

# POTENTIAL TRAINING DEMAND IN ENVIRONMENTAL TECHNOLOGIES IN BUILDING SERVICES ENGINEERING

JULY 2011

## Demand and Supply Side Gap Analysis

Stage 3



GREEN SKILLS FOR A GREEN FUTURE  
BUILDING SERVICES ENGINEERING

Summit **SKILLS**

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## Executive Summary

This report looks at the issues that surround the supply of environmental technologies training for the Building Services Engineering (BSE) Sector. A number of issues and challenges have been identified which SummitSkills and its partners and stakeholders will need to address to ensure that the sector receives high quality education and training:

- Currently the supply of environmental technologies is following demand articulated by the sector, and this stage 3 report mirrors the findings in the first of our reports in this series. Training is more readily available in solar water and photovoltaic panels, but not in areas like micro-hydro where the sector has not shown an interest.
- FE colleges and private training providers offer the BSE sector similar amounts of training in environmental technologies. The other main provider is training organisations within larger employers. Manufacturers also provide product-specific training, although these have not been considered in this report because training is product specific not generic. However SummitSkills accepts that, ipso facto, there will be some generic training.
- Many of the courses that providers define as environmental technology courses would not necessarily be seen as such by SummitSkills.
- The courses offered by providers to the BSE sector are predominantly offered to experienced and qualified craft operatives. What is worrying is the smaller number of providers (as high as 20% in some regions) that appear to be offering courses to anyone who wants to do them, which is a concern to SummitSkills.
- Predominantly, courses in these environmental technologies are offered over a 2-3 day block, either in the day or evenings. This is what SummitSkills would expect for courses of this type.
- Related to the type of learners that providers allow to enrol on these courses, are pre-requisite qualifications. Primary data suggests that only 70% of providers currently ask for pre-requisites, while 30% don't. SummitSkills perceives this as a potential problem, as such a policy could lead to unqualified and unskilled learners marketing themselves as 'specialists' in these technologies, but produce sub-standard work. This would give both the sector and these technologies a bad reputation with consumers. SummitSkills believes that all environmental technology courses should have pre-requisite qualifications attached to them that are commensurate with the primary BSE craft skills associated with the technology.
- Where providers do require pre-requisites, SummitSkills would question whether some of those asked for are acceptable as a guarantee of the competence of learners generally within the crafts in the BSE sector.
- Environmental technology courses currently offered to the BSE sector are accredited by a number of certification/accreditation bodies, although as SummitSkills would expect these are currently dominated by BPEC, LOGIC and City & Guilds.

- A significant minority of providers surveyed in this report claimed not to have heard of the Microgeneration Certification Scheme. Not surprisingly therefore, a lot of the courses currently offered by providers are not designed to enable learners to specifically apply for MCS registration.
- Currently providers offer different levels of provision in environmental technologies, with some providers offering weekly courses, and some offering monthly, quarterly, bi-annual and annual courses among others. However the majority of providers offer the provision on demand, which suggests a very irregular pattern of delivery with little training actually taking place.
- Staff to Student Ratios (SSR; the number of learners in relation to the tutor in each class) varies considerably between six and 16 learners with most providers.
- Across most nations and regions, there is an expectation that demand for curriculum in environmental technologies in the BSE sector will grow.
- The majority of providers not surprisingly think that their staff are fully qualified to teach these technologies, although SummitSkills would question whether some of the qualifications stated by providers should be deemed competent alone to deliver environmental technologies to the BSE sector.
- A minority of providers (20%) are not currently aware of the SummitSkills occupational standards for environmental technologies.
- Pass rates currently for environmental technology courses in the BSE sector are high, with the majority of providers having achievement rates of between 87% and 100%.

Table ES1 and ES2 show the demand/supply gap based on current supply and potential demand defined by SummitSkills in stage 2 of a suite of environmental technologies reports (October 2010). Black indicates where supply outstrips demand and bold red where supply is insufficient to meet potential demand.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
2010	2,700	777	1,856	5,935	318	3,504	4,183	588	3,277
2011	3,620	8,634	7,520	1,664	9,121	8,224	3,078	8,818	5,250
2012	9,757	17,913	16,076	2,397	18,180	19,510	9,833	16,831	13,292
2013	9,887	18,287	15,676	2,390	18,284	19,673	9,710	17,037	13,239
2014	7,211	14,336	11,370	792	14,273	13,188	6,298	13,567	9,653
2015	3,987	9,395	7,010	1,439	9,430	7,627	2,802	9,217	5,416
2016	1,574	5,607	3,578	3,067	5,889	3,504	254	6,029	2,230
2017	989	4,709	2,793	3,478	4,992	2,476	400	5,238	1,435
2018	565	4,134	2,326	3,780	4,344	1,765	870	4,695	881
2019	481	3,968	2,153	3,832	4,231	1,618	945	4,576	772
2020	310	3,698	1,938	3,975	3,920	1,278	1,175	4,315	505
<b>Total</b>	<b>35,681</b>	<b>89,904</b>	<b>68,584</b>	21,591	<b>92,346</b>	<b>75,359</b>	24,402	<b>90,911</b>	<b>49,396</b>

ES1: Gap analysis between potential demand and current supply of environmental technology qualifications for the BSE sector by English regions

Demand and supply are based on *the number of learning opportunities offered*, not on the number of individuals that need to be trained. SummitSkills' first report on environmental technologies published in August 2010 demonstrated that employers are likely to require their operatives to be trained in more than one technology, and in all probability three or four technologies.

ES2 shows the same data for the devolved nations:

	Northern Ireland	Wales	Scotland
2010	356	284	4683
2011	3,064	3,497	4,438
2012	5,711	7,264	13,283
2013	5,784	7,461	13,468
2014	4,633	5,899	9,604
2015	3,232	3,874	4,882
2016	2,165	2,344	1,386
2017	1,906	1,973	510
2018	1,714	1,731	99
2019	1,713	1,665	220
2020	1,635	1,550	513
<b>Total</b>	<b>31,913</b>	<b>36,974</b>	<b>42,056</b>

ES2: Gap analysis between potential demand and current supply of environmental technology qualifications for the BSE sector by devolved nation.

Tables ES1 and ES2 show that if the current supply is not increased it is inadequate in all nations and regions of the UK to meet the potential demand. If demand follows the projections suggested by SummitSkills, providers will be unable to meet training demand.

SummitSkills fears that if the supply side is not engaged and developed, excess demand by the sector for training may encourage the proliferation of rogue training providers, or that BSE companies would not undertake training leading to poorly installed kit. This might damage both the reputation of the sector and the environmental technologies in the eyes of consumers.

## Introduction

This report looks at the current supply of environmental technologies training offered by training providers against demand in the UK Building Services Engineering (BSE) sector. This is the third in a suite of three reports arising from research undertaken by SummitSkills on the demand and supply side issues related to the development of environmental technologies training.

## Methodology

In 2010 a survey of 208 training providers in the UK BSE sector was undertaken using structured telephone interviews from a questionnaire devised by the research team at SummitSkills. In each interview, respondents were asked a series of questions relating to the current and future provision planned for environmental technology training.

Based on the data supplied by the training providers, it was possible to speculate on the current potential of the supply side to deliver curriculum in environmental technologies according to current activity. When compared to the Learning Opportunity Demand calculated in Stage 2 of this suite of reports (October 2010) it was possible to perform a gap analysis and determine the potential shortfall in provision for the nations and regions up to 2020.

Although the report uses real numbers, these should be seen as indicative as there are potentially some variations which might be incorporated at any time by any provider. However as will be seen later in this report, the implications are clear, there is simply currently not enough provision to meet potential demand.

Table 1 shows the organisational split of environmental technologies in the survey. There were a number of problems with provider organisations taking part, however SummitSkills believes that the current numbers are adequate to give an accurate assessment of the capabilities of current environmental technologies providers ahead of the National Skills Academy for Environmental Technologies.

