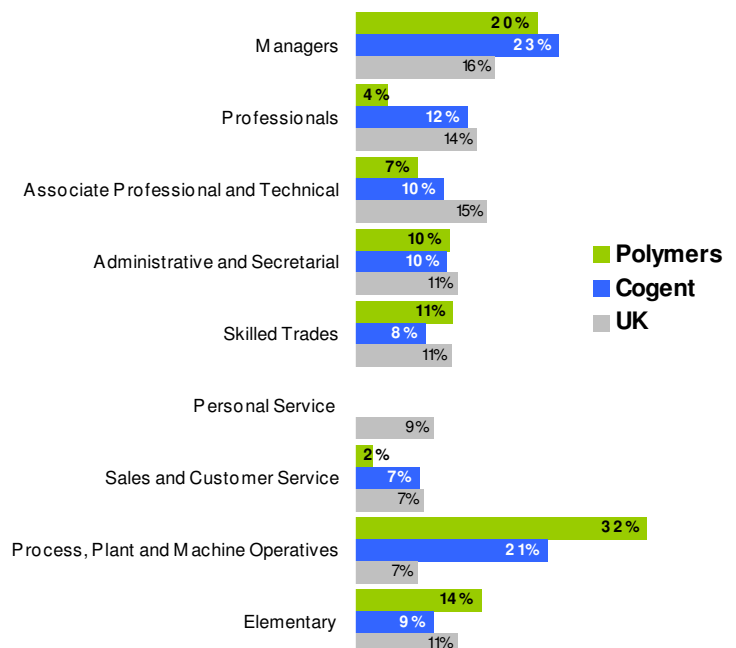
Employers and Employees by Size^{1,2,4}



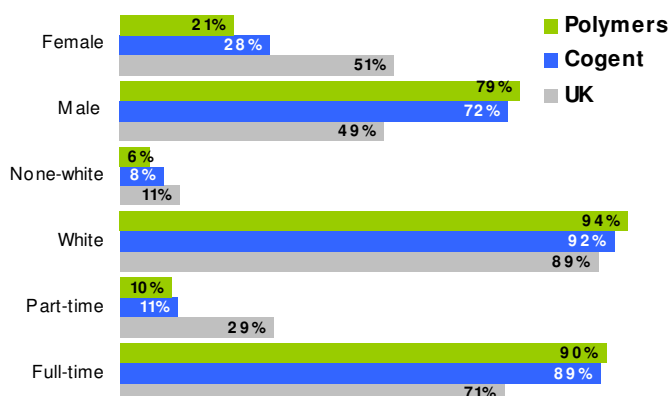
Age Profile³



Occupational Distribution³



Workforce Distribution- Gender, Ethnicity and Employment Profile³



1. Annual Business Enquiry (ABI) 2008-data released June 2010, Office of National Statistics (ONS) 2010

2. National Employers Skills Survey (NESS) 2009

3. Labour Force Survey (LFS) 2009, ESDS 2010

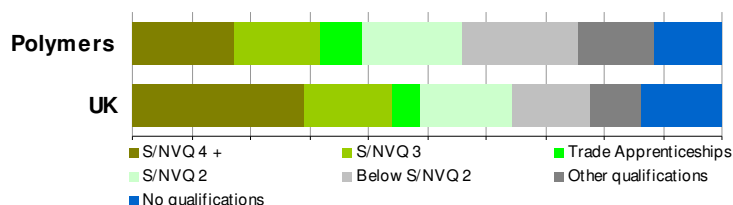
4. Cogent Industry Estimate- (estimated from national data, ABI, LFS, NESS, BIS..etc)

5. British Plastics Federation 2010, www.bpf.co.uk

* GVA - Gross value added (GVA) represents the amount that individual businesses, industries or sectors contribute to the economy.

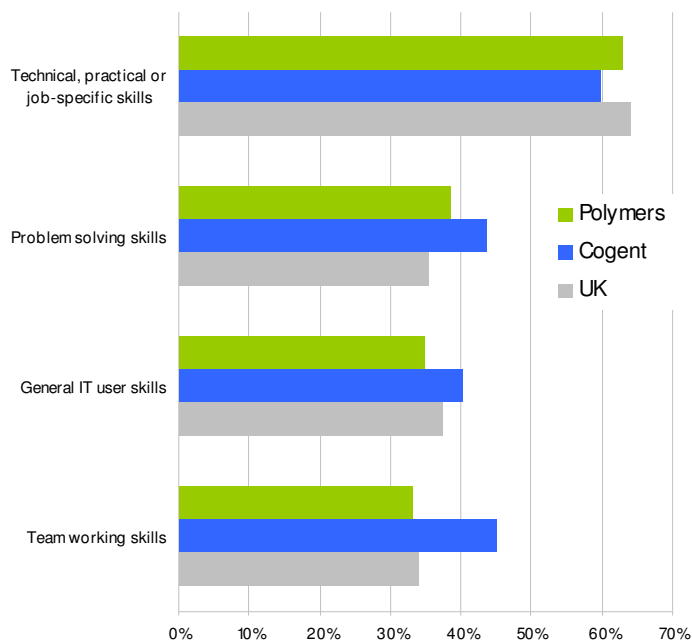
Skill level and Skills Needs

Skill Level³

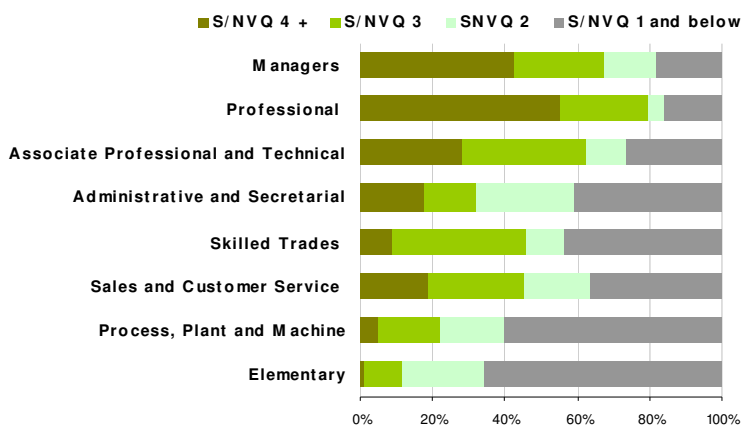


Skills Needs²

Top four skills that will need improving or updating in the next 12 months in all occupations, as reported by employers.



