

**Skills Priorities and Challenges  
for the Building Services Engineering Sector  
in England**

## Introduction

SummitSkills is the Sector Skills Council for the Building Services Engineering Sector. Its core SIC<sup>1</sup> codes are shown in table 1 below:

<b>Table 1: SummitSkills' SIC03 defined footprint</b>	
45.31	Installation of electrical wiring and fittings
45.33	Plumbing
52.72	Repair of electrical household goods
74.2	Architectural and engineering activities and related technical consultancy

SummitSkills also has responsibility for the following SOC codes<sup>2</sup> in its core footprint, as shown in table 2:

<b>Table 2: SOC codes directly in SummitSkills' footprint</b>	
SOC5241	Electricians, electrical fitters
SOC5249	Electrical/electronic engineers nec*
SOC5242	Telecommunications engineers
SOC5243	Lines repairers and cable jointers
SOC5244	TV, video and audio engineers
SOC5245	Computer engineers, installation and maintenance
SOC5314	Plumbing and HVAC trades
SOC5216	Pipe fitters

Currently there are a number of SOC codes that subject to amendment in the NSO review, and which SummitSkills believes contain individuals working as Building Services Engineering Sector professionals, and thus in the SummitSkills footprint; and these are shown in table 3.

<b>Table 3: SOC codes subject to change post NSO Audit, which currently Experian believe contain BSE engineers</b>	
SOC2123	Electrical engineers
SOC3112	Electrical/electronic technicians
SOC2124	Electronics engineers
SOC2122	Mechanical engineers
SOC3119	Science and engineering technicians nec*

Due to consultation between SummitSkills and the NSO, in the next survey, Building Services Engineers, will have their own SOC codes for professionals and a separate one for technicians, taken from SOC codes that have become obsolete. In addition SOC5314 plumbing and HVCA trades is to be broken up, with Air Conditioning and Refrigeration receiving their own SOC codes. SummitSkills was very pleased with the outcome of the consultation.

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<sup>1</sup> Standard Industrial Classification

<sup>2</sup> Standard Occupational Classification

In addition to the SIC codes contained in table 1, SummitSkills believes that there may be other SIC codes where SummitSkills has a declared/undeclared interest, and these are shown in table 4 below:

<b>Table 4: SIC Codes where SummitSkills may have an interest declared/undeclared</b>	
25.21	Manufacture of central heating radiators and boilers
27.11	Manufacturers of electric motors generators and transformers
27.12	Manufacture of electricity distribution and control apparatus
27.31	Manufacturing of fibre optic cables
27.32	Manufacture of other electronic and electric wires and cables
27.33	Manufacture of wiring devices
27.4	Manufacture of electric lighting equipment
27.51	Manufacture of electric domestic appliances
27.90	Manufacture of other electrical equipment
28.13/1	Manufacture of pumps
28.14	Manufacture of other taps and valves
28.25	Manufacture of non-domestic cooling and ventilation equipment

In addition, there are a number of SOC Codes, where SummitSkills may have a declared or undeclared interest, and these are contained in table 5 below:

<b>Table 5: SOC Codes Where SummitSkills may have an interest declared/undeclared</b>	
3542	Adviser, service, home (gas supplier)
8131	Assembler, component (electrical, electronic)
8132	Assembler, components (mechanical)
3541	Buyer and estimator
2129	Environmental Engineer
3551	Environmentalist

## Impact of the recession

The recession in the Construction and Building Services Engineering Sector during 2009 has been extremely significant in terms of job losses and company closure and liquidation. SummitSkills in February 2009 based on the workloads of Building Services Engineering Sector Consultants estimated that the sector would contract between 18% and 42%, which has proved to be extremely accurate.

Tables 6a-i shows the projected job losses<sup>3</sup> in the Building Services Engineering Sector in the English regions.

<b>Table 6a: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in North West</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	21,810	3,933	9,101
Plumbing	8,699	1,569	3,631
Heating and Ventilation	5,354	965	2,235
Air Conditioning and Refrigeration	2,677	493	1,119

<b>Table 6b: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in North East</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	10,190	1,838	4,252
Plumbing	3,755	677	1,567
Heating and Ventilation	2,310	416	964
Air Conditioning and Refrigeration	1,155	213	483

<b>Table 6c: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in Yorkshire and Humberside</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	16,590	2,992	6,924
Plumbing	9,329	1,682	3,892
Heating and Ventilation	5,741	1,035	2,395
Air Conditioning and Refrigeration	2,870	527	1,199

<sup>3</sup> In the full report : 'Potential impact of the recession on the building services engineering sector in 2009' data is provided separately for the devolved nations and nine English regions.

<b>Table 6d: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in East Midlands</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	14,560	2,624	6,076
Plumbing	5,995	1,081	2,501
Heating and Ventilation	3,690	667	1,540
Air Conditioning and Refrigeration	1,845	341	771

<b>Table 6e: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in West Midlands</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	18,610	3,356	7,766
Plumbing	8,747	1,576	3,649
Heating and Ventilation	5,382	971	2,246
Air Conditioning and Refrigeration	2,691	495	1,125

<b>Table 6f: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in East of England</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	25,290	4,561	10,553
Plumbing	8,991	1,622	3,751
Heating and Ventilation	5,533	998	2,309
Air Conditioning and Refrigeration	2,766	510	1,155

<b>Table 6g: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in London</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	24,510	4,420	10,228
Plumbing	10,613	1,914	4,429
Heating and Ventilation	6,531	1,178	2,726
Air Conditioning and Refrigeration	3,266	601	1,364

<b>Table 6h: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in South East</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	24,480	4,415	10,216
Plumbing	13,505	2,437	5,635
Heating and Ventilation	8,310	1,498	3,468
Air Conditioning and Refrigeration	4,155	764	1,736

<b>Table 6i: Total Indicative notional UK job losses from best case and worst case scenarios, by BSE industry in South West</b>			
	<b>Employment 2008</b>	<b>Indicative notional job losses best case scenario</b>	<b>Indicative notional job losses worst case scenario</b>
Electrical Trades and installation	13,870	2,500	5,784
Plumbing	7,800	1,407	3,255
Heating and Ventilation	4,800	867	2,002
Air Conditioning and Refrigeration	2,400	442	1,001

There is a tradition in the BSE sector, of last in- first out in any economic downturn, and this impacts adversely on apprentices. This problem is also exacerbated by a belief in the BSE sector that apprentices are expensive to a business, and therefore require to be cut first in a recession.

Tables 7a-i, shows the projected apprenticeship redundancies in the sector in 2009 for the English Regions<sup>4</sup>. Regrettably, while in the projected parameters indicated by SummitSkills in the research, anecdotal evidence being returned to SummitSkills in the regions and nations of the UK suggests that the percentage of apprentices being made redundant is larger than that for qualified/ adult operatives generally.

<b>Table 7a: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in North West</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	3,933	138	9,101	319
Plumbing	1,569	55	3,631	127
Heating and Ventilation	965	34	2,235	78
Air Conditioning and Refrigeration	493	17	1,119	39

<b>Table 7b: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in North East</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	1,838	64	4,252	149
Plumbing	677	24	1,567	55
Heating and Ventilation	416	15	964	34
Air Conditioning and Refrigeration	213	7	483	17

<sup>4</sup>Ibid.

<b>Table 7c: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in Yorkshire and Humberside</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	2,992	105	6,924	242
Plumbing	1,682	59	3,892	136
Heating and Ventilation	1,035	36	2,395	84
Air Conditioning and Refrigeration	527	18	1,199	42

<b>Table 7d: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in East Midlands</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	2,624	92	6,076	213
Plumbing	1,081	38	2,501	88
Heating and Ventilation	667	23	1,540	54
Air Conditioning and Refrigeration	341	12	771	27

<b>Table 7e: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in West Midlands</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	3,356	117	7,766	272
Plumbing	1,576	55	3,649	128
Heating and Ventilation	971	34	2,246	79
Air Conditioning and Refrigeration	495	17	1,125	39

<b>Table 7f: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in East of England</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	4,561	160	10,533	369
Plumbing	1,622	57	3,751	131
Heating and Ventilation	998	35	2,309	81
Air Conditioning and Refrigeration	510	18	1,155	40

<b>Table 7g: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in London</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	4,420	155	10,228	358
Plumbing	1,914	67	4,429	155
Heating and Ventilation	1,178	41	2,726	95
Air Conditioning and Refrigeration	601	21	1,364	48

<b>Table 7h: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in South East</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	4,415	155	10,216	358
Plumbing	2,437	85	5,635	197
Heating and Ventilation	1,498	52	3,468	121
Air Conditioning and Refrigeration	764	27	1,736	61

<b>Table 7i: Total Indicative notional UK apprentice job losses from best case and worst case scenarios, by BSE industry in South West</b>				
	<b>Indicative notional job losses best case scenario - all</b>	<b>Indicative notional job losses best case scenario - apprentices</b>	<b>Indicative notional job losses worst case scenario - all</b>	<b>Indicative notional job losses worst case scenario - apprentices</b>
Electrical Trades and installation	2,500	88	5,784	202
Plumbing	1,407	49	3,255	114
Heating and Ventilation	867	30	2,002	70
Air Conditioning and Refrigeration	442	15	1,001	35

## Employer spend on training

Prior to the recession the Building Services Engineering Sector in the SummitSkills footprint were asked about their spend per employee per year on training. Table 8 shows the spending for the English Regions.