Training organisation	Number in survey
Private training provider	68
Further education (FE) college	129
Training broker	0
Employer	0
Training provider within a large employer organisation	8
Other	3
Total	208

Table 1: Analysis of surveyed providers

As might be expected, FE colleges provide the majority of provider participants, which is in line with what SummitSkills would expect, as FE colleges form the largest provider group in the UK offering BSE sector qualifications. No training brokers and employers were found to be present among the 208 training providers surveyed.

Table 2 shows the breakdown of providers surveyed across the devolved nations and English regions. The breakdown is satisfactory for SummitSkills to make regional recommendations. It should be remembered that for Northern Ireland there are only six FE colleges, and therefore although the number looks small, it possibly captures if not the totality of training in the province, then a significant amount.

Region/nation	No. of training providers
Scotland	26
South East	25
South West	24
North West	23
Yorkshire & Humber	19
West Midlands	18
London	18
East Midlands	15
Wales	14
North East	14
East of England	10
Northern Ireland	2

**Table 2: Number of providers surveyed offering environmental technology courses to the BSE sector**

Table 3 shows a breakdown of the data in the devolved nations and English regions by provider type. The data shows a satisfactory spread of provider engagement across all the English regions and the devolved nations, which SummitSkills would argue adds credibility to the quality of data received and allows regionalised and nationalised data analysis.

	Total number of training providers per region/nation	FE college	Private training provider	Training provider within a large employer organisation	Other
East Midlands	7%	5%	1%	<1%	0%
East of England	5%	2%	3%	0%	0%
London	9%	5%	3%	0%	<1%
North East	7%	4%	2%	0%	<1%
North West	11%	8%	3%	0%	0%
Northern Ireland	1%	1%	0%	0%	0%
Scotland	13%	11%	2%	0%	0%
South East	12%	8%	4%	<1%	0%
South West	12%	6%	4%	<1%	<1%
Wales	7%	3%	2%	1%	0%
West Midlands	8%	6%	2%	1%	0%
Yorks & Humber	8%	4%	5%	<1%	0%

**Table 3: Breakdown of providers types across the devolved nations and English regions in this research**

## Current Curriculum Offer

Currently the development of environmental technologies curriculum for the BSE sector remains underdeveloped, as formal qualifications in many of the technologies are under development by SummitSkills with appropriate awarding bodies. Many of the courses therefore are 'full cost' programmes that providers offer to upskill rather than qualify the existing workforce. There are however some qualifications (listed later in this report) that are offered by providers, and which are recognised by the sector, even if they are not currently eligible for public funding.

Table 4 shows the environmental technology areas that providers have identified and which they were offering training.

Energy Efficient Lighting
Solar Heating and Hot water
Renewable Energy Awareness
Part L - Energy Efficiency
Warm Water Underfloor Heating Systems
Ground Source Heat Pumps
Solar Photovoltaic
Combined Heat and Power
Air Source Heat Pumps
Biomass
Gray Water Recycling
Rain Water Harvesting/ Grey Water
Bio Fuel (liquid)
Micro/Small Scale Wind Energy
Fuel Cell Technology
Micro Hydro
Other technology 1
Other technology 2

**Table 4: Current training offered in environmental technologies supplied by providers to the BSE sector, base=208**

Table 5 shows the breakdown of environmental technology provision currently being offered in the English regions. This table triangulates with the stage 1 report (August 2010) in that it suggests that engagement in environmental technologies is highest in solar water and heating. This is reflected in the provision of courses in solar water and hot water.

Table 5 also generally triangulates well with the Stage 1 report regarding the little provision for technologies such as micro hydro and fuel cell, where there is little current engagement by the BSE sector. This suggests that providers are currently

responding well to employer demand.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Solar Heating and Hot water	13%	14%	18%	15%	19%	15%	13%	24%	12%
Solar Photovoltaic	7%	6%	5%	8%	8%	4%	6%	9%	13%
Combined Heat and Power	5%	3%	0%	5%	7%	3%	5%	2%	2%
Micro/Small Scale Wind Energy	2%	3%	2%	3%	2%	1%	2%	0%	4%
Ground Source Heat Pumps	7%	3%	10%	10%	8%	5%	5%	2%	8%
Air Source Heat Pumps	5%	0%	15%	7%	5%	3%	5%	4%	5%
Biomass	4%	0%	0%	3%	2%	1%	3%	0%	3%
Bio Fuel (liquid)	1%	0%	2%	3%	1%	0%	2%	0%	0%
Rain Water Harvesting/	7%	3%	7%	3%	1%	6%	5%	2%	6%
Grey Water Recycling	6%	3%	3%	2%	0%	4%	3%	0%	3%
Micro Hydro	0%	0%	0%	2%	0%	0%	2%	0%	2%
Fuel Cell Technology	2%	0%	2%	2%	0%	6%	2%	0%	0%
Warm Water Underfloor Heating Systems	8%	0%	2%	5%	0%	6%	10%	7%	8%
Part L - Energy Efficiency	15%	17%	18%	10%	20%	25%	13%	27%	10%
Renewable Energy Awareness	11%	17%	7%	17%	11%	9%	15%	16%	9%
Energy Efficient Lighting	2%	11%	2%	3%	4%	3%	4%	4%	3%
Other	6%	19%	8%	0%	1%	9%	5%	2%	13%
None of the above	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 5: Current training offered in environmental technologies supplied by providers to the BSE sector by English region, base= 208 pro rata

Table 6 shows the same data for the devolved nations and, as with table 5, suggests that supply is following the demand identified in the stage 1 report.

	Northern Ireland	Wales	Scotland
Solar Heating and Hot water	11%	17%	13%
Solar Photovoltaic	16%	8%	7%
Combined Heat and Power	5%	3%	4%
Micro/Small Scale Wind Energy	0%	6%	5%
Ground Source Heat Pumps	5%	6%	10%
Air Source Heat Pumps	5%	2%	7%
Biomass	5%	5%	4%
Bio Fuel (liquid)	0%	3%	1%
Rain Water Harvesting/	5%	5%	5%
Grey water recycling	5%	2%	4%
Micro Hydro	5%	3%	1%
Fuel Cell Technology	5%	0%	3%
Warm Water Underfloor Heating Systems	5%	5%	6%
Part L - Energy Efficiency	11%	11%	5%
Renewable Energy Awareness	11%	14%	12%
Energy Efficient Lighting	5%	2%	6%
Other	0%	9%	8%
None of the above	0%	0%	0%

Table 6: Current training offered in environmental technologies supplied by providers to the BSE sector by devolved nation

Table 7 shows the data broken down by provider type. All technologies are dominated by FE colleges and private training providers, which is what SummitSkills would expect, although in-company training organisations appear to be concentrating on solar water and photovoltaic panels. It can be argued this shows where demand for environmental technologies is currently situated, and triangulates with the stage 1 report.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Solar Heating and Hot water	15%	15%	14%	25%	7%
Solar Photovoltaic	8%	7%	9%	17%	3%
Combined Heat and Power	4%	4%	3%	4%	3%
Micro/Small Scale Wind Energy	3%	3%	3%	0%	3%
Ground Source Heat Pumps	7%	8%	7%	4%	7%
Air Source Heat Pumps	5%	5%	6%	4%	7%
Biomass	3%	3%	3%	0%	0%
Bio Fuel (liquid)	1%	1%	1%	0%	3%
Rain Water Harvesting	5%	5%	5%	0%	0%
Grey water recycling	3%	4%	2%	0%	0%
Micro Hydro	1%	1%	2%	0%	0%
Fuel Cell Technology	2%	2%	2%	0%	0%

<b>Warm Water Underfloor Heating Systems</b>	7%	7%	6%	8%	21%
<b>Part L - Energy Efficiency</b>	14%	13%	16%	17%	21%
<b>Renewable Energy Awareness</b>	12%	11%	13%	8%	21%
<b>Energy Efficient Lighting</b>	4%	4%	4%	4%	3%
<b>Other</b>	7%	8%	7%	8%	0%
<b>None of the above</b>	0%	0%	0	0	0%

**Table 7: Current training offered in environmental technologies supplied by providers to the BSE sector by provider type, base= 208**

Table 8 shows the total number of courses offered by providers in the UK in each environmental technology in the academic year immediately preceding this research. The current 'training gap' will be calculated more accurately later in this report, however. It can be seen that the potential gap between what is currently offered and what may be required to meet demand is considerable. It indicates a need for a re-think on provision supply and gives the new National Skills Academy for Environmental Technologies a real challenge from its inception.