Skill Level by Occupation³



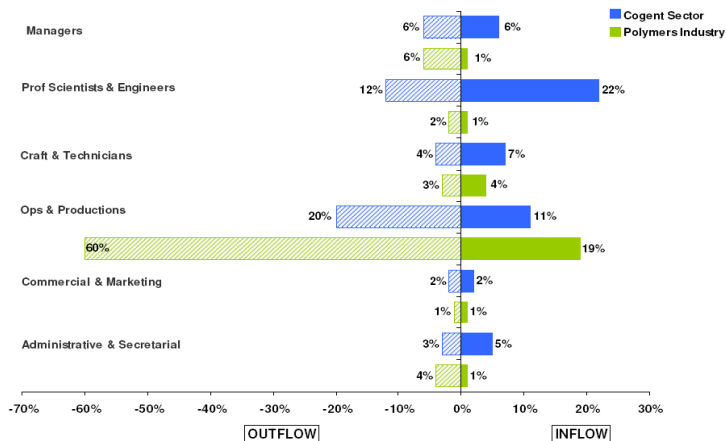
Skills Demand / Training²

- Vacancies for 'Associate Professionals' (33%), 'Machine Operatives' (30%) and 'Skilled Trades' (10%) were reported by employers as most 'hard to fill'.
- Employers (60%) expect the demand for both leadership and management and professional/higher level skills to increase in the next 12 months⁷.

	Polymers	Cogent
Proportion of employers that expect staff will need to acquire new skills or knowledge in the next 12 months	54%	63%
Internal skills gap (proportion of employees that are not fully proficient at their jobs, as reported by employers)	19%	21%
Proportion of employers that provided training over the last 12 months	57%	66%
Number of staff trained as a proportion of employees (last 12 months)	39%	50%
Average annual training budgets per employee ⁷ (excludes cost of maintaining production while training the employee)	£560	£930

Employment and Workforce Distribution

Employment Turnover by Skill Level⁷



According to the Polymers Skills Oracle, employment turnover for 2009 was 33%.

- The main recruitment routes were: 'Mature Entrants' (65%) with skill level 1 and 2. Polymer industries are less dependent on those individuals with higher level of skills and qualifications
- The main departure routes were: 'redundancies (61%) other (33%) and retirements (6%)'.

Employment by Region and Nation¹

	Employees		Employers	
	n	%	n	%
East	18,892	10%	968	11%
East Midlands	23,233	13%	921	10%
London	6,842	4%	534	6%
North East	9,499	5%	351	4%
North West	28,047	15%	1,121	13%
South East	18,301	10%	1,081	12%
South West	14,140	8%	770	9%
West Midlands	21,116	11%	1,043	12%
Yorkshire and The Humber	19,368	10%	877	10%
England	159,438	86%	7,666	86%
Scotland	12,832	7%	429	5%
Wales	12,084	7%	493	6%
Northern Ireland ⁴	1,000	1%	275	3%
Total	185,354	100%	8,863	100%

* Industry estimates can exceed ABI employee and employer data due to contractor workforce and SIC limitations. Cogent estimates an additional 4,000 employers and 35,000 employees for the Composites and Signmaking workforce.

6. Business Enterprise R & D (BERD) 2008 – released Dec 2009, ONS 2010

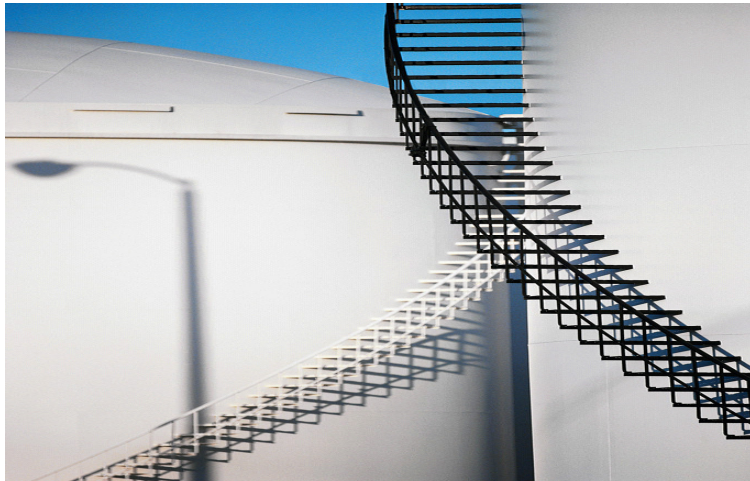
7. Skills Oracle 2010, Cogent SSC

8. Northern Ireland Annual Business Inquiry (NIABI) 2008, ONS

Standard Industrial Classification (SIC 07 code: 21.19; 22.21; 22.22; 22.23; 22.29; 82.92), Office of National Statistics (ONS) 2010

Cogent website: www.cogent-ssc.com

Published Q4 2010



Petroleum

The UK Petroleum industry (also referred to as the downstream sector) consists of refining and blending, storage, distribution and retail sale of petroleum products. The industry is made up of over 200 companies (8,600 including retail forecourts). The main product of the downstream sector is transport fuel (aviation kerosene, diesel and unleaded petrol) which can amount to 60% of refinery output. There are eight major crude oil refineries operating in the UK, which supply the bulk (little under 90%) of national demand for petroleum products. Companies range from large multinationals, two supermarket chains and independent retailers.

Headlines

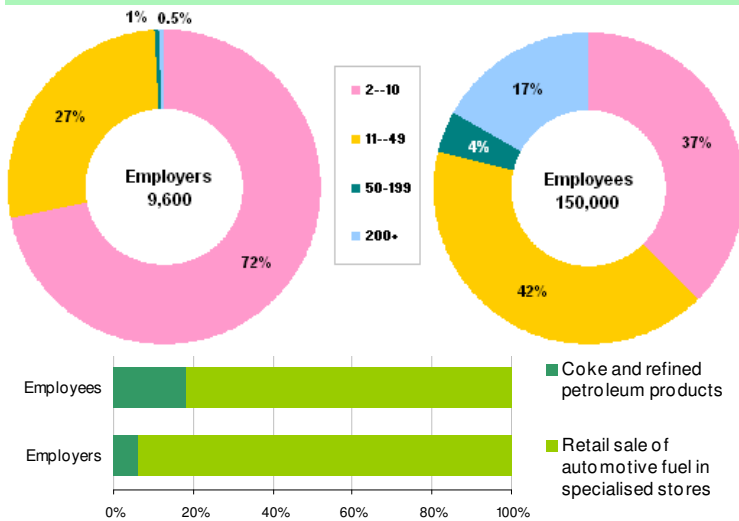
- The UK has the **4th largest total refining capacity in the EU** and some UK refineries are among the largest in Europe.
- The Petroleum industry invests around **£1bn on capital expenditure¹** and **£219m in research and development²** in the UK.
- Productivity in the industry has increased by 69%** over the last 10 years. Average annual growth rate for the Petroleum industry is 5.1%. The industry is forecast to reach a turnover of £56.8bn in 2015.
- The industry contributed **£1.2bn net contribution to the balance of trade** in 2009⁶ (down by 40% from 2000). Due to the growing demand for diesel and jet fuel (50% up from 1990), and the falling demand for petrol (30% down from 1990), has resulted in the UK becoming increasingly reliant on large-scale imports of diesel and jet fuel that had a significant effect the balance of trade over the last 5 years.