	North West	North East	Yorks & Humber	East Mids	West Mids	East of England	London	South East	South West
Up to £200 per employee	4%	11%	4%	6%	1%	4%	1%	3%	4%
£201-£500 per employee	7%	23%	8%	25%	3%	6%	8%	27%	48%
£501- £1000 per employee	29%	14%	59%	16%	25%	6%	6%	13%	13%
£1001-£2000 per employee	3%	11%	5%	11%	24%	31%	30%	20%	11%
£2001-£5000 per employee	5%	12%	9%	11%	25%	28%	3%	5%	8%
> £5000 per employee	2%	1%	2%	2%	2%	1%	29%	2%	2%
Nothing	25%	6%	10%	16%	8%	6%	6%	26%	9%
Don't know or refused to answer	26%	23%	5%	13%	12%	18%	17%	5%	4%

Base=2000

Tables 9a-i shows the indicative average spend per employee on training in the Building Services Engineering sector in 2008 for the English regions (a non-recession year). As can be seen from footnotes five and six, there are a number of assumptions that have to be made to arrive at this figure, and therefore the figures are indicative only.

	Number of Employees	Average	Total spend (assuming maximum unless otherwise stated)
Up to £200 per employee	1,434	4%	£286,800
£201-£500 per employee	2,509	7%	£1,254,500
£501- £1000 per employee	10,394	29%	£10,394,000
£1001-£2000 per employee	1,075	3%	£2,150,000
£2001-£5000 per employee	1,792	5%	£8,960,000
> £5000 per employee <sup>5</sup>	717	2%	£3,585,717
Nothing	8,960	25%	£0
Don't know/refused to answer <sup>6</sup>	9,318	26%	£0

<sup>5</sup> Here, as it is not possible to work out exactly how much more over £5000 is being considered, the figure of £5001 is used, this therefore suggests that there may be an under calculation for training spend, and therefore the figure is indicative only. This is the same across all nine English regions.

<sup>6</sup> Here it is assumed that there is no spend on employee training, in the light of not other information. It is assumed that the interviewees did not want to admit to not investing in training and therefore refused to answer, with a similar assumption having to be made for those interviewees who claimed that they did not know. This is the same across all nine English regions.

		Total	£26,631,017
		<b>Total average spend per employee</b>	<b>£743</b>

Table 9a suggests that while some companies are investing heavily in their employees, at least 25% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 51%, which would equate to 18,278 employees in the sector not receiving any training whatsoever. Currently, the North West is the worst performing English region in the UK under this measure.

<b>Table 9b: Average spend on employee training by the sector in 2008 in North East</b>			
	Number of Employees	Average	Total spend (assuming maximum unless otherwise stated)
Up to £200 per employee	1,915	11%	£383,000
£201-£500 per employee	4,004	23%	£2,002,000
£501- £1000 per employee	2,437	14%	£2,437,000
£1001-£2000 per employee	1,915	11%	£3,830,000
£2001-£5000 per employee	2,089	12%	£10,445,000
> £5000 per employee	174	1%	£870,174
Nothing	1,045	6%	£0
Don't know/refused to answer	4,004	23%	£0
		Total	£19,967,174
		<b>Total average spend per employee</b>	<b>£1,147</b>

Table 9b suggests that while some companies are investing heavily in their employees, at least 6% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 29%, which would equate to 5,049 employees in the sector not receiving any training whatsoever.

<b>Table 9c: Average spend on employee training by the sector in 2008 in Y &amp; Humber</b>			
	Number of Employees	Average	Total spend (assuming maximum unless otherwise stated)
Up to £200 per employee	1,381	4%	£276,200
£201-£500 per employee	2,762	8%	£1,381,000
£501- £1000 per employee	20,373	59%	£20,373,000
£1001-£2000 per employee	1,727	5%	£3,454,000
£2001-£5000 per employee	3,108	9%	£15,540,000
> £5000 per employee	691	2%	£3,455,691
Nothing	3,453	10%	£0
Don't know/refused to answer	1,727	5%	£0
		Total	£44,479,891
		<b>Total average spend per employee</b>	<b>£1,288</b>

Table 9c suggests that while some companies are investing heavily in their employees, at least 10% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 15%, which would equate to 5,180 employees in the sector not receiving any training whatsoever.

<b>Table 9d: Average spend on employee training by the sector in 2008 in East Midlands</b>			
	<b>Number of Employees</b>	<b>Average</b>	<b>Total spend (assuming maximum unless otherwise stated)</b>
Up to £200 per employee	1,582	6%	£316,400
£201-£500 per employee	6,590	25%	£3,295,000
£501- £1000 per employee	4,218	16%	£4,218,000
£1001-£2000 per employee	2,900	11%	£5,800,000
£2001-£5000 per employee	2,900	11%	£14,500,000
> £5000 per employee	527	2%	£2,635,527
Nothing	4,218	16%	£0
Don't know/refused to answer	3,427	13%	£0
		<b>Total</b>	<b>£30,764,927</b>
		<b>Total average spend per employee</b>	<b>£1,167</b>

Table 9d suggests that while some companies are investing heavily in their employees, at least 16% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 29%, which would equate to 7,644 employees in the sector not receiving any training whatsoever.

<b>Table 9e: Average spend on employee training by the sector in 2008 in W. Midlands</b>			
	<b>Number of Employees</b>	<b>Average</b>	<b>Total spend (assuming maximum unless otherwise stated)</b>
Up to £200 per employee	354	1%	£70,800
£201-£500 per employee	1,063	3%	£531,500
£501- £1000 per employee	8,858	25%	£8,858,000
£1001-£2000 per employee	8,503	24%	£17,006,000
£2001-£5000 per employee	8,858	25%	£44,290,000
> £5000 per employee	709	2%	£3,545,709
Nothing	2,834	8%	£0
Don't know/refused to answer	4,252	12%	£0
		<b>Total</b>	<b>£74,302,009</b>
		<b>Total average spend per employee</b>	<b>£2,097</b>

Table 9e suggests that while some companies are investing heavily in their employees, at least 8% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 20%, which would equate to 7,086 employees in the sector not receiving any training whatsoever.

<b>Table 9f: Average spend on employee training by the sector in 2008 in E. Of England</b>			
	<b>Number of Employees</b>	<b>Average</b>	<b>Total spend (assuming maximum unless otherwise stated)</b>
Up to £200 per employee	1,703	4%	£340,600
£201-£500 per employee	2,555	6%	£1,277,500
£501- £1000 per employee	2,555	6%	£2,555,000
£1001-£2000 per employee	13,200	31%	£26,400,000
£2001-£5000 per employee	11,922	28%	£59,610,000
> £5000 per employee	426	1%	£2,130,426
Nothing	2,555	6%	£0
Don't know/refused to answer	7,664	18%	£0
		<b>Total</b>	<b>£92,313,526</b>
		<b>Total average spend per employee</b>	<b>£2,168</b>

Table 9f suggests that while some companies are investing heavily in their employees, at least 6% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 24%, which would equate to 10,219 employees in the sector not receiving any training whatsoever.

<b>Table 9g: Average spend on employee training by the sector in 2008 in London</b>			
	<b>Number of Employees</b>	<b>Average</b>	<b>Total spend (assuming maximum unless otherwise stated)</b>
Up to £200 per employee	449	1%	£89,800
£201-£500 per employee	3,594	8%	£1,797,000
£501- £1000 per employee	2,695	6%	£2,695,000
£1001-£2000 per employee	13,476	30%	£26,952,000
£2001-£5000 per employee	1,348	3%	£6,740,000
> £5000 per employee	13,027	29%	£65,148,027
Nothing	2,695	6%	£0
Don't know/refused to answer	7,636	17%	£0
		<b>Total</b>	<b>£103,421,827</b>
		<b>Total average spend per employee</b>	<b>£2,302</b>

Table 9g suggests that while some companies are investing heavily in their employees, at least 6% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 23%, which would equate to 10,332 employees in the sector not receiving any training whatsoever.

<b>Table 9h: Average spend on employee training by the sector in 2008 in South East</b>			
	<b>Number of Employees</b>	<b>Average</b>	<b>Total spend (assuming maximum unless otherwise stated)</b>
Up to £200 per employee	1,514	3%	£302,800
£201-£500 per employee	13,622	27%	£6,811,000
£501- £1000 per employee	6,559	13%	£6,559,000
£1001-£2000 per employee	10,090	20%	£20,180,000
£2001-£5000 per employee	2,523	5%	£12,615,000
> £5000 per employee	1,009	2%	£5,046,009
Nothing	13,117	26%	£0
Don't know/refused to answer	2,523	5%	£0
		<b>Total</b>	<b>£51,513,809</b>
		<b>Total average spend per employee</b>	<b>£1,021</b>

Table 9 suggests that while some companies are investing heavily in their employees, at least 26% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 31%, which would equate to 15,640 employees in the sector not receiving any training whatsoever.

<b>Table 9i: Average spend on employee training by the sector in 2008 in South West</b>			
	<b>Number of Employees</b>	<b>Average</b>	<b>Total spend (assuming maximum unless otherwise stated)</b>
Up to £200 per employee	1,155	4%	£231,000
£201-£500 per employee	13,858	48%	£6,929,000
£501- £1000 per employee	3,753	13%	£3,753,000
£1001-£2000 per employee	3,176	11%	£6,352,000
£2001-£5000 per employee	2,310	8%	£11,550,000
> £5000 per employee	577	2%	£2,885,577
Nothing	2,598	9%	£0
Don't know/refused to answer	1,155	4%	£0
		<b>Total</b>	<b>£31,700,577</b>
		<b>Total average spend per employee</b>	<b>£1,098</b>

Table 9i suggests that while some companies are investing heavily in their employees, at least 9% of employees are receiving no training in any given year, and if the refusals/ don't knows are included, then the figure could be as high as 13%, which would equate to 3,753 employees in the sector not receiving any training whatsoever.

Those employers offering no training whatsoever to their employees are special priorities for SummitSkills.