<b>Training course</b>	<b>No. of courses offered</b>
Solar Heating and Hot Water	135
Part L - Energy Efficiency	129
Renewable Energy Awareness	109
Solar Photovoltaic	71
Ground Source Heat Pumps	65
Underfloor Heating Systems	63
Other technology 1	55
Air Source Heat Pumps	49
Rain Water Harvesting	43
Combined Heat and Power	33
Energy Efficient Lighting	33
Micro/Small Scale Wind Energy	26
Grey Water Recycling	26
Biomass	24
Fuel Cell Technology	15
Bio Fuel (liquid)	10
Micro Hydro	10
Other technology 2	9

**Table 8: Number of training courses offered by providers in each technology in the academic year immediately preceding the research in the UK, base= 208**

Table 9 shows a breakdown of 'other technologies' 1 and 2 which were identified by providers during the research. Some of these technologies identified by providers

SummitSkills would not recognise as 'environmental technologies' relevant to this report. There is therefore an over-estimation of provision in the calculation currently, as it has not been possible to differentiate at devolved nation and English region level the various courses within the definition of 'other technology' 1 and 2.

<b>Other technology 1</b>
Environmental Sustainability
Diploma in Countryside Management
Wind Energy Technical level; 3
Foundation Degree in Sustainable Construction
Energy Efficiency
Sustainable Water Management for Professional
Fluid Solutions
Green Engineering
City & Guilds 6088 Heating and Ventilation
City & Guilds Energy Efficiency
Part P
Retro Fit Environmental Technologies
Unvented Hot Water Course
Electrical Installation Course
Electrical Installation level 2 -3
City & Guilds 2382 17 Edition
G and C 2330 – 31
PEO level 1
C and G 07
Bio Digestion Installation
Foundation Bio Digestion
Technical Training on Renewable Energy
Foundation Degree in Renewable Energy
Sustainable Construction Practice
Environmental Awareness
Noise Reduction
Environmental Waste and Disposal
Domestic Heat Pumps (Ground and Air Source)
Solid Fuels
City & Guilds 2372 in store photovoltaic
PDA in Renewable Energy
Building Service and Sustainable Engineering
F Gas
Construction Built Environment
Unvented Accreditation for Installers
Housing Design Development for Environmental

Voltage Optimisation Systems
Vented/Unvented Hot Water
Energy Efficiency for Gas Boilers
On/Off Shore Wind
<b>Other technology 2</b>
Exhaust Extraction
Electronic level 1 -2
Electronics Servicing
Epoc
Mechanical Heat Recovery
Mechanical Heat Recovery
Water Regulations Accreditation
BSc in Sustainable Construction
Heat Recovery and Ventilation

**Table 9: Programmes offered by providers in the UK defined with the ‘other technology 1 and 2’.**

Table 10 shows the number of courses offered in all of the environmental technologies (including the ‘other technology’ 1 and 2). The data shows a considerable amount of variation across the regions of the UK, with Yorkshire and Humberside, Scotland and the South West being the best represented, and the East of England and West Midlands being the least represented. The issue with Northern Ireland has already been discussed earlier in this report, however given the large push on environmental technologies in the province the small number of courses is a surprise.

Region/nation	No. of courses available
Yorkshire & Humber	113
Scotland	110
South West	108
East Midlands	95
North West	95
North East	81
South East	80
London	66
Wales	64
West Midlands	46
East of England	36
Northern Ireland	11

**Table 10: Number of training courses offered by providers in each technology in the academic year immediately preceding the research, by devolved nation and English region, base = 208**

Perception of who the courses are suitable for is a very important concept for SummitSkills in relation to the development and marketing of training in environmental technologies to the BSE sector. Table 11 shows the providers of the target market for environmental courses by providers within the English regions, and suggests that generally there is a degree of uniformity of view.

From the providers' perspective the courses are perceived to be generally intended for experienced craft operatives and designers, with a lower percentage identifying the courses as being suitable for 'New Entrants' to the sector.

The large percentage of training providers that answered 'other' are a cause for concern.

SummitSkills would see these qualifications used for upskilling existing experienced craft operatives and integration into formal apprentice programmes for designers, and new entrants to the sector. SummitSkills would be concerned if the category 'other' included the offering of environmental technologies provision to individuals without the requisite experience of the sector, as this might lead to poor installations of environmental technologies on site. This could result in the technologies concerned being brought into disrepute, as happened with the timber-framed housing market in the 1980s.

Earlier in this report, the East of England and West Midlands were the two regions that were the least developed in relation to environmental technologies. It is therefore not surprising that these two regions also have the highest 'other' percentages in table 11. This may suggest that there remains some confusion about the actual audience to who these courses should be marketed.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Experienced heating and plumbing installers and engineers	27%	33%	38%	29%	37%	36%	25%	27%	48%
Experienced electricians	15%	4%	10%	12%	15%	5%	15%	12%	13%
Experienced refrigeration and air-conditioning installers/engineers	11%	17%	10%	18%	10%	3%	15%	10%	5%
Engineering consultants	11%	3%	1%	15%	11%	8%	14%	11%	4%
Architects	13%	1%	5%	8%	8%	11%	5%	12%	2%
New entrants	14%	9%	15%	10%	7%	18%	15%	3%	7%
Other	9%	32%	22%	8%	10%	18%	12%	24%	21%

Table 11: Provider perceptions of the target market for environmental technologies in the English regions, base=208 pro rata

Table 12 shows the same data for the devolved nations, and suggests that there is a degree of homogeneity between the devolved nations and the English regions.

	Northern Ireland	Wales	Scotland
Experienced heating and plumbing installers and engineers	21%	25%	30%
Experienced electricians	21%	17%	13%
Experienced refrigeration and air-conditioning installers/engineers	0%	11%	8%
Engineering consultants	18%	9%	10%
Architects	18%	12%	10%
New entrants	20%	9%	17%
Other	1%	16%	13%

Table 12: Provider perceptions of the target market for environmental technologies in the devolved nations, base = 208 pro rata

Table 13 shows the same data by provider type, and suggests that the main providers, FE colleges and the private training providers are identical in their perception of the market of renewable technologies. The interesting statistic is in the 'other' category of the internal larger employer organisations, which suggests that the larger employers within the BSE sector are beginning to perceive environmental technologies as being a specialism or sub-set of traditional trades for their business purposes.