Economic Picture¹

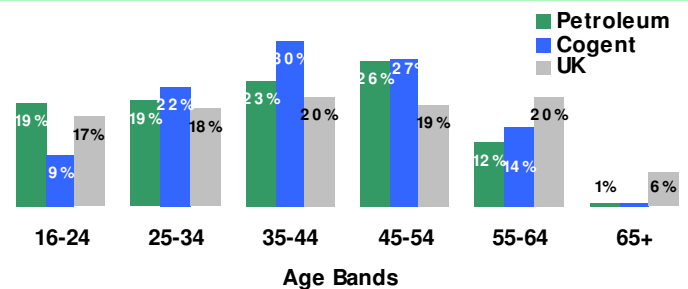
Industry	Turnover	GVA*	GVA per Employee
	£ / bn	£ / bn	£
Coke and refined petroleum products	39.68	1.54	154,600
Retail sale of automotive fuel in specialised stores	15.07	1.54	32,870
Overall	54.76	4.60	69,758

The Workforce

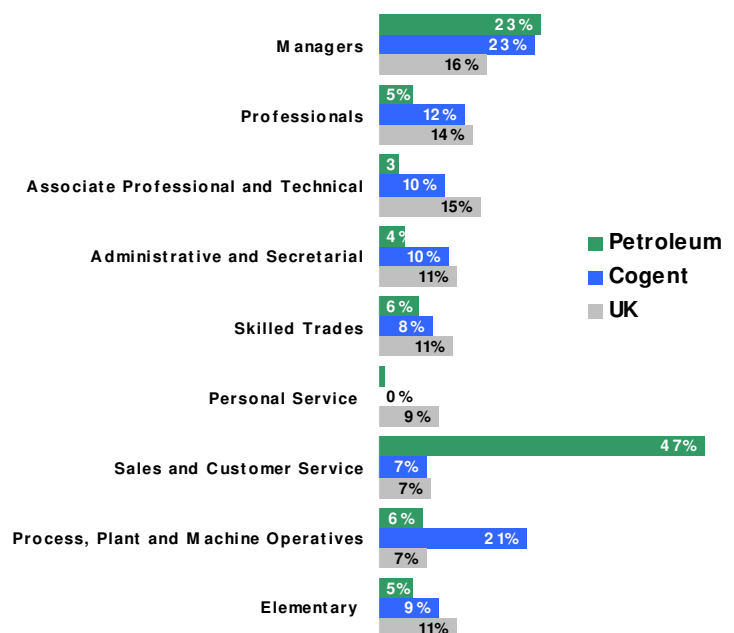
Employers and Employees by Size^{2,4}



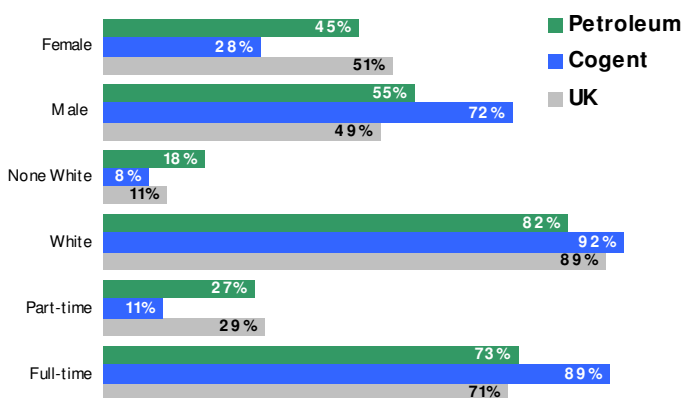
Age Profile³



Occupational Distribution³



Workforce Distribution— Gender¹, Ethnicity³ and Employment Profile³

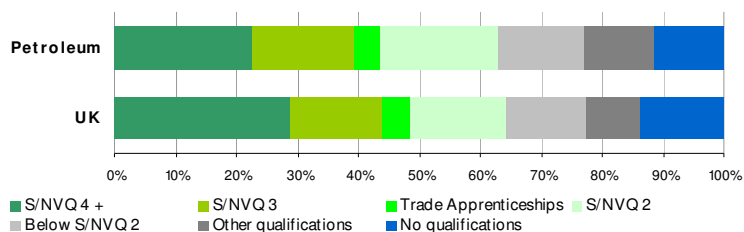


1. Annual Business Enquiry (ABI) 2008, Office of National Statistics (ONS) 2010
 2. National Employers Skills Survey (NESS) 2009, Cogent Industry Estimate
 3. Labour Force Survey (LFS) 2009, ESDS 2010
 4. Cogent Industry Estimate

5. UK Petroleum Industry Association (UKPIA) Statistical Review 2010
 * GVA - Gross value added (GVA) represents the amount that individual businesses, industries or sectors contribute to the economy.