## Current and future skills priorities

SummitSkills have undertaken a number of research reports in 2008-2009, which have identified or confirmed previous research in the Sector Needs Analysis (undertaken in 2006, as part of the Sector Skills Agreement). The skills needs identified are:

- Management and Leadership training at all levels in the BSE Sector, but particularly at first line supervisor and middle management level.
- Environmental technologies and microgeneration. It is anticipated that a substantial part of the Government's renewables and environmental technologies policies at micro generation level, will be specified and installed by consultants, operatives and companies in the SummitSkills footprint. Currently, potential training needs in the event of an increase of demand are far in excess of the ability of the supply chain to meet that demand, and currently there are no formal qualifications available to facilitate demand. SummitSkills is working hard with a range of partners and stakeholders to address these issues.
- In relation to skills gaps, then there are a large number of companies who claim that their staff are fully competent.
- The recession and the decline in the value of £ sterling against particularly A8 countries means that many of the medium-large BSE companies may struggle to find appropriate numbers of workers, if migrant labour is not as freely available as it has been prior to the recession.

## Leadership and management

Table 10 below, indicates that on average across the core trade areas in the SummitSkills footprint, around 33% of individuals in management or supervisory positions hold management qualifications.

<b>Table 10: Percentage of BSE companies whose managers hold management qualifications by industry</b>					
	<b>Total</b>	<b>Air Conditioning and Refrigeration</b>	<b>Electrotechnical</b>	<b>Heating and Ventilation</b>	<b>Plumbing</b>
Yes	33%	53%	43%	11%	31%
No	66%	46%	57%	87%	67%
Don't Know	1%	1%	1%	2%	2%

Base= 2000

Although the levels of training are low, generally, the BSE sector does appear willing to train their managers and first line supervisors, as can be seen from table 11 below:

Table 11 shows the same data by English region, and interestingly suggests that the management qualifications in the sector are predominantly contained in the midlands. Although the levels of training are low, generally, the BSE sector does appear willing to train their managers and first line supervisors.

<b>Table 11: Percentage of BSE companies whose managers hold management qualifications by English region</b>									
	<b>North West</b>	<b>North East</b>	<b>Yorks &amp; Humber</b>	<b>East Midlands</b>	<b>West Midlands</b>	<b>East of England</b>	<b>London</b>	<b>South East</b>	<b>South West</b>
Yes	39%	40%	18%	66%	53%	40%	18%	16%	14%
No	61%	58%	81%	33%	46%	60%	80%	81%	85%
Don't Know	1%	2%	1%	1%	1%	0%	2%	3%	1%

Base=2000

Table 12 below shows the percentages of companies in the BSE sector for the UK who would consider giving their managers and first line supervisors.

<b>Table 12: Percentage of BSE companies who would consider giving their managers management training to achieve a management qualification by industry</b>					
	<b>Total</b>	<b>Air Conditioning and Refrigeration</b>	<b>Electrotechnical</b>	<b>Heating and Ventilation</b>	<b>Plumbing</b>
Yes	53%	97%	40%	29%	36%
No	45%	2%	58%	69%	63%
Don't Know	2%	1%	2%	2%	1%

Base=2000

Table 13 shows the same data cut by English region, and suggests that the East of England and the North East are the two regions who are least prepared to invest in management qualifications, whereas the South Eastern regions (East of England, South East and London) are the most prepared to invest in management training.

<b>Table 13: Percentage of BSE companies who would consider giving their managers management training to achieve a management qualification by English region</b>									
	North West	North East	Yorks & Humber	East Midlands	West Midlands	East of England	London	South East	South West
Yes	51%	37%	65%	30%	45%	72%	70%	37%	61%
No	43%	59%	33%	65%	51%	28%	30%	59%	38%
Don't Know	6%	4%	2%	5%	4%	0%	0%	4%	1%

Base= 2000

Currently, as can be seen from table 14 below, in the BSE sector, where operatives do hold management qualifications, these are extremely varied in type, and it is suggested suitability for the BSE sector.

<b>Table 14: Percentage of management qualifications held by managers in the BSE sector by qualification type, and by industry</b>					
	Total	Air Conditioning and Refrigeration	Electro-technical	Heating and Ventilation	Plumbing
NVQ Level 3 Management	3%	8%	3%	16%	7%
NVQ Level 4 Management	4%	0%	5%	3%	4%
NVQ Level 5 Management	12%	0%	29%	3%	5%
NVQ Level 2 in Team Leading	2%	0%	2%	3%	1%
The Art of Leadership Programme	1%	0%	1%	2%	0%
CMI Level 3 Introductory Certificate in first line Management	1%	0%	1%	0%	0%
CMI Level 3 Certificate in Management	1%	0%	1%	0%	0%
CMI Level 4 Introductory Diploma In Management	1%	0%	1%	0%	0%
CMI Level 5 Diploma in Management	0%	0%	0%	0%	1%
NVQ in Business Administration	0%	0%	1%	0%	0%
Marketing Qualification	0%	0%	0%	0%	1%
Degree Level in Business Management	19%	0%	29%	1%	5%
Chartered Management Accountancy Qualification	0%	0%	0%	0%	0%
IOSH- Health and Safety Management Certificate	1%	0%	1%	0%	4%
HNC in Management	1%	0%	1%	0%	1%
JIB Managers Skills Card	1%	0%	1%	1%	0%
Other	23%	61%	16%	22%	20%

Don't Know	39%	30%	19%	51%	57%
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Base= 2000

As can be seen from table 14 above, the other category in table 14 shows the highest percentages recorded against it. Table 15 shows how these percentages were derived, and the considerable variation of qualifications that the BSE sector considers to be management qualifications.

<b>Table 15: Breakdown of other category for BSE sector contained in table 12 above</b>	
<b>Qualification</b>	<b>Responses</b>
City and Guilds Unspecified	9
Degree Unspecified	7
HND	6
Business Management Course	4
Masters Degree	3
Diploma in Management Studies	3
BTEC HNC (not stated assume Building Studies)	3
Technical Level Qualification	3
Diploma in Management	3
CDM Management Qualification	2
Degree Level Qualification	2
Health and Safety Certificates	2
They have all the skills they need or we would not take them on	1
BA degree	1
BSC Degree	1
BIN	1
BTEC Certificate	1
BTEC and Diplomas in Management	1
Business Management Certificate	1
HND in Electrical and Technical Engineering	1
Business Management Certificate	1
Certificate in Management	1
Certified Contract Manager	1
City and Guilds in Management	1
City and Guilds Level 1 &2	1
City and Guilds in Design Management	1
City and Guilds in Building Management	1
City and Guilds	1
Institute of Industrial Managers	1
City and Guilds in Retail Management level s	1
CNS Management Certificate	1
Commercial Management Training Certificate	1
Construction Manager Skills	1
Construction Management Degree	1
Contract Management and Design Course	1
Dutch Diploma	1
Electrical Engineer Management Certificate	1
Electrical Management	1
Management Qualification in Electrical Contracting	1
HNC in Building Management	1

HVCA in Management Skills	1
LIM Level 3 in Industrial Management	1
The Institute of Management	1
KNEBS in Management Training	1
Leadership in Management Programme Certificate	1
Level 1 in Business Management	1
Management Skills Basic	1
Managerial Qualifications	1
MBA in Electrical Engineering and Management	1
Master of Business Administration	1
Mechanical Engineering Services LNC and HNC	1
MCMI (Member of the Chartered Management Institute)	1
MIET in Corporate Engineering Level	1
Modules of management courses like 'Manage and Men'	1
Most of them are Members of the Institute and have diplomas in management and finance	1
NEBBS Qualification from Management Course	1
NEDRS- the Certificate for Health and Safety	1
Organisation Executive Course	1
Qualifications from the Institute of Electrical Engineers	1
Scottish VEC Qualifications	1
Supervisor in Management Certificates	1
The managers have all got past experience from different trades and they have all used those management skills to try and enhance their position in the company. Although of course, learning about the various aspects of plumbing, is something they all needed to do	1
They have all sorts of qualifications, but I couldn't tell you what they are	1

Base= 2000

Table 16 shows the percentage and type of qualifications held by managers in the English nations, and suggests that predominantly other qualifications are most predominant. Table 16 suggests that there is no real focus or strategy in the BSE sector, in any of the regions, to management qualifications.

<b>Table 16: Percentage of management qualifications held by managers in the BSE sector, by qualification type, and by English region</b>									
	North West	North East	Yorks & Humber	East Midlands	West Midlands	East of England	London	South East	South West
NVQ Level 3 Management	6%	0%	6%	0%	2%	2%	9%	7%	0%
NVQ Level 4 Management	2%	6%	6%	1%	3%	1%	11%	12%	0%
NVQ Level 5 Management	1%	4%	6%	1%	34%	3%	4%	11%	10%
NVQ Level 2 in Team Leading	0%	0%	0%	1%	0%	0%	4%	5%	10%
The Art of Leadership Programme	0%	6%	0%	0%	1%	0%	0%	1%	5%
CMI Level 3 Introductory	0%	0%	0%	0%	2%	0%	0%	0%	0%

Certificate in first Line Management									
CMI Level 3 Certificate in Management	0%	0%	0%	0%	0%	2%	0%	0%	0%
CMI Level 4 Introductory Diploma in Management	1%	0%	0%	1%	0%	2%	0%	2%	0%
CMI Level 5 Diploma in Management	0%	0%	0%	1%	0%	0%	0%	0%	7%
NVQ in Business Administration	0%	0%	0%	1%	0%	0%	0%	0%	0%
Marketing Qualification	0%	0%	0%	0%	1%	0%	0%	0%	0%
Degree Level in Business Management	66%	13%	6%	71%	0%	1%	3%	8%	0%
Chartered Management Accountancy Qualification	0%	0%	0%	0%	0%	0%	0%	0%	0%
IOSH- Health and Safety Management Certificate	2%	0%	0%	0%	1%	1%	0%	3%	0%
HNC in Management	0%	6%	4%	0%	0%	1%	0%	1%	1%
JIB Managers Skills Card	0%	4%	0%	0%	0%	0%	0%	2%	5%
Other	14%	21%	24%	13%	37%	11%	33%	14%	32%
Don't know	13%	40%	56%	10%	23%	80%	53%	51%	42%

Base= 2000

What tables 11-16 show, is that predominantly the BSE sector does not invest in leadership and management training, and where it does, investment appears to be across a wide range of courses, with many of the courses having little relevance to the BSE industry.