This development for individual company purposes is understandable, although the main target market for these qualifications must be the upskilling of the traditional craft operatives in the BSE sector to meet general demand, rather than the development of specialist semi-skilled operatives. This would only create another layer of sub-contractors, which could potentially further damage the productivity of the BSE sector. Summit Skills believes in the development of a 'mass-trained' BSE sector in environmental technologies.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Experienced heating and plumbing installers and engineers	31%	31%	31%	36%	23%
Experienced electricians	13%	13%	14%	13%	8%
Experienced refrigeration and air-conditioning installers/engineers	10%	9%	11%	0%	20%
Engineering consultants	10%	10%	10%	0%	20%
Architects	9%	9%	8%	3%	11%
New entrants	13%	14%	9%	13%	20%
Other	14%	14%	16%	36%	0%

Table 13: Provider perceptions of the target market for environmental technologies by provider type, base = 208

Table 14 shows the mode of delivery for environmental courses currently being offered to the BSE sector in the English regions. As might be expected for courses designed to upskill the existing workforce, the courses are either short 2-3 day courses, or evening and weekends to cater to learners who are in employment. This is what SummitSkills would expect to see.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Short term; 2-3 day courses	78%	83%	82%	93%	84%	95%	84%	73%	81%
Evenings	13%	0%	10%	2%	5%	8%	9%	16%	2%
Weekends	13%	0%	8%	2%	0%	6%	0%	16%	2%
Distance learning	0%	0%	2%	2%	0%	0%	16%	0%	0%
Other	20%	17%	17%	7%	18%	10%	15%	11%	18%

Table 14: Mode of delivery for environmental technology courses to the BSE sector in the English regions, base = 208 pro rata

Table 15 shows the same data for the devolved nations, and suggests that the short term 2-3 day block courses remain the most popular mode of delivery of these courses in the devolved nations.

	Northern Ireland	Wales	Scotland
Short term; 2-3 days courses	95%	34%	63%
Evenings	0%	16%	11%
Weekends	5%	33%	19%
Distance learning	0%	5%	1%
Other	0%	12%	6%

Table 15: Mode of delivery for environmental technology courses to the BSE sector in the devolved nations, base = 208

Table 16 shows the data for the mode of delivery of environmental technology courses by provider type. There is a remarkable amount of homogeneity between FE colleges and private training providers, who form the majority of providers of environmental technologies.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Short term; 2-3 days courses	68%	84%	80%	64%	69%
Evenings	8%	11%	9%	0%	0
Weekends	11%	14%	9%	100%	0
Distance learning	4%	3%	3%	24%	26%
Other	9%	17%	1%	16%	5%

Table 16: Mode of delivery of environmental technology courses to the BSE sector by provider type, base = 208

A very important issue for SummitSkills is that courses should be targeted at those learners who have the requisite qualifications in the underpinning craft occupations relevant to the technology they intend to train to install. Unfortunately as can be seen from table 17, in the English regions there are a considerable number of providers not asking for any pre-requisite qualifications. In the stage 1 report in this series (August 2010), data suggested that BSE companies do not see these technologies as trade-specific in relation to installation.

Table 17 would suggest that the supply side may be responding to this phenomenon, by not requiring any pre-requisite qualifications for entry to their courses. This is of considerable concern to SummitSkills, because if this continues it may lead to poor installation of these technologies, which may damage the environmental technologies market in the eyes of the consumer.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Yes	52%	89%	75%	59%	68%	67%	79%	67%	77%
No	48%	11%	25%	41%	32%	33%	21%	33%	23%

Table 17: Percentage of providers in the English regions that require pre-requisite qualifications for entry to specific environmental technology courses, base = 208 pro rata

Table 18 shows the same data for the devolved nations. It suggests that the devolved nations may also have the same problems as the English regions regarding the percentage of providers who are not demanding pre-requisite qualifications for entry to their environmental technology courses.

	Northern Ireland	Wales	Scotland
Yes	89%	58%	73%
No	11%	42%	27%

Table 18: Percentage of providers in the devolved nations that require pre-requisite qualifications for entry on to specific environmental technology courses, base = 208 pro rata

Table 19 suggests that there is hardly any difference in pre-requisite requirements between FE colleges and private training providers.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Yes	70%	70%	69%	76%	66%
No	30%	30%	31%	24%	24%

Table 19: Percentage of providers that require pre-requisite qualifications for entry on to specific environmental technology courses by provider type, base = 208

The data in tables 17, 18 and 19 suggests that there is the potential for a considerable number of learners to receive training in environmental technologies without checks on whether they have the underpinning craft competences to understand the installation of the technology in relation to the overall design of the systems being installed.

An attempt was made in the survey to identify the pre-requisites that might be required. However the comments received (table 20) did not refer to existing

qualifications such as S/NVQs at level 3 in plumbing etc. Instead the providers expanded the types of learners that would be acceptable for entry on to their courses.

It does seem strange to SummitSkills that the pre-requisites for entry to the courses were not stated in terms of S/NVQs etc, and it may be that the question caused some confusion for both interviewees and the interviewer. What is worrying is that some of the providers that stated they required pre-requisites appear to be accepting learners who do not really have the underpinning competences necessary to understand the installation of environmental technologies. The considerable use of 'no comment' by providers in some regions is also particularly worrying, as the question of pre-requisites does not appear to require confidentiality.

Region or devolved nation	The number of providers requiring certain pre-requisites
<b>East Midlands</b>	<b>107</b>
No comment	81
Building regulators and council members.	1
Council members and site managers.	4
Current students and people in the industry, like plumbers, installers and electricians.	1
Firms and heating and electrical companies and people who want to do the course.	5
Local employers that are involved in the industry already.	6
New people who are coming into this market and experienced people.	1
The site supervisors.	1
Those that want solar information.	1
Those that want solar installer information courses and solid fuel apprentices.	1
Those that want solar installer information courses.	5
<b>East of England</b>	<b>36</b>
No comment	9
All types of installer.	7
An unvented hot water qualification and so, therefore, experienced people in the industry.	1
Building controllers.	1
Civil engineers.	1
Experienced adults, in the electrical and technical industry.	6
Hot and unvented hot water qualifications people.	1
Householder people who run houses. Professional plumbers.	1
It's aimed for people within the industry for people who have that qualification such as gas and plumbing qualifications.	1
Managers and administrators, in general.	1
Mixed school, government school, local government, householders builders - wider range of people.	1
New start-ups and those that are on a course and work part-time and electricians.	3
New start-ups and those that are on a course and work part-time.	1
Professional people.	1
Specifiers.	1

<b>London</b>	<b>60</b>
No comment	34
Anyone and everyone, like engineers, for example.	1
B&Q workers.	2
Gas engineers.	1
New and old engineering people.	3
New and old engineers.	1
People in industry that want to upskill, like our employees in the construction industry.	1
People in the trade, who are practicing, installing and selling these goods.	1
People who are doing gas courses.	1
People who install air conditioning and people who are involved in design and who are inspectors.	4
People who want to start in the electrical industry	1
Plumbing operatives and people in related trades, like air conditioning, heating and ventilation and also in gas and heating, who work in that industry.	5
Qualified, experienced electricians.	1
Servicing engineers.	1
The employed and unemployed people, working in the electrical industry.	1
The employed and unemployed, that want to start in the industry.	1
Younger people	1
<b>North East</b>	<b>59</b>
No comment	44
All trades, like electricians, are welcome.	1
Anybody involved in renewable energy.	2
Apprentices.	1
Installers of an electrical nature.	1
It would be anyone who is involved in renewable energy.	9
Practice electricians that have completed the 17 edition and 2391.	1
<b>North West</b>	<b>85</b>
No comment	65
16 years olds and people already in the market.	1
19 year olds, who want to do a foundation degree and are working in the industry, or are new to the industry.	1
Anybody who is interested, really.	1
Brickwork, carpentry, joinery work and a general understanding of plumbing and electrical engineering.	2
Electrical people.	1
Engineering people and the general public.	1
New and old heating engineers.	1
Newly qualified people to the industry, as well as people who've been qualified.	1
Specifiers and the designers and maintainers of solar.	8