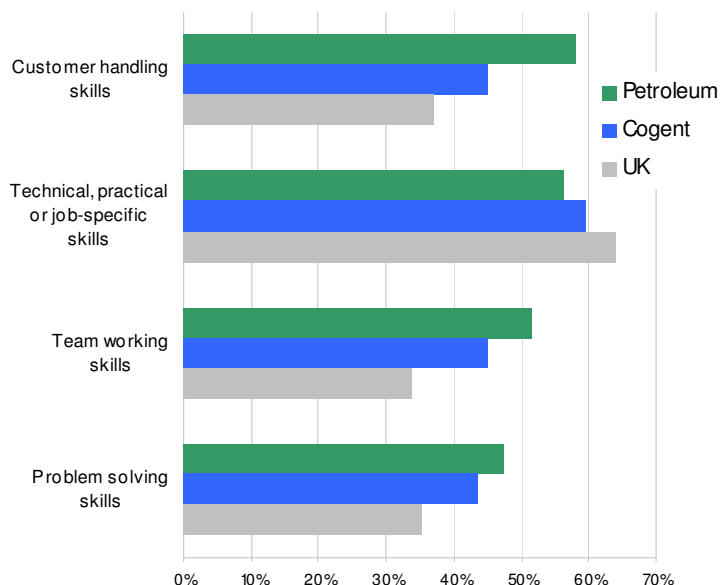
Skill level and Skills Needs

Skill Level³

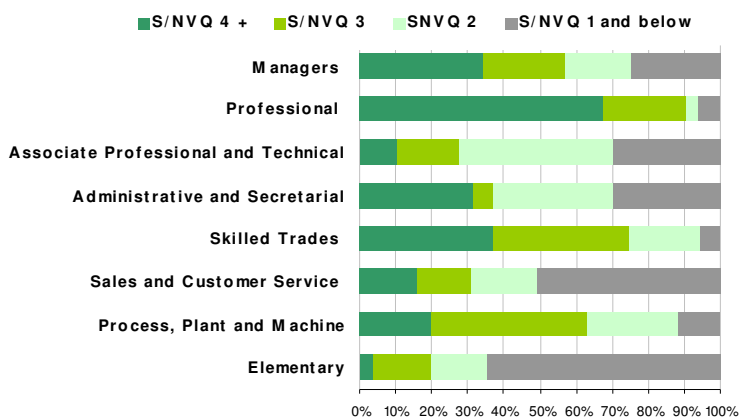


Skills Needs²

Top four skills that will need improving or updating in the next 12 months in all occupations, as reported by employers.



Skill Level by Occupation³



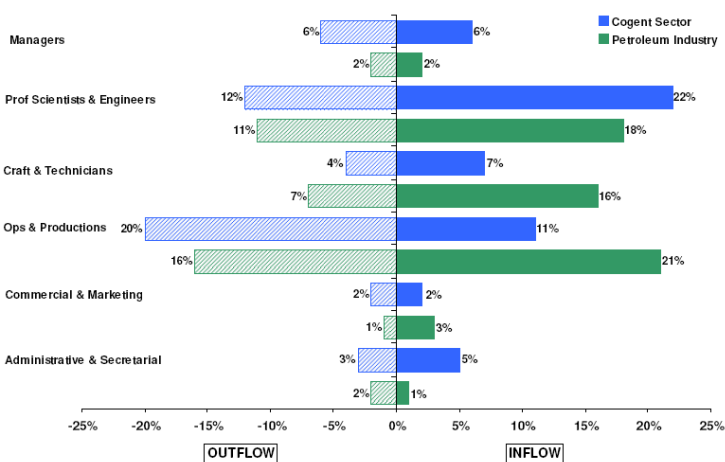
Skills Demand and Training²

- Vacancies for 'Sales and customer services' were reported by employers as the most 'hard to fill'.
- Employers expect the demand for competence based skills, leadership and management and technical level skills to increase in the next 12 months⁷.

	Petroleum	Cogent
Proportion of employers that expect staff will need to acquire new skills or knowledge in the next 12 months	61%	63%
Internal skills gap (proportion of employees that are not fully proficient at their jobs, as reported by employers)	19%	21%
Proportion of employers that provided training over the last 12 months	68%	66%
Number of staff trained as a proportion of employees (last 12 months)	53%	50%
Average annual training budgets per employee ⁷ (excludes cost of maintaining production while training the employee)	£1,170	£930

Employment and Workforce Distribution

Employment Turnover by Skill Level⁷



According to the Petroleum Skills Oracle, employment turnover for 2009 was 15%.

- The main recruitment routes were: 'Agency' (60%), 'Mature Entrants' (27%).
- The main departure routes were: 'other' (54%), the retirements (43%) and redundancies (3%).

Employment by Region and Nation¹

	Employees		Employers	
	n	%	n	%
East	5,135	10%	513	5%
East Midlands	2,921	5%	415	4%
London	4,140	8%	408	4%
North East	2,055	4%	189	2%
North West	6,044	11%	590	6%
South East	7,884	15%	649	7%
South West	4,101	8%	533	5%
West Midlands	3,472	7%	516	5%
Yorkshire and The Humber	5,360	10%	467	5%
England	41,110	77%	4,280	44%
Scotland	4,165	8%	510	5%
Wales	3,021	6%	357	4%
Northern Ireland ⁴	5,000	9%	270	3%
Total*	53,296	100%	9,697	100%

* Industry estimates can exceed ABI employee and employer data due to contractor workforce and SIC limitations. Cogent estimates an additional 97,000 employees for the Petroleum workforce.

6. Trade Statistics 2009, HM Revenue and Customs (HMRC) 2010

7. Skills Oracle 2010, Cogent SSC

8. Business Enterprise R & D (BERD) 2008 – released Dec 2009, ONS 2010



Oil and Gas

The UK Oil and Gas extraction industry, also referred to as Upstream, covers the exploration, extraction and initial processing of North Sea oil and gas (hydrocarbons) both onshore and offshore. The centre of activity for the oil and gas extraction is off the coast of Aberdeen, Scotland. Hydrocarbons are produced in other areas of the UK such as the southern North Sea, from around offshore Humberside to Norfolk and Suffolk, and offshore Liverpool and Morecambe Bays. The industry is a major source of employment and a significant contributor to the national economy.

Headlines

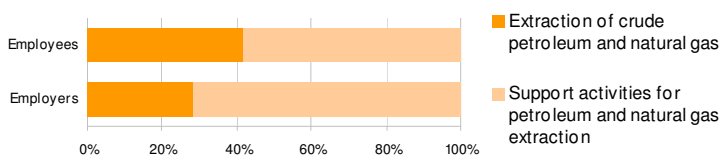
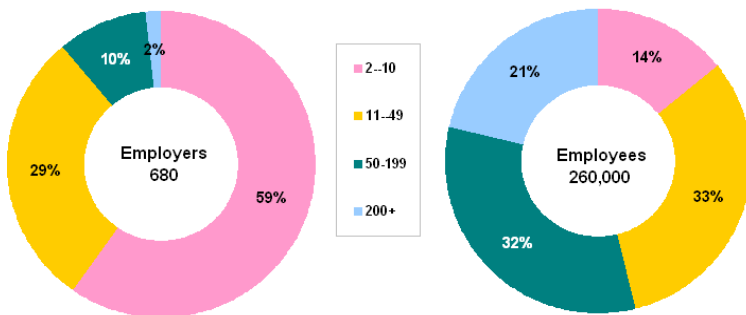
- In 2009, the UK was the **16th largest oil and gas producer** in the world (15th largest gas producer and 19th largest oil producer)⁵.
- Three quarters of the UK's current primary energy demand is met by oil and gas. In 2009, oil produced on the UK Continental Shelf (UKCS) satisfied **almost all (94%) of domestic consumption** while gas produced in the UK met about two thirds of demand.
- The Oil and Gas industry invests **£1.4bn in research and development⁸ and £5.2bn on capital expenditure¹** in the UK in 2008. The industry **paid £6.4bn in corporate taxes** in 2009-10, representing 20% of total UK corporation tax.
- **Average annual growth rate is 9.3%**. The industry is forecast to reach a turnover of £100bn in 2015⁴. Balance of trade in the Oil and gas industry show a deficit of £4.1bn in 2009⁶ – a third less than the deficit of the previous year.