To address the general issue, and improve management skills in the sector, SummitSkills has been working to develop management NOS for the sector, and working with Universities and other providers to develop appropriate management qualifications for the sector. This work remains ongoing.

## Environmental technologies

In the SummitSkills footprint, there are a range of environmental technologies that are vital to the achievement of the Governments Carbon reduction and renewable energy generation targets. Currently, engagement by the BSE sector in the installation of these technologies remains low.

Tables 17a-i shows an indicative<sup>7</sup> analysis of the potential training needs for the BSE sector core footprint, based on the number of operatives currently working in the technologies who have not received any kind of formal training, and the potential influx of operatives who may engage in the technology in the event that the market is stimulated by Government, either through a grant system, or through legislation.

<b>Table 17a: North West BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	8,877
Plumbing	3,655
Heating and Ventilation	2,249
Air Conditioning and Refrigeration	1,124
<b>Photovoltaic</b>	
Electrical Trades and Installation	5,389
Plumbing	2,218
Heating and Ventilation	1,365
Air Conditioning and Refrigeration	683
<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	8,256
Plumbing	3,399
Heating and Ventilation	2,092
Air Conditioning and Refrigeration	1,046
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	3,072
Plumbing	1,265
Heating and Ventilation	778
Air Conditioning and Refrigeration	389
<b>Ground Source Heat Pumps</b>	
Electrical Trades and Installation	6,479
Plumbing	2,667
Heating and Ventilation	1,641
Air Conditioning and Refrigeration	821
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	2,626
Plumbing	1,081

<sup>7</sup> The term indicative is used deliberately here, as currently, the numbers are believed to be 'slightly high' in some environmental technologies against some trades, as an average percentage methodology was used to assess engagement. In addition, these figures only identify those operatives who are working in the technologies, but have received no training, or may do so in the event that the market is stimulated. What they do not take account of, is the potential for the market being heavily stimulated, such that many more/ all companies enter the market. In this event, the figures would be much larger. SummitSkills is currently working to improve the methodology to take account of industry differences at regional level, and it is hoped to publish these revised numbers in a later report in 2010.

Heating and Ventilation	665
Air Conditioning and Refrigeration	332
<b>Biomass</b>	
Electrical Trades and Installation	3,833
Plumbing	1,578
Heating and Ventilation	971
Air Conditioning and Refrigeration	485
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	3,594
Plumbing	1,480
Heating and Ventilation	911
Air Conditioning and Refrigeration	455
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	4,965
Plumbing	1,529
Heating and Ventilation	1,258
Air Conditioning and Refrigeration	629
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	2,482
Plumbing	1,021
Heating and Ventilation	629
Air Conditioning and Refrigeration	314
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	8,606
Plumbing	3,543
Heating and Ventilation	1,421
Air Conditioning and Refrigeration	1,090

<b>Table 17b: North East BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	4,176
Plumbing	1,748
Heating and Ventilation	1,076
Air Conditioning and Refrigeration	538
<b>Photovoltaic</b>	
Electrical Trades and Installation	2,327
Plumbing	8,257
Heating and Ventilation	531
Air Conditioning and Refrigeration	266
<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	4,476
Plumbing	1,660
Heating and Ventilation	1,021
Air Conditioning and Refrigeration	511
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	3,200
Plumbing	1,187
Heating and Ventilation	730

Air Conditioning and Refrigeration	365
<b>Ground Source Heat Pumps</b>	
Electrical Trades and Installation	4,476
Plumbing	1,659
Heating and Ventilation	1,021
Air Conditioning and Refrigeration	510
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	1,638
Plumbing	607
Heating and Ventilation	374
Air Conditioning and Refrigeration	187
<b>Biomass</b>	
Electrical Trades and Installation	2,028
Plumbing	752
Heating and Ventilation	462
Air Conditioning and Refrigeration	232
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	1,523
Plumbing	565
Heating and Ventilation	348
Air Conditioning and Refrigeration	174
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	1,848
Plumbing	685
Heating and Ventilation	422
Air Conditioning and Refrigeration	169
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	2,894
Plumbing	1,073
Heating and Ventilation	661
Air Conditioning and Refrigeration	330
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	3,014
Plumbing	1,117
Heating and Ventilation	687
Air Conditioning and Refrigeration	344

<b>Table 17c: Yorkshire and Humberside BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	4,603
Plumbing	2,610
Heating and Ventilation	1,606
Air Conditioning and Refrigeration	804
<b>Photovoltaic</b>	
Electrical Trades and Installation	2,113
Plumbing	1,198
Heating and Ventilation	737
Air Conditioning and Refrigeration	368

<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	7,278
Plumbing	4,128
Heating and Ventilation	2,541
Air Conditioning and Refrigeration	1,270
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	2,488
Plumbing	1,411
Heating and Ventilation	869
Air Conditioning and Refrigeration	434
<b>Ground Source Heat Pumps</b>	
Electrical Trades and Installation	3,206
Plumbing	1,818
Heating and Ventilation	1,119
Air Conditioning and Refrigeration	559
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	1,476
Plumbing	837
Heating and Ventilation	515
Air Conditioning and Refrigeration	258
<b>Biomass</b>	
Electrical Trades and Installation	3,962
Plumbing	2,247
Heating and Ventilation	1,382
Air Conditioning and Refrigeration	691
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	1,386
Plumbing	786
Heating and Ventilation	483
Air Conditioning and Refrigeration	242
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	1,528
Plumbing	867
Heating and Ventilation	533
Air Conditioning and Refrigeration	267
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	2,354
Plumbing	1,334
Heating and Ventilation	822
Air Conditioning and Refrigeration	411
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	2,513
Plumbing	1,425
Heating and Ventilation	877
Air Conditioning and Refrigeration	438

<b>Table 17d: East Midlands BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	3,031
Plumbing	1,254
Heating and Ventilation	772
Air Conditioning and Refrigeration	386
<b>Photovoltaic</b>	
Electrical Trades and Installation	1,668
Plumbing	690
Heating and Ventilation	425
Air Conditioning and Refrigeration	213
<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	5,635
Plumbing	2,332
Heating and Ventilation	1,435
Air Conditioning and Refrigeration	718
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	2,023
Plumbing	838
Heating and Ventilation	515
Air Conditioning and Refrigeration	257
<b>Ground Source Heat Pumps</b>	
Electrical Trades and Installation	5,839
Plumbing	2,416
Heating and Ventilation	1,487
Air Conditioning and Refrigeration	743
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	1,114
Plumbing	461
Heating and Ventilation	284
Air Conditioning and Refrigeration	142
<b>Biomass</b>	
Electrical Trades and Installation	1,724
Plumbing	714
Heating and Ventilation	439
Air Conditioning and Refrigeration	220
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	796
Plumbing	329
Heating and Ventilation	203
Air Conditioning and Refrigeration	101
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	898
Plumbing	371
Heating and Ventilation	229
Air Conditioning and Refrigeration	114
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	1,895
Plumbing	784

Heating and Ventilation	482
Air Conditioning and Refrigeration	241
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	2,754
Plumbing	1,140
Heating and Ventilation	701
Air Conditioning and Refrigeration	351

<b>Table 17e: West Midlands BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	16,048
Plumbing	7,571
Heating and Ventilation	4,660
Air Conditioning and Refrigeration	1,653
<b>Photovoltaic</b>	
Electrical Trades and Installation	5,303
Plumbing	2,502
Heating and Ventilation	1,539
Air Conditioning and Refrigeration	770
<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	11,618
Plumbing	5,481
Heating and Ventilation	5,187
Air Conditioning and Refrigeration	1,687
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	2,436
Plumbing	1,150
Heating and Ventilation	707
Air Conditioning and Refrigeration	353
<b>Ground Source Heat Pumps</b>	
Electrical Trades and Installation	8,555
Plumbing	4,037
Heating and Ventilation	2,484
Air Conditioning and Refrigeration	1,241
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	3,701
Plumbing	1,747
Heating and Ventilation	1,075
Air Conditioning and Refrigeration	538
<b>Biomass</b>	
Electrical Trades and Installation	3,085
Plumbing	1,455
Heating and Ventilation	1,077
Air Conditioning and Refrigeration	448
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	4,293
Plumbing	2,026
Heating and Ventilation	1,246

Air Conditioning and Refrigeration	623
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	4,164
Plumbing	1,965
Heating and Ventilation	1,209
Air Conditioning and Refrigeration	604
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	2,073
Plumbing	979
Heating and Ventilation	602
Air Conditioning and Refrigeration	301
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	5,372
Plumbing	2,534
Heating and Ventilation	1,560
Air Conditioning and Refrigeration	780

<b>Table 17f: East of England BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	16,709
Plumbing	5,962
Heating and Ventilation	3,669
Air Conditioning and Refrigeration	1,835
<b>Photovoltaic</b>	
Electrical Trades and Installation	2,513
Plumbing	896
Heating and Ventilation	552
Air Conditioning and Refrigeration	275
<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	8,211
Plumbing	2,930
Heating and Ventilation	1,803
Air Conditioning and Refrigeration	902
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	2,849
Plumbing	1,017
Heating and Ventilation	626
Air Conditioning and Refrigeration	313
<b>Ground Source Heat Pumps</b>	
Electrical Trades and Installation	8,499
Plumbing	3,032
Heating and Ventilation	1,866
Air Conditioning and Refrigeration	933
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	5,824
Plumbing	2,078
Heating and Ventilation	1,279
Air Conditioning and Refrigeration	639