The general public.	1
The private companies.	1
They would be here in their final year of a further education course at college.	1
<b>West Midlands</b>	<b>45</b>
No comment	17
Anybody in the market and so it is just like anybody off the street can do this course.	1
Anybody with the relevant qualifications in the industry.	2
Anybody with the relevant qualifications.	1
Anyone with the right qualification in the industry.	4
Central heating installers and gas engineers.	1
Companies' installers, like heating engineers, plumbers and electricians and housing officers, gas engineers and local authorities.	1
Current engineers.	1
Gas engineers	3
Gas registered people.	1
Heating engineers.	1
Internal staff.	1
Level 2 and 3 in the plumbing trade and anyone else in the plumbing trade.	1
Level 3 Installers and in plumbing, gas and anything that they may have in the plumbing trade.	1
Local installers and experienced people.	1
Management positions, like local authorities.	1
People that come to us are building companies and people who want to lean about the industry.	1
Plumbers and electricians, in the industry.	1
Plumbers that have to get experience.	1
Plumbing Level 3 and any other people that are in the plumbing trade.	1
Small-scale companies and one-man band companies, that want to upskill and installers, like plumbing and heating installers and housing officers.	1
Surveyors, builders and B&Q people.	1
They must be experienced in the area of gas or plumbing.	1
<b>Yorks &amp; Humber</b>	<b>113</b>
No comment	76
Any business, from banks to construction.	1
Anybody who deals with gas and unvented water.	2
Anybody, from banks to manufacturers.	1
Anyone who has a Part B.	1
Anyone who is interested in the courses.	1
Anyone who understands a basic design.	1
Building service engineers.	8
Contractors and householders.	1
Gas engineering, HETAS and Oftec.	1

Gas fitters, who have an unvented hot water ticket.	1
Gas fitters.	1
Gas workers and plumbers.	1
Its about up skilling in heating and plumbing engineers	1
National employers and local employees and businesses.	1
New learners and qualified tradesmen.	1
Oftec engineers.	1
People that come round to inspect the buildings.	5
People who have an engineering experience, but trade in another field.	1
Roofers.	1
Sales teams and small business owners.	1
Sales.	1
Specifiers.	1
The recycling industry.	1
They would need to be qualified up to Level 3.	1
Those with experience in heating.	1
<b>Northern Ireland</b>	<b>19</b>
No comment	18
Verifiable experience in managing a technical project of similar scale as micro-hydro / holders of HND in building services or engineering.	1
<b>Scotland</b>	<b>110</b>
No comment	77
All types of Installers, like gas.	7
Anybody.	1
Anyone who is working with oil and gas.	1
Apprentice electrician.	1
Apprentices.	1
Engineering people, in the trade, that have a Gas Safe card.	1
For general awareness.	1
Full-time students.	2
General people and builders.	5
High school kids and apprentices	3
Household and general builders.	1
It's aimed at builders and people that are introducing new technologies into buildings.	1
Plumbing contractors and installation engineers.	1
Plumbing contractors.	3
Qualified engineers.	1
Skilled people.	1
The general public awareness.	1
Those not experienced in engineering.	1

<b>South East</b>	<b>79</b>
No comment	46
19 to 25 year olds, progressing from Level 2.	1
Any interested persons.	1
Apprentices.	3
Gas engineering people, who are experienced.	1
Gas fitters, who are experienced.	1
Gas installers that work in the industry only.	1
It depends on the qualifications that they have and their experience in the trade, as a plumber.	5
Members of the public can and so anyone can go on it, e.g. like companies.	1
People already in the trade looking to update their skills.	13
People in the industry who want to up-skill and plumbers and Electricians.	1
People that are working in the industry.	1
Plumbing and heating engineers and people that want to up-skill.	1
PV systems and PV registration and qualified electricians.	1
Up-skilling plumbing and electronic people in the industry.	2
<b>South West</b>	<b>128</b>
No comment	84
16 to 18 and adults - anyone can do it.	1
Anybody in construction.	1
Anybody, from plumbers to self-builders.	2
Anyone who is interested.	1
Engineers.	1
Industry-related practitioners.	1
Land managers, owners and handlers.	14
Qualified engineers and the people who want a career change.	8
The unemployed and technical, mechanical and electrical people.	1
They have to have a NVQ level 2 in that industry	9
They need to be an installer whether they are new or old.	3
They need to be an installer whether they are new or old. Also they need to have the relevant qualification for the industry.	1
They need to be an installer whether they are new or old. But they must also hold a electrical qualification	1
<b>Wales</b>	<b>64</b>
No comment	39
All sorts of people in the construction industry.	1
Anyone in the building service industry.	2
Anyone who is interested in biodiesel.	1
Anyone who is interested in renewables.	1
Apprentice trainee.	1

Apprentices.	6
Electrical installers, who are coming to the end of their courses.	1
Full-time students, who are coming to the end of their courses.	1
Gas fitters.	1
It can be anyone through the industry, like managers, directors, builders and basic people coming into the industry, like installers.	1
Level 3 in core training in plumbing.	1
NVQ level 3 students.	1
People in the construction trade.	1
People that are in the trade, that are existing heating engineers.	1
People who have the 17 edition in wiring.	1
Qualified engineers.	1
Students are working towards Level 3 in plumbing and they need an unvented qualification.	1
The course is for trainee plumbers.	1
Those with experience in and who are qualified in heating and who have at least up to a Level 2 or 3.	1
<b>Grand Total</b>	<b>905</b>

**Table 20: Identified pre-requisites for entry on to environmental technologies courses in the BSE sector, base = 208**

The issue of pre-requisite entry qualifications for environmental technology courses may become clearer once formal qualifications that satisfy the SummitSkills National Occupational Standards are available through awarding bodies.

Table 21 shows the certification/awarding bodies that providers have environmental technology courses accredited by in the English regions. The results are what SummitSkills would expect, with BPEC having the largest share of the market, followed by Logic and then City & Guilds.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
<b>City &amp; Guilds</b>	10%	42%	20%	5%	33%	10%	20%	12%	7%
<b>Logic certification</b>	0%	14%	5%	9%	19%	11%	16%	5%	16%
<b>BPEC certification</b>	50%	14%	40%	43%	27%	66%	33%	44%	40%
<b>ERS certification</b>	0%	0%	0%	0%	0%	0%	1%	0%	2%
<b>NICEIC certification</b>	7%	19%	5%	2%	1%	6%	13%	21%	0%
<b>ConstructionSkills</b>	1%	6%	8%	0%	1%	0%	9%	2%	1%
<b>Emta Awards Ltd (EAL)</b>	7%	0%	0%	0%	0%	0%	0%	0%	0%
<b>EDR</b>	9%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Your own assessment</b>	5%	6%	13%	34%	1%	0%	2%	9%	18%
<b>Other</b>	7%	0%	8%	0%	5%	4%	4%	7%	11%
<b>None</b>	0%	0%	0%	0%	1%	0%	2%	0%	5%
<b>Don't know</b>	5%	0%	1%	7%	11%	3%	0%	0%	7%

**Table 21: Certification/accreditation body used by providers of environmental technology courses to the BSE sector in the English regions, base = 208 pro rata**

Table 22 shows the same data for the devolved nations, and suggests that while BPEC has the highest percentage of courses accredited with them overall, in Northern Ireland it is City & Guilds that is bigger (although as already pointed out the sample size was small Northern Ireland). The use of Logic courses in the devolved nations appears to be much smaller than in England, although why this should be is not clear.