Economic Picture¹

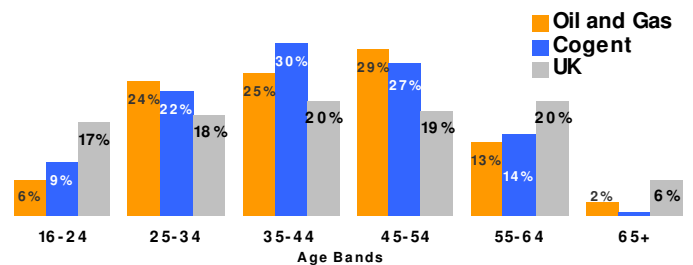
Industry	Turnover	GVA*	GVA per Employee
	£ / bn	£ / bn	£
Extraction of crude petroleum and natural gas	51.88	31.37	2,413,231
Support activities for petroleum and natural gas extraction	6.00	2.76	153,333
Overall	57.88	34.13	1,101,032

The Workforce

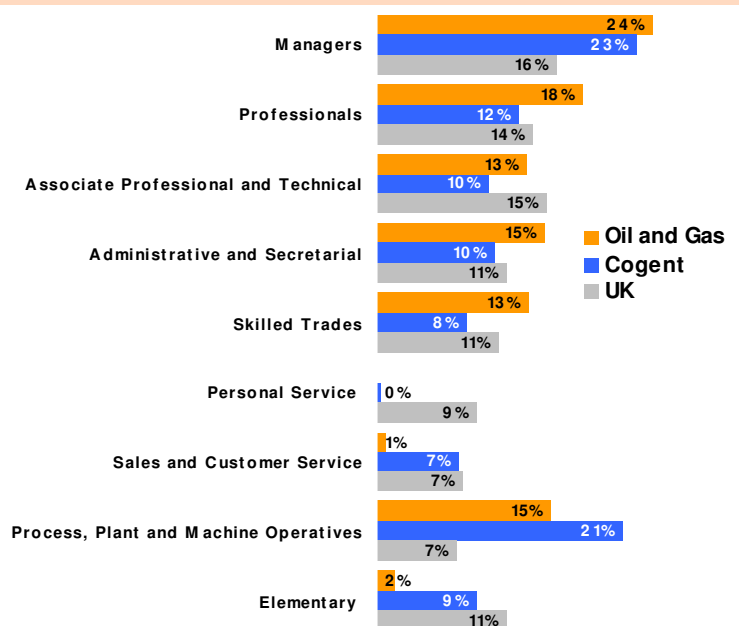
Employers and Employees by Size^{1,2,4}



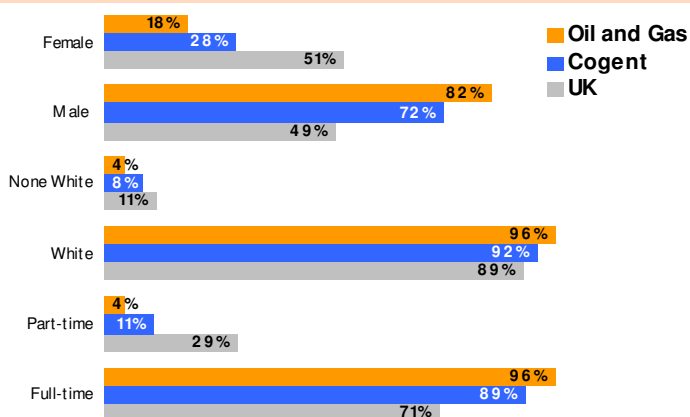
Age Profile³



Occupational Distribution³



Workforce Distribution – Gender, Ethnicity and Employment Profile³



1. Annual Business Enquiry (ABI) 2008-data released June 2010, Office of National Statistics (ONS) 2010

2. National Employers Skills Survey (NESS) 2009

3. Labour Force Survey (LFS) 2009, ESDS 2010

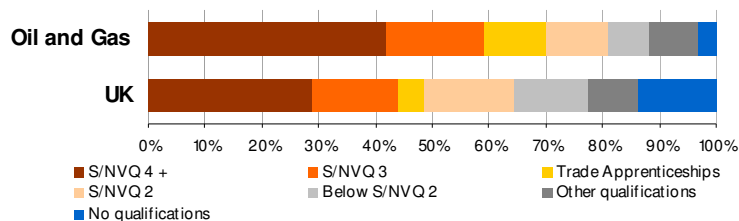
4. Cogent Industry Estimate- (estimated from national data, ABI, LFS, NESS, BIS..etc)

5. Oil and Gas UK Economic Report 2010, Oil and Gas UK, www.oilandgasuk.co.uk

* GVA - Gross value added (GVA) represents the amount that individual businesses, industries or sectors contribute to the economy.