<b>Biomass</b>	
Electrical Trades and Installation	3,832
Plumbing	1,368
Heating and Ventilation	841
Air Conditioning and Refrigeration	421
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	1,916
Plumbing	684
Heating and Ventilation	421
Air Conditioning and Refrigeration	210
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	2,157
Plumbing	770
Heating and Ventilation	474
Air Conditioning and Refrigeration	236
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	3,504
Plumbing	1,250
Heating and Ventilation	769
Air Conditioning and Refrigeration	384
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	3,867
Plumbing	1,380
Heating and Ventilation	849
Air Conditioning and Refrigeration	425

<b>Table 17g: London BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	13,552
Plumbing	6,047
Heating and Ventilation	3,721
Air Conditioning and Refrigeration	1,861
<b>Photovoltaic</b>	
Electrical Trades and Installation	8,048
Plumbing	3,591
Heating and Ventilation	2,210
Air Conditioning and Refrigeration	1,105
<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	8,011
Plumbing	3,574
Heating and Ventilation	1,273
Air Conditioning and Refrigeration	1,100
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	9,473
Plumbing	4,227
Heating and Ventilation	2,601
Air Conditioning and Refrigeration	1,301
<b>Ground Source Heat Pumps</b>	

Electrical Trades and Installation	10,798
Plumbing	4,819
Heating and Ventilation	2,965
Air Conditioning and Refrigeration	1,483
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	8,569
Plumbing	3,823
Heating and Ventilation	2,353
Air Conditioning and Refrigeration	1,176
<b>Biomass</b>	
Electrical Trades and Installation	8,655
Plumbing	3,861
Heating and Ventilation	2,377
Air Conditioning and Refrigeration	1,888
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	6,684
Plumbing	2,983
Heating and Ventilation	1,835
Air Conditioning and Refrigeration	918
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	8,521
Plumbing	3,802
Heating and Ventilation	2,340
Air Conditioning and Refrigeration	1,170
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	9,960
Plumbing	4,444
Heating and Ventilation	2,734
Air Conditioning and Refrigeration	1,367
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	11,997
Plumbing	5,535
Heating and Ventilation	3,294
Air Conditioning and Refrigeration	1,647

<b>Table 17h: South East BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	8,427
Plumbing	4,749
Heating and Ventilation	2,922
Air Conditioning and Refrigeration	1,461
<b>Photovoltaic</b>	
Electrical Trades and Installation	5,308
Plumbing	2,990
Heating and Ventilation	1,841
Air Conditioning and Refrigeration	920
<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	5,063

Plumbing	2,854
Heating and Ventilation	1,756
Air Conditioning and Refrigeration	879
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	3,224
Plumbing	1,817
Heating and Ventilation	1,118
Air Conditioning and Refrigeration	559
<b>Ground Source Heat Pumps</b>	
Electrical Trades and Installation	8,950
Plumbing	5,044
Heating and Ventilation	3,103
Air Conditioning and Refrigeration	1,553
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	4,528
Plumbing	2,551
Heating and Ventilation	1,570
Air Conditioning and Refrigeration	785
<b>Biomass</b>	
Electrical Trades and Installation	2,233
Plumbing	1,258
Heating and Ventilation	774
Air Conditioning and Refrigeration	387
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	1,570
Plumbing	885
Heating and Ventilation	545
Air Conditioning and Refrigeration	272
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	1,751
Plumbing	987
Heating and Ventilation	608
Air Conditioning and Refrigeration	303
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	5,760
Plumbing	3,246
Heating and Ventilation	1,997
Air Conditioning and Refrigeration	999
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	6,273
Plumbing	3,535
Heating and Ventilation	2,175
Air Conditioning and Refrigeration	1,088

<b>Table 17i: South West BSE sector in environmental technologies</b>	
<b>Solar Water and Heating</b>	
Electrical Trades and Installation	4,795
Plumbing	2,704

Heating and Ventilation	1,664
Air Conditioning and Refrigeration	832
<b>Photovoltaic</b>	
Electrical Trades and Installation	5,270
Plumbing	2,972
Heating and Ventilation	1,829
Air Conditioning and Refrigeration	914
<b>Combined Heating and Power Units</b>	
Electrical Trades and Installation	6,876
Plumbing	3,878
Heating and Ventilation	2,386
Air Conditioning and Refrigeration	1,193
<b>Micro Wind Energy</b>	
Electrical Trades and Installation	2,497
Plumbing	1,408
Heating and Ventilation	867
Air Conditioning and Refrigeration	433
<b>Ground Source Heat Pumps</b>	
Electrical Trades and Installation	6,808
Plumbing	2,087
Heating and Ventilation	2,363
Air Conditioning and Refrigeration	1,181
<b>Air Source Heat Pumps</b>	
Electrical Trades and Installation	2,109
Plumbing	1,190
Heating and Ventilation	732
Air Conditioning and Refrigeration	366
<b>Biomass</b>	
Electrical Trades and Installation	1,776
Plumbing	1,002
Heating and Ventilation	616
Air Conditioning and Refrigeration	308
<b>Bio-Fuel (Liquid)</b>	
Electrical Trades and Installation	1,628
Plumbing	918
Heating and Ventilation	565
Air Conditioning and Refrigeration	282
<b>Micro Hydro Generation Systems</b>	
Electrical Trades and Installation	1,628
Plumbing	918
Heating and Ventilation	565
Air Conditioning and Refrigeration	282
<b>Fuel Cell Technology</b>	
Electrical Trades and Installation	2,994
Plumbing	1,688
Heating and Ventilation	1,039
Air Conditioning and Refrigeration	520
<b>Rainwater Harvesting</b>	
Electrical Trades and Installation	4,625

Plumbing	2,608
Heating and Ventilation	1,605
Air Conditioning and Refrigeration	802

SummitSkills believes that if the environmental technologies in the industries in the SummitSkills footprint across the UK were to be stimulated, then the potential training needs identified in table 17 would make it difficult for the supply network to respond effectively to perceived demand.

SummitSkills is currently working with a number of partners and stakeholders to address, this problem, as well as undertaking further research to accurately identify as the UK including Wales comes out of recession, the number of operatives requiring training in each environmental technology in each English region and devolved nation, and then (in consultation with partners and stakeholders) produce a plan by region/ nation to develop training to meet potential demand. It is anticipated that this research work will be completed by the end of April/May.

## Skills gaps among SummitSkills' employers

Table 18 shows the percentage of BSE companies who consider that their staff have all the skills required for the work that they have by industry. The research contained in this table suggests that the majority of employers think that their staff are adequately skilled for the work that they do.

<b>Table 18: Percentage of BSE companies interviewed, who consider that their staff have all the skills required for the work that they have by industry</b>					
	<b>Total</b>	<b>Air Conditioning and Refrigeration</b>	<b>Electrotechnical</b>	<b>Heating and Ventilation</b>	<b>Plumbing</b>
Yes	81%	81%	78%	92%	83%
No	17%	17%	21%	8%	17%
Don't Know	2%	2%	1%	0%	0%

Base= 2000

Table 19 below shows for the UK, where employers believe that they have skills gaps, what these skills gaps are.

<b>Table 19: BSE companies surveyed company skills needs by industry</b>					
	<b>Total</b>	<b>Air Conditioning &amp; Refrigeration</b>	<b>Electro-technical</b>	<b>Heating and Ventilation</b>	<b>Plumbing</b>
Electrical	21%	9%	33%	11%	9%
Regulations/ Legislations	5%	0%	8%	0%	5%
Boiler Maintenance	1%	0%	0%	0%	9%
Gas	11%	9%	1%	7%	18%
Welding	1%	0%	0%	5%	0%
Mechanical	1%	0%	1%	0%	0%
Health and Safety	4%	0%	4%	22%	4%
Business Skills	1%	0%	2%	2%	1%
Product Training	15%	17%	0%	2%	5%
IT Skills	9%	0%	23%	3%	4%
Plumbing	2%	0%	1%	5%	10%
Literacy and Numeracy	1%	0%	0%	2%	5%
Management Skills	1%	0%	1%	11%	0%
Solar Heating	1%	0%	0%	0%	3%
First Aid	1%	0%	1%	2%	0%
Technical Skills	6%	1%	13%	0%	3%
Scaffolding	0%	0%	0%	2%	0%
More Common Sense	1%	0%	0%	0%	3%
Experience	9%	9%	2%	7%	5%
Testing	2%	0%	4%	0%	1%
Keeping Qualifications/ Skills up to date	6%	3%	4%	6%	11%
Obtaining Required Qualifications	11%	9%	6%	5%	5%

General Increasing the number/ level of skills	1%	0%	1%	1%	3%
Apprentices are still learning	2%	0%	2%	0%	4%
Depends on requirements	8%	0%	18%	4%	3%
Training Costs are too high	1%	0%	1%	0%	3%
They should be trained more	10%	9%	3%	8%	9%
Inspection Techniques	1%	0%	2%	1%	1%
Become registered in the required trade	1%	0%	0%	2%	4%
Better communication skills	0%	0%	0%	1%	1%
Improved standards of training course	1%	0%	1%	0%	0%
Paperwork/ administration (including form filling	8%	0%	18%	0%	1%
Knowledge of renewable energy	1%	0%	0%	1%	3%
General trade skills	1%	50%	2%	1%	1%
Customer service skills	0%	0%	0%	1%	1%
Engineering Skills (unspecified)	5%	0%	13%	0%	0%
Finance	0%	0%	0%	0%	0%
Improvement to work attitude/ work ethics	1%	0%	0%	0%	3%
Other	10%	2%	15%	3%	16%
None	0%	0%	0%	0%	1%
Don't Know	1%	0%	1%	17%	1%

Base= 2000

Table 20 shows the same data but aggregated by the whole sector in each of the English regions.