	Northern Ireland	Wales	Scotland
City & Guilds	68%	10%	10%
Logic certification	0%	0%	10%
BPEC certification	21%	65%	24%
ERS certification	0%	2%	0%
NICEIC certification	0%	2%	1%
ConstructionSkills	0%	2%	0%
EDR	0%	0%	0%
Emta Awards Ltd (EAL)	0%	0%	1%
SQA (Scotland only)	0%	0%	25%
Your own assessment	0%	3%	4%
Other	11%	5%	26%
None	0%	0%	0%
Don't know	0%	13%	0%

Table 22: Certification/accreditation body used by providers of environmental technology courses to the BSE sector in the devolved nations, base = 208 pro rata

Table 23 shows the accreditation bodies used by provider type. The data generally suggests no really large fluctuations in usage between the different types of providers, although private training providers appear to prefer Logic courses more than their FE counterparts, whereas FE colleges use City & Guilds more than private training providers. BPEC usage appears to be uniform in both FE colleges and private training providers.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
City & Guilds	16%	20%	10%	28%	0%
Logic certification	10%	4%	20%	24%	0%
BPEC certification	41%	42%	39%	16%	52%
ERS certification	0%	0%	1%	0%	0%
NICEIC certification	6%	2%	11%	20%	0%
ConstructionSkills	3%	3%	1%	0%	10%
Emta Awards Ltd (EAL)	1%	2%	0%	0%	0%
EDR	1%	2%	0%	0%	0%
SQA (Scotland)	4%	6%	0%	0%	0%
Your own assessment	8%	5%	10%	0%	34%
Other	8%	9%	5%	4%	3%
None	1%	0%	2%	4%	0%
Don't know	3%	5%	1%	4%	0%

Table 23: Certification/accreditation body used by providers of environmental technology courses to the BSE sector by provider type, base = 208

The Microgeneration Certification Scheme (MCS) is a certification scheme for the registration of companies deemed competent to install prescribed environmental technologies. It is interesting to note that as shown in table 24, a large percentage of FE colleges' interviewees claimed not to have heard of the MCS scheme, with a smaller but equally surprising percentage of private training providers.

	FE college	Private training provider	Training provider within a large employer organisation	Other
Yes	58%	78%	88%	67%
No	42%	22%	12%	33%
Don't Know	0%	0%	0%	0%

Table 24: Percentage of providers that have heard of the Microgeneration Certification Scheme (MCS) by provider type, base = 208

Table 25 shows the same data presented by English regions. Lack of knowledge by providers of the MCS system appears to most prevalent in the South East, although it is also high in the West Midlands and the North East respectively.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Yes	80%	70%	80%	64%	87%	48%	71%	55%	74%
No	20%	30%	20%	36%	13%	52%	29%	38%	26%
Don't Know	0%	0%	0%	0%	0%	0%	0%	7%	0%

Table 25: Percentage of providers who have heard of the Microgeneration Certification Scheme (MCS) by English region, base = 208 pro rata

Table 26 shows the same data for the devolved nations, and suggests that the MCS scheme is well settled in Northern Ireland. In Wales the percentage of those who are not aware of the MCS scheme is higher than the English regions. The MCS scheme does apply to Scotland, however SummitSkills believes that the scheme is not deemed 'fit for purpose' currently in Scotland by much of the sector, and therefore the figures for Scotland are not surprising.

	Northern Ireland	Wales	Scotland
Yes	100%	71%	42%
No	0%	39%	58%
Don't Know	0%	0%	0%

Table 26: Percentage of providers who have heard of the Microgeneration Certification Scheme (MCS) by devolved nation, base = 208 pro rata

Table 27 shows the percentage of courses in the English regions approved for MCS registration. The data suggests that with the exception of the North East, currently the majority of courses in environmental technologies offered to the Building Services Engineering (BSE) sector in the English regions are not approved by MCS.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Yes	7%	39%	17%	93%	26%	39%	19%	7%	30%
No	93%	61%	83%	7%	74%	61%	81%	93%	70%

Table 27: Percentage of courses in the English regions approved for MCS registration, base = 208 pro rata

Table 28 shows the same data by devolved nations. It suggests that Wales has the highest percentage of courses approved for MCS registration, while Northern Ireland surprisingly is on the low side, although as already stated, this could be because of the small number of providers that took part. The same trend can however be observed in the English regions.

	Northern Ireland	Wales	Scotland
Yes	11%	31%	15%
No	89%	69%	85%

Table 28: Percentage of courses in the devolved nations approved for MCS registration, base = 208 pro rata

Table 29 shows the same data by provider type, and interestingly it suggests that private training providers are more likely to deliver MCS-approved courses than FE colleges.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Yes	22%	13%	36%	44%	10%
No	78%	87%	64%	56%	90%

Table 29: Percentage of courses by provider type approved for MCS registration, base = 208

Table 30 shows the percentage of MCS registered courses per technology as a proportion of the total. It should be remembered that the number of courses per region is small, and therefore the percentages should be seen as being part of a small total, and not evidence of superior performance per se. A region may show 100% but that may only refer to one course that is MCS registered. Table 30 should therefore be seen as only indicative.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Solar Heating and Hot water	40%	80%	27%	22%	25%	0%	38%	18%	18%
Solar Photovoltaic	13%	100%	67%	0%	43%	0%	63%	25%	47%
Combined Heat and Power	0%	0%	0%	0%	33%	50%	0%	0%	0%
Micro/Small Scale Wind Energy	0%	0%	100%	0%	0%	100%	0%	0%	0%
Ground Source Heat Pumps	25%	100%	17%	0%	0%	75%	0%	0%	0%
Air Source Heat Pumps	40%	0%	11%	0%	0%	100%	28%	0%	17%
Biomass	25%	0%	0%	0%	50%	0%	25%	0%	0%
Bio Fuel (liquid)	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rain Water Harvesting/ Grey Water	0%	0%	0%	0%	0%	40%	33%	0%	34%

Grey water recycling	0%	0%	0%	0%	0%	33%	28%	0%	0%
Micro Hydro	0%	0%	0%	100%	0%	0%	0%	0%	50%
Fuel Cell Technology	0%	0%	0%	0%	0%	0%	0%	0%	0%
Warm Water Underfloor Heating Systems	0%	100%	0%	0%	2/9	0%	8%	0%	34%
Part L - Energy Efficiency	6%	33%	9%	17%	18%	40%	13%	0%	18%
Renewable Energy Awareness	17%	33%	25%	0%	22%	14%	11%	0%	30%
Energy Efficient Lighting	0%	0%	0%	0%	0%	0%	0%	0%	33%
Other	20%	14%	0%	0%	0%	28%	0%	0%	27%
None of the above	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 30: Courses in environmental technologies in the BSE sector which are MCS registered, by English region, base = 208 pro rata

Table 31 shows the same data by devolved nation.

	Northern Ireland	Wales	Scotland
Solar Heating and Hot water	50%	0%	36%
Solar Photovoltaic	50%	0%	25%
Combined Heat and Power	0%	100%	0%
Micro/small Scale Wind Energy	0%	25%	0%
Ground Source Heat Pumps	0%	25%	0%
Air Source Heat Pumps	0%	100%	25%
Biomass	0%	33%	0%
Bio Fuel (liquid)	0%	0%	0%
Rain Water Harvesting/ Grey Water	0%	33%	20%
Grey Water Recycling	0%	0%	25%
Micro Hydro	0%	0%	0%
Fuel Cell Technology	0%	0%	0%
Warm Water Underfloor Heating Systems	0%	33%	14%
Part L - Energy Efficiency	0%	43%	20%
Renewable Energy Awareness	0%	22%	0%
Energy Efficient Lighting	0%	0%	0%
Other	0%	17%	11%
None of the above	0%	0%	0%

Table 31: Courses in environmental technologies for the BSE sector which are MCS registered, by devolved nation, base = 208 pro rata

Table 32 shows the same data cut by provider type, and shows that private training providers generally have a higher percentage of MCS registered courses than FE colleges.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Solar Heating and Hot Water	15%	27%	51%	33%	50%
Solar Photovoltaic	7%	22%	57%	75%	0%
Combined Heat and Power	4%	14%	11%	100%	0%
Micro/small Scale Wind Energy	3%	13%	44%	0%	0%
Ground Source Heat Pumps	8%	10%	55%	0%	50%
Air Source Heat Pumps	5%	21%	33%	0%	50%
Biomass	3%	13%	38%	0%	0%
Bio Fuel (liquid)	1%	0%	1%	0%	0%
Rain Water Harvesting/ Grey Water	5%	7%	40%	0%	0%
Grey Water Recycling	4%	0%	33%	0%	0%
Micro Hydro	1%	0%	33%	0%	0%
Fuel Cell Technology	2%	0%	0%	0%	0%
Warm Water Underfloor Heating Systems	7%	8%	37%	0%	0%
Part L - Energy Efficiency	13%	7%	36%	25%	0%
Renewable Energy Awareness	11%	8%	23%	25%	0%
Energy Efficient Lighting	4%	0%	8%	0%	0%
Other	8%	12%	24%	50%	0%
None of the above	0%	0%	0%	0%	0%

Table 32: Courses in environmental technologies for the BSE sector which are MCS registered by provider type, base = 208

Given the low percentages of courses that are MCS approved and registered, the next question sought to elicit whether providers were aware of any other schemes that endorse environmental technology courses suitable for the building services engineering sector.