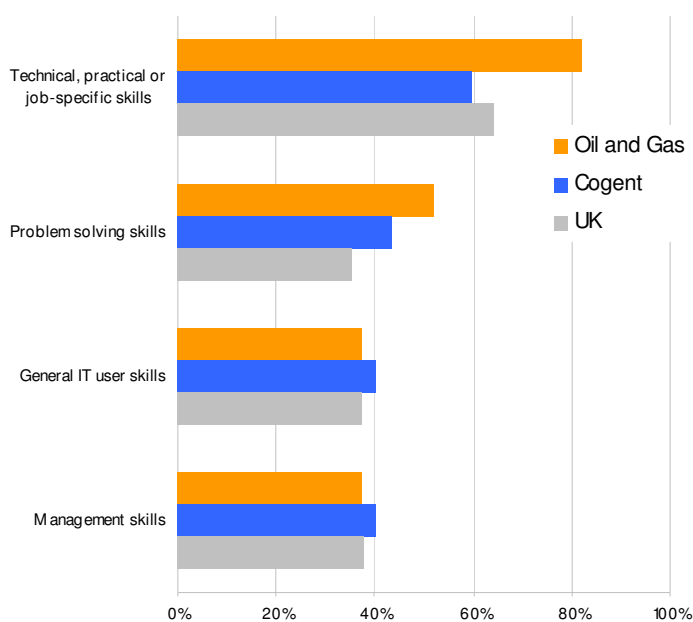
Skill level and Skills Needs

Skill Level³

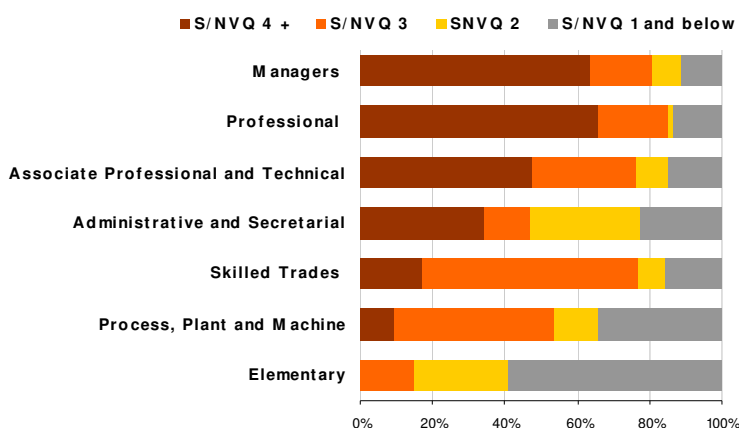


Skills Needs²

Top four skills that will need improving or updating in the next 12 months in all occupations, as reported by employers.



Skill Level by Occupation³



Skills Demand and Training²

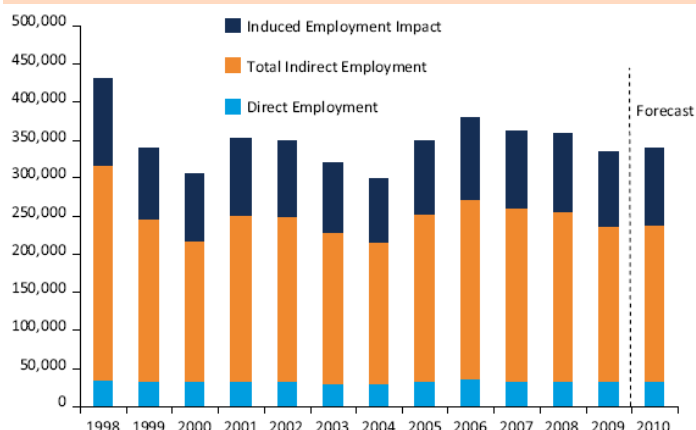
Approximately 20% of Oil and Gas employers expect that the demand for management and professional/higher level skills to increase in the next 12 months.

Also, 24% of employers expect that the demand for Skilled trade skills to increase in the next 12 months.

	Oil and Gas	Cogent
Proportion of employers that expect staff will need to acquire new skills or knowledge in the next 12 months	58%	63%
Internal skills gap (proportion of employees that are not fully proficient at their jobs, as reported by employers)	22%	21%
Proportion of employers that provided training (last 12 months)	80%	66%
Number of staff trained as a proportion of employees (last 12 months)	52%	50%
Average annual training budgets per employee ⁷ (excludes cost of maintaining production while training the employee)	-	£930

Employment and Workforce Distribution

Oil and Gas Employment Trend 1998-2010⁵



- Employment in Oil and Gas industry is directly related to the rate of investment in new production and expenditure on existing operations.
- Currently, each £billion spent by the industry provides around 13,000-18,000 indirect jobs, whether the money is operating expenditure or capital investment.
- Oil and Gas industry invested £5.2bn on capital expenditure in the UK in 2008¹. Thus, if investment were to halve from around £5 billion to £ 2.5 billion by 2010, some 50,000 jobs could be lost.

Employment by Region and Nation⁴

	Employees		Employers	
	n	%	n	%
East	10,400	4%	45	7%
East Midlands	2,303	1%	41	6%
London	15,600	6%	78	11%
North East	7,800	3%	27	4%
North West	10,400	4%	11	2%
South East	15,600	6%	56	9%
South West	6,500	3%	45	7%
West Midlands	3,900	2%	7	1%
Yorkshire and The Humber	2,206	1%	27	4%
England	74,709	29%	337	50%
Scotland	182,000	70%	338	48%
Wales	780	0.3%	4	1%
Northern Ireland	1,831	1%	7	1%
Total	260,000	100%	685	100%

* Industry estimates can exceed ABI employee and employer data due to contractor workforce and SIC limitations.

6. Trade Statistics 2009, HM Revenue and Customs (HMRC) 2010

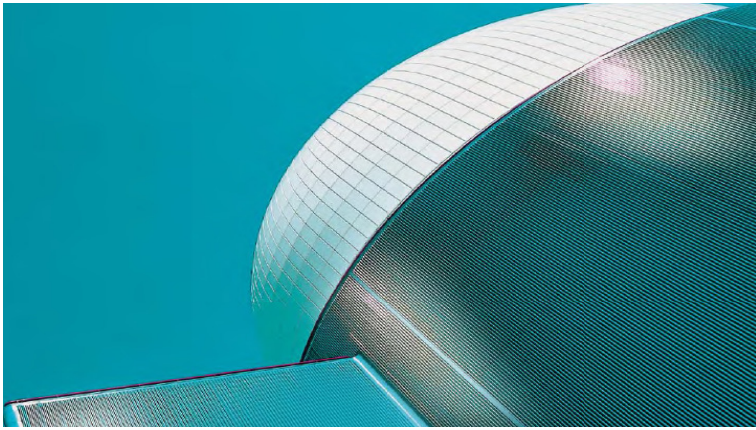
7. Skills Oracle 2010, Cogent SSC

8. R&D Scoreboard 2008, BIS 2010

Standard Industrial Classification (SIC 07 code: 6.10; 6.20; 9.10), ONS 2010

Cogent website: www.cogent-ssc.com

Published Q4 2010



Nuclear

Nuclear industry provides employment for approximately 58,000 people, of these 14,000 in Defence - nuclear and 44,000 in the civil nuclear sector.