<b>Table 20: BSE Companies Surveyed Companies Skills Needs by English region</b>									
	<b>North West</b>	<b>North East</b>	<b>Yorks &amp; Humber</b>	<b>East Midlands</b>	<b>West Midlands</b>	<b>East of England</b>	<b>London</b>	<b>South East</b>	<b>South West</b>
Electrical	9%	0%	6%	9%	56%	4%	4%	15%	12%
Regulations/ Legislations	9%	0%	8%	3%	2%	1%	4%	13%	8%
Boiler Maintenance	0%	18%	0%	2%	1%	1%	0%	1%	4%
Gas	17%	0%	10%	0%	27%	1%	1%	8%	9%
Welding	3%	0%	0%	0%	0%	0%	0%	2%	0%
Mechanical	4%	0%	3%	2%	0%	0%	0%	0%	0%
Health and Safety	5%	13%	16%	1%	0%	0%	2%	6%	12%
Business Skills	4%	0%	0%	0%	1%	0%	1%	2%	0%
Product Training	6%	0%	0%	1%	26%	1%	64%	3%	3%
IT Skills	6%	9%	1%	4%	26%	1%	4%	2%	4%

Plumbing	2%	0%	4%	2%	2%	0%	2%	2%	4%
Literacy and Numeracy	0%	0%	0%	0%	0%	2%	2%	2%	4%
Management Skills	0%	0%	5%	0%	0%	0%	2%	1%	2%
Solar Heating	0%	0%	4%	0%	0%	0%	3%	0%	0%
First Aid	0%	13%	3%	0%	0%	1%	1%	0%	0%
Technical Skills	4%	35%	0%	0%	1%	1%	3%	41%	2%
Scaffolding	0%	0%	0%	1%	1%	0%	0%	0%	0%
More Common Sense	0%	0%	4%	0%	0%	1%	0%	0%	0%
Experience	0%	13%	5%	0%	1%	40%	0%	5%	4%
Testing	2%	0%	7%	1%	0%	1%	0%	3%	11%
Keeping Qualifications/ Skills up to date	9%	9%	6%	2%	8%	4%	1%	8%	11%
Obtaining Required Qualifications	9%	9%	8%	5%	2%	38%	2%	2%	15%
General Increasing the number/ level of skills	8%	0%	0%	0%	0%	0%	1%	2%	0%
Apprentices are still learning	6%	0%	7%	1%	0%	1%	0%	2%	6%
Depends on requirements	5%	0%	0%	68%	1%	2%	1%	3%	0%
Training Costs are too high	0%	0%	0%	1%	0%	2%	0%	2%	0%
They should be trained more	14%	8%	8%	3%	1%	37%	3%	5%	9%
Inspection Techniques	2%	0%	0%	1%	0%	1%	0%	4%	5%
Become registered in the required trade	9%	0%	4%	2%	0%	0%	0%	2%	0%
Better communication skills	0%	0%	0%	0%	0%	0%	0%	3%	0%
Improved standards of training course	0%	0%	0%	0%	1%	1%	0%	2%	0%
Paperwork/ administration (including form	0%	0%	0%	70%	1%	1%	1%	0%	0%

filling									
Knowledge of renewable energy	0%	0%	6%	2%	0%	1%	0%	0%	0%
General trade skills	0%	35%	0%	1%	0%	0%	1%	2%	4%
Customer service skills	2%	0%	0%	0%	0%	0%	0%	0%	4%
Engineering Skills (unspecified)	0%	0%	0%	8%	0%	0%	1%	37%	2%
Finance	0%	0%	0%	0%	0%	0%	0%	0%	0%
Improvement to work attitude/ work ethics	0%	0%	4%	0%	0%	0%	2%	0%	3%
Other	13%	0%	3%	3%	2%	4%	10%	43%	8%
None	0%	0%	0%	0%	0%	0%	0%	0%	0%
Don't Know	0%	0%	3%	0%	0%	0%	0%	3%	4%

Base=2,000

SummitSkills is currently working with partners and stakeholders to specifically identify skills needs more effectively in the sector, and will continue to work with RDAs and other partners and stakeholders in the regions to meet the sectors perceived training needs.

## Labour requirements

Although the BSE sector has been affected by the recession, and labour in the sector is likely to reduce overall in the UK to 2014, and this is replicated in the English BSE sector, particularly in the mechanical industries of plumbing, heating and ventilation, air conditioning and refrigeration.

Tables 21a-i shows the labour working in each trade area in each English region between the years 2008-2014, with tables 22a-i showing the labour demand per year, making allowance for the inflows and outflows of labour between 2009 and 2014.

<b>Table 21a: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in North West</b>							
	2008	2009	2010	2011	2012	2013	2014
Electricians	15,606	15,508	15,411	15,371	15,331	15,291	15,252
Plumbing	9,498	8,930	8,363	8,313	8,263	8,213	8,163
Heating and Ventilation Engineers	5,845	5,496	5,146	5,115	5,084	5,053	5,024
Refrigeration Trades	1,899	1,786	1,673	1,663	1,653	1,643	1,632
Air Conditioning Trades	1,023	962	901	895	889	883	879

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

<b>Table 22a: North West inflow requirement for BSE sector 2008-2014</b>		
	Total Labour Requirement	Total inflow requirement at assumption 5% outflow
<b>2009</b>		
Electricians	15,606	780
Plumbing	9,498	475
Heating and Ventilation Engineers	5,845	292
Refrigeration Trades	1,899	95
Air Conditioning Trades	1,023	51
<b>2009</b>		
Electricians	15,508	775
Plumbing	8,930	447
Heating and Ventilation Engineers	5,496	275
Refrigeration Trades	1,786	89
Air Conditioning Trades	962	48
<b>2010</b>		
Electricians	15,411	771
Plumbing	8,363	418
Heating and Ventilation Engineers	5,146	257
Refrigeration Trades	1,673	84
Air Conditioning Trades	901	45
<b>2011</b>		
Electricians	15,371	769

Plumbing	8,313	416
Heating and Ventilation Engineers	5,115	256
Refrigeration Trades	1,663	83
Air Conditioning Trades	895	45
<b>2012</b>		
Electricians	15,331	767
Plumbing	8,263	412
Heating and Ventilation Engineers	5,084	254
Refrigeration Trades	1,653	83
Air Conditioning Trades	889	44
<b>2013</b>		
Electricians	15,291	765
Plumbing	8,213	411
Heating and Ventilation Engineers	5,053	253
Refrigeration Trades	1,643	82
Air Conditioning Trades	883	44
<b>2014</b>		
Electricians	15,252	763
Plumbing	8,163	408
Heating and Ventilation Engineers	5,024	251
Refrigeration Trades	1,632	82
Air Conditioning Trades	879	44

**Table 21b: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in North East**

	2008	2009	2010	2011	2012	2013	2014
Electricians	7,860	7,468	7,077	6,871	6,665	6,459	6,871
Plumbing	4,370	4,085	3,800	3,801	3,802	3,803	3,804
Heating and Ventilation Engineers	2,689	2,513	2,338	2,339	2,340	2,340	2,341
Refrigeration Trades	874	817	760	760	760	761	761
Air Conditioning Trades	471	440	409	409	409	410	410

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

**Table 22b: North East inflow requirement for BSE sector 2008-2014**

	Total Labour Requirement	Total inflow requirement at assumption 5% outflow
<b>2009</b>		
Electricians	7,860	393
Plumbing	4,370	219
Heating and Ventilation Engineers	2,689	134
Refrigeration Trades	874	44
Air Conditioning Trades	471	24
<b>2009</b>		
Electricians	7,468	373

Plumbing	4,085	204
Heating and Ventilation Engineers	2,513	126
Refrigeration Trades	817	41
Air Conditioning Trades	440	22
<b>2010</b>		
Electricians	7,077	354
Plumbing	3,800	190
Heating and Ventilation Engineers	2,338	117
Refrigeration Trades	760	38
Air Conditioning Trades	409	21
<b>2011</b>		
Electricians	6,871	344
Plumbing	3,801	190
Heating and Ventilation Engineers	2,339	117
Refrigeration Trades	760	38
Air Conditioning Trades	409	20
<b>2012</b>		
Electricians	6,665	333
Plumbing	3,802	190
Heating and Ventilation Engineers	2,340	117
Refrigeration Trades	760	38
Air Conditioning Trades	409	20
<b>2013</b>		
Electricians	6,459	323
Plumbing	3,803	190
Heating and Ventilation Engineers	2,340	117
Refrigeration Trades	761	38
Air Conditioning Trades	410	21
<b>2014</b>		
Electricians	6,871	344
Plumbing	3,804	190
Heating and Ventilation Engineers	2,341	117
Refrigeration Trades	761	38
Air Conditioning Trades	410	21

**Table 21c: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in Yorkshire and Humberside**

	2008	2009	2010	2011	2012	2013	2014
Electricians	18,056	16,928	15,800	15,447	15,094	14,741	14,389
Plumbing	7,900	7,468	7,036	6,981	6,926	6,871	6,981
Heating and Ventilation Engineers	4,862	4,596	4,330	4,321	4,312	4,303	4,296
Refrigeration Trades	1,580	1,494	1,407	1,404	1,401	1,398	1,396
Air Conditioning Trades	851	805	758	756	755	753	752