However, data in tables 33-35 should be treated with caution, because when asked what these schemes were, providers were not able to supply any answers. This suggests that there is still a considerable amount of confusion among with providers about endorsement and certification schemes.

Table 33 suggests that providers in the English regions are aware of other schemes that endorse environmental technology courses. The West Midlands appears to be least aware of these other schemes, which triangulates with data earlier in this report, which suggests that this region has the least engagement among providers in environmental technologies in the BSE sector.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Yes	27%	40%	33%	43%	43%	32%	21%	11%	37%
No	73%	60%	67%	50%	39%	64%	75%	72%	47%
Don't know	0%	0%	0%	7%	17%	4%	4%	17%	16%

**Table 33: Percentage of providers in the English regions that are aware of other schemes that endorse renewable/environmental technology courses, base = 208 pro rata**

Table 34 shows the same data for the devolved nations, and suggests that Wales has the lowest awareness of other schemes that endorse environmental technologies.

	Northern Ireland	Wales	Scotland
Yes	50%	21%	35%
No	50%	79%	57%
Don't know	0%	0%	8%

**Table 34: Percentage of providers in the devolved nations that are aware of other schemes that endorse renewable/environmental technology courses, base = 208 pro rata**

Table 35 shows the same data by provider type, and suggests that generally private training providers are more aware of other schemes that endorse renewable/environmental technology courses than FE colleges.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Employer
Yes	31%	21%	34%	13%	0%
No	62%	37%	62%	87%	0%
Don't know	7%	6%	4%	0%	0%

**Table 35: Percentage of providers that are aware of other schemes that endorse renewable/environmental technology courses, by provider type, base = 208**

The next question sought to elicit how much providers were charging for courses. It is interesting to note that courses appear to cost more in the West Midlands where curriculum is sparse. However generally there is a relatively even spread of cost across all the English regions.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Under £200	21%	17%	13%	19%	24%	13%	38%	29%	22%
£200-£299	17%	3%	7%	8%	15%	8%	75%	2%	19%
£300-£399	27%	31%	47%	22%	12%	9%	31%	9%	10%
£400-£499	10%	3%	7%	20%	12%	14%	11%	13%	23%
Over £500	7%	6%	20%	10%	18%	13%	19%	31%	7%
Don't know	17%	42%	7%	20%	20%	4%	27%	16%	19%

**Table 36: Cost of environmental technologies courses charged by providers to the BSE sector in the English regions, base = 208 pro rata**

Table 37 shows the same data for the devolved nations. It is interesting to note that courses in Northern Ireland are predominantly either at the cheaper or more expensive end of the price spectrum, whereas in Scotland and Wales the spread is more even and reflective of the English regions.

	Northern Ireland	Wales	Scotland
Under £200	42%	17%	25%
£200-£299	6%	6%	28%
£300-£399	3%	28%	6%
£400-£499	6%	6%	5%
Over £500	42%	11%	28%
Don't know	0%	31%	8%

Table 37: Cost of environmental technologies courses charged by providers to the BSE sector in the devolved nations, base = 208 pro rata

Table 38 shows the same data cut by provider, and suggests that between FE colleges and private training providers, there is a considerable degree of homogeneity on the issue of cost.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Under £200	22%	23%	22%	28%	0%
£200-£299	17%	18%	14%	4%	52%
£300-£399	18%	16%	23%	24%	0%
£400-£499	12%	13%	12%	4%	0%
Over £500	18%	18%	14%	36%	34%
Don't know	13%	12%	15%	4%	14%

Table 38: Cost of environmental technologies courses charged by providers to the BSE sector by provider type, base = 208

A further important consideration is how often the courses are run by the providers, as this gives an indication of both demand and current provider capacity. Returns from the providers in the English regions are shown in table 39, and suggest that currently capacity and demand are low, with the majority of providers that offer courses only putting them on when there is sufficient demand.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Weekly	1%	0%	0%	17%	0%	6%	12%	0%	5%
Monthly	27%	28%	30%	2%	18%	10%	13%	7%	27%
Quarterly	12%	3%	7%	2%	1%	0%	3%	0%	3%
Every 6 months	0%	0%	0%	0%	0%	4%	1%	0%	4%
Once per calendar year	5%	0%	2%	0%	0%	3%	10%	0%	1%
Once during the academic year	0%	3%	25%	0%	5%	0%	0%	0%	0%
On demand	53%	44%	23%	81%	54%	40%	23%	56%	39%
Other	0%	8%	13%	0%	24%	9%	38%	22%	20%
Don't know	2%	8%	0%	0%	0%	0%	1%	16%	0%

Table 39: Delivery frequency of environmental technology provision for the BSE sector in the English regions, base = 208 pro rata

Table 40 shows the same data for the devolved nations, and with the exception of Wales where provision appears to be relatively structured, the devolved nations appear to follow the English regions in only offering provision on demand.

	Northern Ireland	Wales	Scotland
Weekly	0%	0%	13%
Monthly	0%	3%	5%
Quarterly	0%	3%	8%
Every 6 months	0%	2%	0%
Once per calendar year	0%	36%	4%
Once during the academic year	0%	2%	8%
On demand	100%	36%	61%
Other	0%	19%	2%
Don't know	0%	0%	0%

Table 40: Delivery frequency of environmental technology provision for the BSE sector in the devolved nations, base = 208 pro rata

Table 41 shows the same data cut by provider type. The data suggests that private training providers are offering more courses than FE colleges across all provision options given.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Weekly	6%	3%	7%	4%	52%
Monthly	16%	6%	33%	4%	10%
Quarterly	2%	4%	5%	0%	3%
Every 6 months	1%	1%	2%	8%	0%

Once per calendar year	4%	2%	6%	28%	0%
Once during the academic year	5%	8%	0%	0%	0%
On demand	49%	60%	29%	28%	34%
Other	15%	16%	16%	28%	0%
Don't know	1%	1%	2%	4%	0%