The civil nuclear operators directly employ 24,000 people across three sectors – Electricity Generation, Decommissioning, and Fuel Processing. The remainder is employed in the direct supply chain to the nuclear industry. The industry is highly dependent on the contracted supply chain. Contractor employment is high in some sectors; as high as a 1:1 induced employment in the Electricity Generation sector. Regions of concentrated employment include the North West (53% of the industry), the South West (15%), Scotland (12%) and the South East (9%).

Without new build, the workforce is set to decline by 58% by 2025; with new build at Replacement Generating Capacity, the model projects new demand for 4,600 jobs in the Electricity Generating sector by 2025 with a sizeable impact on the supply chain as well.

Critical Skills (New Build Supply Chain)⁶

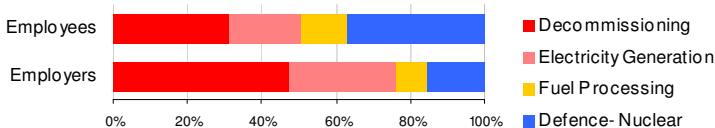
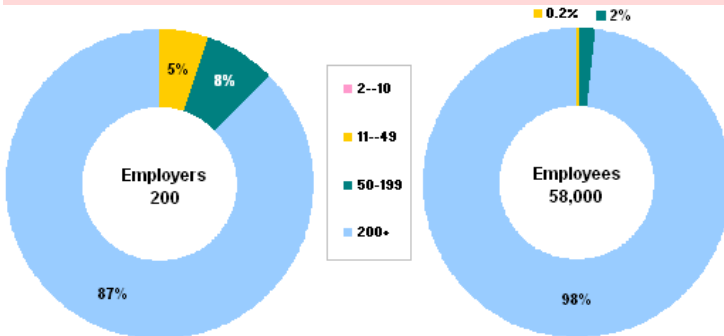
Design & Planning	Project and Programme Managers
	Safety Case Authors
	Design Engineers (various)
	Geotechnical Engineers
	Regulators
Equipment Manufacture	Manufacturing Engineers
	Control & Instrumentation
	Welders (high integrity, materials)
Engineering Construction	Planners/Estimators
General Nuclear Culture and Experience of the Workforce	The Project Management skills required to deliver effective projects
	Adequate and relevant Capability/ Experience of the sector

Headlines^{5,6}

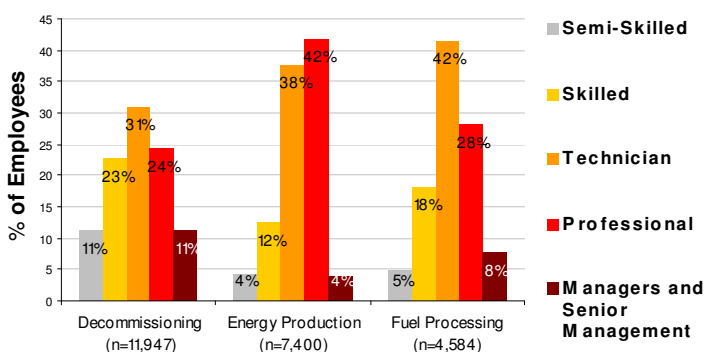
- Nuclear power at its peak provided round 20% of the UK's electricity although many of the nuclear power stations are coming to the end of life and the contribution today is around 15%.
- The UK is the **10th** highest nuclear generating country globally
- The UK Nuclear industry generated **62.9bn kWh in 2009**.
- There are currently **19 reactors in operation** producing approximately **11GWe**, however by 2023, Sizewell B may be in sole operation (producing 1.88GWe) unless new build nuclear is commissioned in the meantime.
- The Royal Navy has **12 nuclear powered submarines** in service
- The North West of England has the largest employment, with 53% of the workforce overall, comprising 14% of Electricity Generation, 62% of Decommissioning and 73% of Fuel Processing.

The Workforce

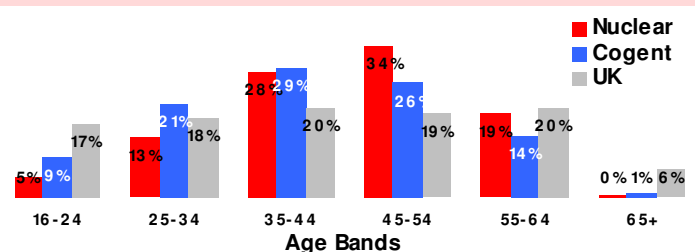
Employers and Employees by Size^{4,5}



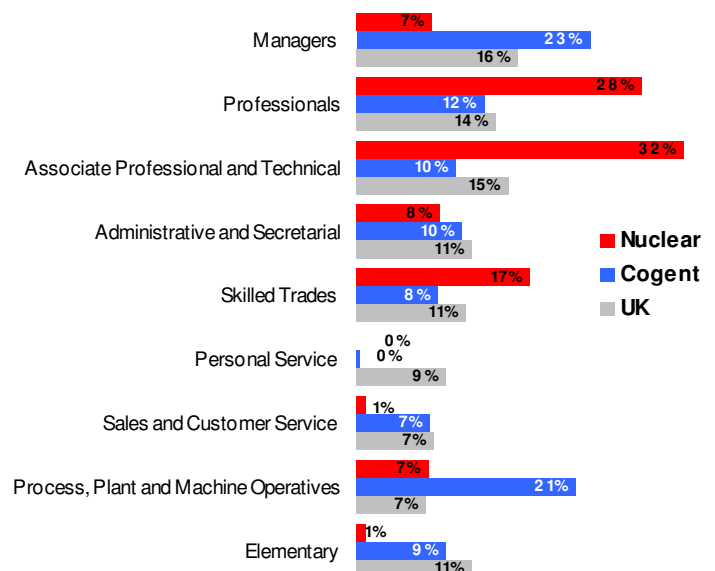
Skill Level of Civil Nuclear Workforce⁵ (excl. Supply chain)



Age Profile^{3,5}



Occupational Distribution^{3,5}

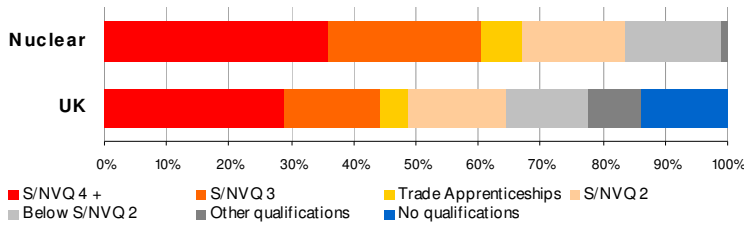


1. Annual Business Enquiry (ABI) 2008, Office of National Statistics (ONS) 2010
2. National Employers Skills Survey (NESS) 2009,