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

<b>Table 22c: Yorkshire and Humberside inflow requirement for BSE sector 2008-2014</b>		
	<b>Total Labour Requirement</b>	<b>Total inflow requirement at assumption 5% outflow</b>
<b>2009</b>		
Electricians	18,056	903
Plumbing	7,900	395
Heating and Ventilation Engineers	4,862	243
Refrigeration Trades	1,580	79
Air Conditioning Trades	851	43
<b>2009</b>		
Electricians	16,928	846
Plumbing	7,468	373
Heating and Ventilation Engineers	4,596	230
Refrigeration Trades	1,494	75
Air Conditioning Trades	805	40
<b>2010</b>		
Electricians	15,800	790
Plumbing	7,036	352
Heating and Ventilation Engineers	4,330	217
Refrigeration Trades	1,407	70
Air Conditioning Trades	758	38
<b>2011</b>		
Electricians	15,447	772
Plumbing	6,981	349
Heating and Ventilation Engineers	4,321	216
Refrigeration Trades	1,404	70
Air Conditioning Trades	756	38
<b>2012</b>		
Electricians	15,094	755
Plumbing	6,926	346
Heating and Ventilation Engineers	4,312	216
Refrigeration Trades	1,401	70
Air Conditioning Trades	755	38
<b>2013</b>		
Electricians	14,741	737
Plumbing	6,871	344
Heating and Ventilation Engineers	4,303	215
Refrigeration Trades	1,398	70
Air Conditioning Trades	753	38
<b>2014</b>		
Electricians	14,389	719
Plumbing	6,981	349
Heating and Ventilation Engineers	4,296	215
Refrigeration Trades	1,396	70
Air Conditioning Trades	752	38

<b>Table 21d: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in East Midlands</b>							
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Electricians	13,558	12,899	12,241	11,971	11,701	11,431	11,161
Plumbing	5,085	5,085	4,914	5,005	5,095	5,185	5,275
Heating and Ventilation Engineers	3,129	3,077	3,024	3,078	3,134	3,190	3,246
Refrigeration Trades	1,017	1,000	983	1,001	1,019	1,037	1,055
Air Conditioning Trades	548	548	529	539	549	559	568

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

<b>Table 22d: East Midlands inflow requirement for BSE sector 2008-2014</b>		
	<b>Total Labour Requirement</b>	<b>Total inflow requirement at assumption 5% outflow</b>
<b>2009</b>		
Electricians	13,558	678
Plumbing	5,085	254
Heating and Ventilation Engineers	3,129	156
Refrigeration Trades	1,017	51
Air Conditioning Trades	548	27
<b>2009</b>		
Electricians	12,899	645
Plumbing	5,085	254
Heating and Ventilation Engineers	3,077	154
Refrigeration Trades	1,000	50
Air Conditioning Trades	548	27
<b>2010</b>		
Electricians	12,241	612
Plumbing	4,914	246
Heating and Ventilation Engineers	3,024	151
Refrigeration Trades	983	49
Air Conditioning Trades	529	26
<b>2011</b>		
Electricians	11,971	599
Plumbing	5,005	250
Heating and Ventilation Engineers	3,078	154
Refrigeration Trades	1,001	50
Air Conditioning Trades	539	27
<b>2012</b>		
Electricians	11,701	585
Plumbing	5,095	255
Heating and Ventilation Engineers	3,134	157
Refrigeration Trades	1,019	51
Air Conditioning Trades	549	27
<b>2013</b>		
Electricians	11,431	572

Plumbing	5,185	259
Heating and Ventilation Engineers	3,190	160
Refrigeration Trades	1,037	52
Air Conditioning Trades	559	28
<b>2014</b>		
Electricians	11,161	558
Plumbing	5,275	264
Heating and Ventilation Engineers	3,246	162
Refrigeration Trades	1,055	53
Air Conditioning Trades	568	28

**Table 21e: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in West Midlands**

	2008	2009	2010	2011	2012	2013	2014
Electricians	15,201	15,039	14,876	14,817	14,758	14,699	14,641
Plumbing	7,537	7,128	6,719	6,766	6,813	6,860	6,905
Heating and Ventilation Engineers	4,638	4,387	4,135	4,164	4,193	4,222	4,249
Refrigeration Trades	1,507	1,426	1,344	1,353	1,362	1,371	1,381
Air Conditioning Trades	812	768	724	729	735	740	744

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

**Table 22e: West Midlands inflow requirement for BSE sector 2008-2014**

	Total Labour Requirement	Total inflow requirement at assumption 5% outflow
<b>2009</b>		
Electricians	15,201	760
Plumbing	7,537	377
Heating and Ventilation Engineers	4,638	232
Refrigeration Trades	1,507	75
Air Conditioning Trades	812	41
<b>2009</b>		
Electricians	15,039	752
Plumbing	7,128	356
Heating and Ventilation Engineers	4,387	219
Refrigeration Trades	1,426	71
Air Conditioning Trades	768	38
<b>2010</b>		
Electricians	14,876	744
Plumbing	6,719	336
Heating and Ventilation Engineers	4,135	207
Refrigeration Trades	1,344	67
Air Conditioning Trades	724	36
<b>2011</b>		
Electricians	14,817	741

Plumbing	6,766	338
Heating and Ventilation Engineers	4,164	208
Refrigeration Trades	1,353	68
Air Conditioning Trades	729	36
<b>2012</b>		
Electricians	14,758	738
Plumbing	6,813	341
Heating and Ventilation Engineers	4,193	210
Refrigeration Trades	1,362	68
Air Conditioning Trades	735	37
<b>2013</b>		
Electricians	14,699	735
Plumbing	6,860	343
Heating and Ventilation Engineers	4,222	211
Refrigeration Trades	1,371	69
Air Conditioning Trades	740	37
<b>2014</b>		
Electricians	14,641	732
Plumbing	6,905	345
Heating and Ventilation Engineers	4,249	212
Refrigeration Trades	1,381	69
Air Conditioning Trades	744	37

**Table 21f: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in East of England**

	2008	2009	2010	2011	2012	2013	2014
Electricians	17,966	18,228	18,490	18,592	18,694	18,796	18,897
Plumbing	7,009	7,041	7,073	7,169	7,265	7,361	7,458
Heating and Ventilation Engineers	4,313	4,333	4,352	4,411	4,470	4,529	4,589
Refrigeration Trades	1,402	1,409	1,415	1,434	1,453	1,472	1,492
Air Conditioning Trades	755	759	762	772	782	793	803

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

**Table 22f: East of England inflow requirement for BSE sector 2008-2014**

	Total Labour Requirement	Total inflow requirement at assumption 5% outflow
<b>2009</b>		
Electricians	17,966	898
Plumbing	7,009	350
Heating and Ventilation Engineers	4,313	216
Refrigeration Trades	1,402	70
Air Conditioning Trades	755	38
<b>2009</b>		
Electricians	18,228	911

Plumbing	7,041	352
Heating and Ventilation Engineers	4,333	217
Refrigeration Trades	1,409	70
Air Conditioning Trades	759	38
<b>2010</b>		
Electricians	18,490	925
Plumbing	7,073	354
Heating and Ventilation Engineers	4,352	218
Refrigeration Trades	1,415	71
Air Conditioning Trades	762	38
<b>2011</b>		
Electricians	18,592	930
Plumbing	7,169	358
Heating and Ventilation Engineers	4,411	221
Refrigeration Trades	1,434	72
Air Conditioning Trades	772	39
<b>2012</b>		
Electricians	18,694	935
Plumbing	7,265	363
Heating and Ventilation Engineers	4,470	224
Refrigeration Trades	1,453	73
Air Conditioning Trades	782	39
<b>2013</b>		
Electricians	18,796	940
Plumbing	7,361	368
Heating and Ventilation Engineers	4,529	226
Refrigeration Trades	1,472	74
Air Conditioning Trades	793	40
<b>2014</b>		
Electricians	18,897	945
Plumbing	7,458	373
Heating and Ventilation Engineers	4,589	229
Refrigeration Trades	1,492	75
Air Conditioning Trades	803	40

**Table 21g: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in London**

	2008	2009	2010	2011	2012	2013	2014
Electricians	21,868	20,814	19,759	19,403	19,047	18,691	18,334
Plumbing	8,894	8,041	7,187	6,931	6,675	6,419	6,162
Heating and Ventilation Engineers	5,473	4,948	4,423	4,265	4,107	3,949	3,792
Refrigeration Trades	1,779	1,608	1,437	1,386	1,335	1,284	1,232
Air Conditioning Trades	958	866	774	746	718	690	663

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

<b>Table 22g: London inflow requirement for BSE sector 2008-2014</b>		
	<b>Total Labour Requirement</b>	<b>Total inflow requirement at assumption 5% outflow</b>
<b>2009</b>		
Electricians	21,868	1,093
Plumbing	8,894	445
Heating and Ventilation Engineers	5,473	274
Refrigeration Trades	1,779	89
Air Conditioning Trades	958	48
<b>2009</b>		
Electricians	20,814	1,041
Plumbing	8,041	402
Heating and Ventilation Engineers	4,948	247
Refrigeration Trades	1,608	80
Air Conditioning Trades	866	43
<b>2010</b>		
Electricians	19,759	988
Plumbing	7,187	359
Heating and Ventilation Engineers	4,423	221
Refrigeration Trades	1,437	72
Air Conditioning Trades	774	39
<b>2011</b>		
Electricians	19,403	970
Plumbing	6,931	347
Heating and Ventilation Engineers	4,265	213
Refrigeration Trades	1,386	69
Air Conditioning Trades	746	37
<b>2012</b>		
Electricians	19,047	952
Plumbing	6,675	334
Heating and Ventilation Engineers	4,107	205
Refrigeration Trades	1,335	67
Air Conditioning Trades	718	36
<b>2013</b>		
Electricians	18,691	935
Plumbing	6,419	321
Heating and Ventilation Engineers	3,949	197
Refrigeration Trades	1,284	64
Air Conditioning Trades	690	35
<b>2014</b>		
Electricians	18,334	917
Plumbing	6,162	308
Heating and Ventilation Engineers	3,792	190
Refrigeration Trades	1,232	62
Air Conditioning Trades	663	33

<b>Table 21h: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in South East</b>							
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Electricians	20,981	20,322	19,663	19,382	19,101	18,820	18,540
Plumbing	12,333	11,264	10,195	10,466	10,737	11,008	9,110
Heating and Ventilation Engineers	7,590	6,707	6,274	6,107	5,940	5,773	5,606
Refrigeration Trades	2,466	2,253	2,039	1,985	1,931	1,877	1,822
Air Conditioning Trades	1,328	1,213	1,098	1,069	1,040	1,011	981