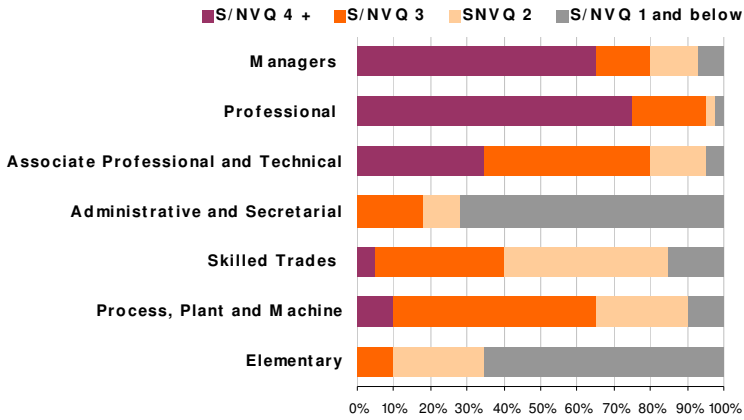
3. Labour Force Survey (LFS) 2009, ESDS 2010
4. Cogent Industry Estimate

Skill level, Skills Needs and Demand

Skill Level ^{2,4}

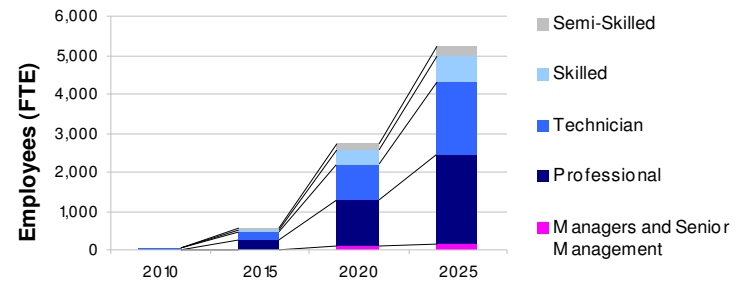


Skill Level by Occupation ⁴



Skills Needs ⁴

New-Build Operational workforce skills demand forecast 2010-2025

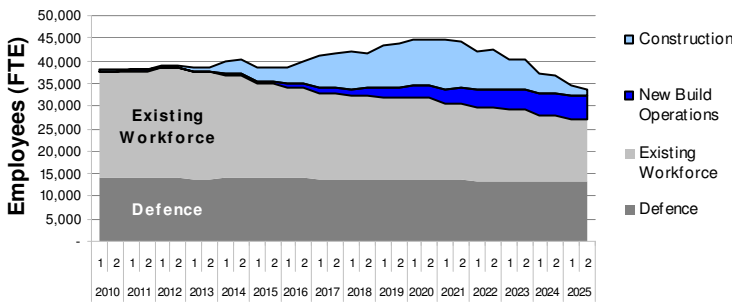


Demand for Apprentices and Graduates ^{4,6}

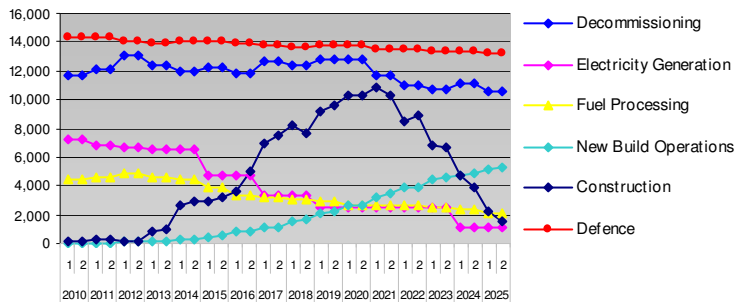
Nuclear Industry	Peak year	Peak Demand	Average per year
New Build Operation	2025	4,821	301
New Build Construction	2021	10,600	663
Manufacturing	2015	2,721	170
Existing Operations	2017	5,610	283
Integrated Demand	2022	23,752	1,484

Workforce Demand Forecast ^{4,5,6}

Integrated Demand Forecast 2010-2025 ^{4,6}

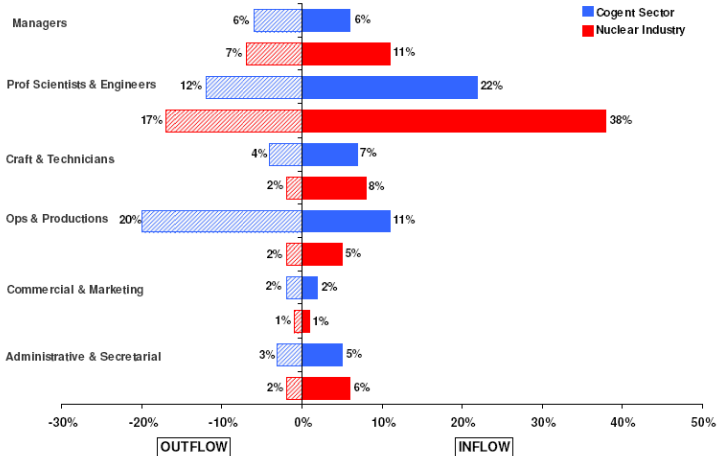


Individual Sector Demand Forecast 2010-2025 ^{4,6}



Employment Turnover and Workforce Distribution

Employment Turnover by Skill Level ⁷



According to Nuclear Skills Oracle survey, the annual employment turnover in the Nuclear industry was 13% in 2010.

- The main recruitment routes into the sector were: 'Agency Supply Workers' (41%) and 'Mature Entrants' (34%).
- The main departure routes of the sector were: 'other' (71%), retirements (23%) and redundancies (6%).

Employment by Region and Nation ^{4,5,6}

	Employees		Employers	
	n	%	n	%
East	1,373	2%	10	5%
East Midlands	4,034	7%	10	5%
London	976	2%	5	2%
North East	1,529	3%	10	5%
North West	23,103	40%	48	24%
South East	12,844	22%	24	12%
South West	6,641	11%	38	19%
West Midlands	576	1%	5	2%
Yorkshire and The Humber	264	0%	5	2%
England	51,339	89%	152	76%
Scotland	5,137	9%	33	17%
Wales	1,468	3%	10	5%
Northern Ireland	36	0%	5	2%
Total	57,979	100%	200	100%

5. Power People - The Civil Nuclear Workforce 2009, Cogent
 6. Next Generation: Skills for New Build Nuclear 2010, Cogent
 7. Skills Oracle 2010, Cogent SSC