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

<b>Table 22h: South East inflow requirement for BSE sector 2008-2014</b>		
	<b>Total Labour Requirement</b>	<b>Total inflow requirement at assumption 5% outflow</b>
<b>2009</b>		
Electricians	20,981	1,049
Plumbing	12,333	617
Heating and Ventilation Engineers	7,590	380
Refrigeration Trades	2,466	123
Air Conditioning Trades	1,328	66
<b>2009</b>		
Electricians	20,322	1,016
Plumbing	11,264	563
Heating and Ventilation Engineers	6,707	335
Refrigeration Trades	2,253	113
Air Conditioning Trades	1,213	61
<b>2010</b>		
Electricians	19,663	983
Plumbing	10,195	510
Heating and Ventilation Engineers	6,274	314
Refrigeration Trades	2,039	102
Air Conditioning Trades	1,098	55
<b>2011</b>		
Electricians	19,382	969
Plumbing	10,466	523
Heating and Ventilation Engineers	6,107	305
Refrigeration Trades	1,985	99
Air Conditioning Trades	1,069	53
<b>2012</b>		
Electricians	19,101	955
Plumbing	10,737	537
Heating and Ventilation Engineers	5,940	297
Refrigeration Trades	1,931	97
Air Conditioning Trades	1,040	52
<b>2013</b>		
Electricians	18,820	941

Plumbing	11,008	550
Heating and Ventilation Engineers	5,773	289
Refrigeration Trades	1,877	94
Air Conditioning Trades	1,011	51
<b>2014</b>		
Electricians	18,540	927
Plumbing	9,110	456
Heating and Ventilation Engineers	5,606	280
Refrigeration Trades	1,822	91
Air Conditioning Trades	981	49

**Table 21i: Proposed numbers of operatives in core trade areas of SummitSkills footprint by trade and year; 2008-2014 in South West**

	2008	2009	2010	2011	2012	2013	2014
Electricians	11,618	11,704	11,790	11,562	11,334	11,106	10,877
Plumbing	7,512	6,943	6,374	6,623	6,512	6,401	5,929
Heating and Ventilation Engineers	4,623	4,273	3,922	3,854	3,786	3,718	3,649
Refrigeration Trades	1,502	1,389	1,275	1,253	1,231	1,209	1,186
Air Conditioning Trades	809	748	686	674	662	650	638

Inflow can include people trained in the sector who have been working in other sectors, although there is no way to know the exact percentage of those who may return. You can assume therefore that the total inflow is the maximum new entrant need.

5% outflow is assumed and is deemed to cover those operatives leaving the sector through retirement, death or moving to work in another sector for whatever reason.

**Table 22i: South West inflow requirement for BSE sector 2008-2014**

	Total Labour Requirement	Total inflow requirement at assumption 5% outflow
<b>2009</b>		
Electricians	11,618	581
Plumbing	7,512	376
Heating and Ventilation Engineers	4,623	231
Refrigeration Trades	1,502	75
Air Conditioning Trades	809	40
<b>2009</b>		
Electricians	11,704	585
Plumbing	6,943	347
Heating and Ventilation Engineers	4,273	214
Refrigeration Trades	1,389	69
Air Conditioning Trades	748	37
<b>2010</b>		
Electricians	11,790	590
Plumbing	6,374	319
Heating and Ventilation Engineers	3,922	196
Refrigeration Trades	1,275	64
Air Conditioning Trades	686	34
<b>2011</b>		
Electricians	11,562	578

Plumbing	6,623	331
Heating and Ventilation Engineers	3,854	193
Refrigeration Trades	1,253	63
Air Conditioning Trades	674	34
<b>2012</b>		
Electricians	11,334	567
Plumbing	6,512	326
Heating and Ventilation Engineers	3,786	189
Refrigeration Trades	1,231	62
Air Conditioning Trades	662	33
<b>2013</b>		
Electricians	11,106	555
Plumbing	6,401	320
Heating and Ventilation Engineers	3,718	186
Refrigeration Trades	1,209	60
Air Conditioning Trades	650	33
<b>2014</b>		
Electricians	10,877	544
Plumbing	5,929	296
Heating and Ventilation Engineers	3,649	182
Refrigeration Trades	1,186	59
Air Conditioning Trades	638	32

## Migrant labour

Although from SummitSkills research, only 9% of the sample companies across the UK employed migrant labour, it should be remembered that 85% of the total SummitSkills footprint is micro businesses of less than five people, with the majority being sole traders

Table 23 below shows however that the percentage of companies employing migrant labour rises as company size increases, with the largest recruiters of migrant labour being the largest companies, suggesting that the BSE sector may have a significant exposure to migrant labour, which may lead to skills shortages when the economy improves for those companies if the migrant labour does not return.

**Table 23: Percentage of BSE companies employing migrant labour in the last 3 years by company size**

	Total	Single Sites	Multi-Sites	2-15	16-25	26-49	50-250	251+
Yes	9%	8%	15%	7%	10%	29%	19%	81%
No	91%	92%	85%	93%	90%	71%	81%	19%
Don't Know	0%	0%	0%	0%	0%	0%	0%	0%

Base=2000

Table 24 shows the percentage of BSE companies employing migrant labour in the last three years in the English regions. Perhaps not surprisingly, the largest engagement with migrant labour has been in London and the South of England, where during the recent boom, there was a considerable amount of work for the sector.

**Table 24: Percentage of BSE companies employing migrant labour in the last three years by English region**

	North West	North East	Yorks & Humber	East Midlands	West Midlands	East of England	London	South East	South West
Yes	2%	9%	3%	4%	2%	21%	17%	8%	6%
No	98%	91%	97%	96%	98%	79%	83%	92%	94%
Don't know	0%	0%	0%	0%	0%	0%	0%	0%	0%

Base=2000

Table 25 below, shows the country of origin where the migrant labour emanated from, and suggests that across the English regions, migrant labour from certain nationalities appears to be located in some regions, with the exception of Poles, who appear to be spread around the whole of not just the English regions, but the whole of the UK.

**Table 25: Countries of origin/domicile of BSE migrant workers in English regions**

	North West	North East	Yorks & Humber	East Midlands	West Midlands	East of England	London	South East	South West
Afghanistan	0%	0%	0%	0%	23%	0%	19%	0%	0%
Albania	0%	0%	0%	0%	0%	0%	3%	4%	0%
Algeria	0%	0%	0%	0%	16%	0%	0%	0%	0%
Australia	0%	0%	0%	0%	0%	4%	25%	18%	11%
Bahamas	0%	18%	0%	0%	0%	0%	0%	2%	0%

Bulgaria	0%	0%	0%	0%	0%	0%	2%	5%	0%
Cameroon	0%	0%	27%	0%	0%	0%	0%	0%	0%
Central Africa	0%	0%	0%	0%	0%	0%	2%	0%	0%
Croatia	0%	0%	0%	15%	0%	0%	0%	0%	0%
Cyprus	0%	0%	0%	0%	0%	0%	3%	5%	0%
Czech Republic	0%	0%	0%	11%	0%	3%	4%	0%	0%
France	0%	0%	28%	0%	0%	0%	0%	7%	11%
Germany	0%	0%	0%	0%	0%	0%	19%	0%	11%
Ghana	0%	0%	0%	0%	0%	0%	0%	5%	0%
Hungary	0%	0%	0%	0%	0%	1%	0%	0%	0%
India	0%	5%	0%	0%	0%	0%	5%	8%	0%
Iraq	0%	0%	0%	0%	16%	0%	0%	0%	0%
Ireland	0%	21%	0%	0%	0%	0%	21%	2%	0%
Italy	35%	0%	0%	0%	0%	0%	0%	7%	0%
Jamaica	0%	5%	0%	0%	0%	0%	5%	7%	0%
Laos	0%	0%	0%	0%	0%	0%	0%	4%	0%
Latvia	0%	0%	0%	0%	0%	0%	0%	5%	0%
Lebanon	0%	4%	0%	0%	0%	0%	4%	0%	0%
Lithuania	0%	3%	0%	0%	0%	2%	3%	13%	17%
Malaysia	0%	0%	0%	0%	3%	0%	0%	1%	0%
Malta	0%	0%	22%	0%	0%	0%	0%	0%	0%
Mauritius	0%	0%	0%	0%	16%	0%	0%	0%	0%
New Zealand	0%	48%	0%	21%	0%	0%	48%	10%	11%
Nigeria	0%	0%	0%	0%	0%	0%	0%	5%	0%
Pakistan	0%	4%	0%	0%	0%	0%	4%	0%	0%
Philippines	0%	19%	0%	0%	0%	0%	19%	5%	0%
Poland	100%	69%	23%	67%	43%	9%	69%	62%	74%
Portugal	0%	0%	0%	0%	0%	0%	0%	5%	11%
Romania	0%	8%	0%	0%	0%	5%	8%	4%	9%
Russia	0%	13%	0%	0%	0%	2%	13%	0%	0%
Slovakia	0%	2%	0%	0%	0%	81%	2%	4%	0%
South Africa	0%	25%	0%	0%	0%	3%	25%	15%	0%
Spain	0%	0%	0%	0%	0%	0%	0%	2%	0%
Sweden	0%	0%	0%	0%	0%	0%	0%	2%	0%
Switzerland	0%	0%	0%	0%	0%	0%	0%	3%	0%
Turkey	0%	3%	0%	0%	0%	0%	3%	0%	0%
United States	0%	0%	0%	0%	0%	1%	0%	2%	0%
Uzbekistan	0%	0%	0%	0%	0%	0%	0%	0%	0%
Zimbabwe	0%	0%	0%	15%	0%	0%	0%	0%	0%

Base=2000

SummitSkills continues to work with the MAC, partners and stakeholders on issues related to migrant workers, while continuing to support the development of apprenticeships in the sector to increase the amount of skilled indigenous labour.

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