**Table 41: Delivery frequency of environmental technology provision for the BSE sector, by provider type, base= 208**

This report seeks to calculate an indicative number for the current supply capacity for environmental technologies in the provider network, and therefore it is important to determine an average Staff to Student Ratio (SSR; the average number of students/learners on each course). Table 42 shows the data from the providers in the English regions. As expected, the ratio is between six and fourteen learners in a class.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
1:1	0%	3%	0%	0%	0%	0%	2%	0%	2%
1:2	0%	0%	0%	0%	8%	0%	0%	0%	0%
1:3	0%	0%	0%	7%	0%	3%	3%	0%	0%
1:4	8%	3%	10%	0%	0%	0%	9%	0%	7%
1:5	0%	0%	3%	2%	0%	20%	2%	0%	2%
1:6	34%	14%	12%	47%	20%	20%	23%	20%	15%
1:7	0%	22%	0%	0%	0%	1%	7%	0%	0%
1:8	37%	28%	12%	5%	52%	23%	10%	22%	30%
1:9	0%	0%	0%	0%	0%	8%	0%	4%	1%
1:10	4%	8%	37%	15%	12%	13%	19%	22%	30%
1:11	0%	0%	0%	0%	0%	0%	0%	0%	0%
1:12	11%	6%	13%	20%	5%	6%	3%	9%	13%
1:13	0%	0%	2%	0%	0%	0%	0%	0%	0%
1:14	0%	0%	0%	0%	2%	0%	11%	2%	0%
1:15	5%	3%	5%	0%	1%	4%	11%	2%	0%
1:16	1%	14%	0%	0%	0%	3%	0%	0%	0%
1:17	0%	0%	0%	0%	0%	0%	0%	0%	0%
1:18	0%	0%	0%	0%	0%	0%	0%	0%	0%
1:20	0%	0%	0%	0%	0%	0%	1%	0%	0%
1:21	0%	0%	0%	0%	0%	0%	0%	0%	0%
1:22	0%	0%	0%	0%	0%	0%	0%	0%	0%
1:23	0%	0%	0%	0%	0%	0%	0%	0%	0%
1:24	0%	0%	0%	0%	0%	0%	0%	0%	0%
1:25	0%	0%	0%	3%	0%	0%	0%	0%	0%
Don't know	0%	0%	7%	0%	0%	0%	0%	18%	0%

**Table 42: Staff to Student Ratio (SSR) of environmental technology provision for the BSE sector in the English regions, base = 208 pro rata**

Table 43 shows the same data by devolved nation, and this mirrors the data in the English regions in relation to the SSR. However a class size of 1:10 seems to be more predominant than in the English regions.

	Northern Ireland	Wales	Scotland
1:1	0%	0%	0%
1:2	0%	0%	0%
1:3	0%	2%	4%
1:4	0%	0%	10%
1:5	0%	0%	1%
1:6	0%	17%	19%
1:7	0%	3%	0%
1:8	16%	21%	2%
1:9	0%	0%	0%
1:10	79%	16%	19%
1:11	0%	0%	0%
1:12	5%	21%	23%
1:13	0%	2%	0%
1:14	0%	3%	4%
1:15	0%	0%	0%
1:16	0%	0%	15%
1:17	0%	0%	0%
1:18	0%	0%	0%
1:20	0%	2%	1%
1:21	0%	0%	0%
1:22	0%	0%	0%
1:23	0%	0%	0%
1:24	0%	0%	0%
1:25	0%	16%	0%
Don't know	0%	0%	3%

Table 43: Staff to Student Ratio (SSR) on environmental technology provision for the BSE sector in the devolved nations, base = 208 pro rata

Table 44 shows the same data by provider type. The data suggests that predominantly smaller classes are to be found with private training providers, which is expected given the larger overheads that FE colleges carry and have to take into account when costing courses for viability.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
1:1	1%	1%	1%	0%	0%
1:2	1%	1%	0%	0%	0%
1:3	2%	1%	3%	0%	0%
1:4	5%	3%	8%	12%	0%
1:5	3%	3%	2%	0%	0%
1:6	22%	21%	26%	4%	0%
1:7	2%	0%	6%	0%	0%
1:8	22%	20%	25%	40%	0%
1:9	1%	1%	1%	0%	0%
1:10	19%	19%	15%	20%	66%
1:11	0%	0%	0%	0%	0%
1:12	12%	13%	7%	24%	34%
1:13	0%	0%	0%	0%	0%
1:14	2%	4%	0%	0%	0%
1:15	3%	5%	1%	0%	0%
1:16	3%	5%	0%	0%	0%
1:17	0%	0%	0%	0%	0%
1:18	0%	0%	0%	0%	0%
1:20	0%	0%	0%	0%	0%
1:21	0%	0%	0%	0%	0%
1:22	0%	0%	0%	0%	0%
1:23	0%	0%	0%	0%	0%
1:24	0%	0%	0%	0%	0%
1:25	1%	0%	3%	0%	0%
Don't know	2%	2%	2%		0%

Table 44: Staff to Student Ratio (SSR) of environmental technology provision for the BSE sector, by provider type, base = 208

Associated with the question of how many learners are currently taken on is the maximum number of learners that a provider is prepared to take on a course because of health and safety, numbers of kit etc. Table 45 shows the data for the English regions, and suggests that the maximum number appears realistically to be sixteen learners.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
2	0%	0%	0%	0%	0%	0%	0%	0%	0%
3	0%	0%	0%	2%	0%	0%	2%	0%	0%
4	6%	3%	0%	0%	0%	0%	0%	0%	0%
5	0%	0%	2%	2%	0%	0%	2%	0%	0%
6	13%	3%	13%	25%	5%	14%	17%	0%	16%
7	0%	0%	0%	0%	0%	0%	6%	0%	0%
8	10%	50%	7%	19%	35%	4%	11%	20%	8%
9	0%	0%	0%	0%	0%	8%	0%	0%	0%
10	15%	19%	22%	3%	24%	6%	9%	11%	60%

12	28%	3%	5%	20%	14%	18%	7%	16%	11%
14	1%	0%	0%	0%	0%	0%	4%	7%	0%
15	9%	0%	5%	5%	0%	4%	0%	7%	0%
16	9%	0%	15%	0%	9%	16%	2%	0%	10%
18	0%	0%	0%	0%	0%	1%	9%	0%	0%
20	5%	0%	0%	0%	1%	0%	2%	0%	0%
24	0%	0%	0%	0%	0%	0%	0%	0%	0%
25	0%	0%	0%	0%	0%	0%	1%	0%	0%
30	0%	0%	0%	17%	0%	0%	0%	0%	0%
32	0%	0%	0%	0%	0%	0%	0%	0%	0%
70	0%	0%	0%	3%	0%	0%	0%	0%	0%
Don't know	4%	22%	32%	3%	12%	29%	28%	40%	10%

**Table 45: Maximum number of learners allowed by providers on environmental technology courses for the building services engineering sector in the English regions, base = 208**

Table 46 shows the same data for the devolved nations. It suggests that in Wales the figure is as high as 24 learners in a group, which seems very high for courses of this type. Generally however the maximum course size is around sixteen learners as in the English regions.

	Northern Ireland	Wales	Scotland
2	0%	0%	0%
3	0%	0%	0%
4	0%	0%	10%
5	0%	0%	0%
6	0%	1%	6%
7	0%	0%	0%
8	16%	4%	10%
9	0%	1%	0%
10	5%	3%	9%
12	11%	45%	25%
14	0%	0%	0%
15	68%	3%	1%
16	0%	0%	15%
18	0%	1%	0%
20	0%	4%	11%
24	0%	36%	0%
25	0%	0%	0%
30	0%	0%	0%
32	0%	0%	1%
70	0%	0%	0%
Don't know	0%	0%	11%

**Table 46: Maximum number of learners allowed by providers on environmental technology courses for the BSE sector in the devolved nations, base = 208 pro rata**

Table 47 shows the same data by provider type. There appears to be a degree of homogeneity between FE colleges and private training providers, with FE colleges having perhaps a slightly higher maximum learner number.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
2	0%	0%	0%	0%	0%
3	0%	0%	0%	0%	0%
4	2%	2%	4%	0%	0%
5	0%	0%	1%	0%	0%
6	11%	10%	14%	0%	0%
7	1%	0%	3%	0%	0%
8	14%	10%	18%	56%	0%
9	1%	1%	1%	0%	0%
10	17%	13%	24%	0%	14%
12	17%	21%	10%	24%	0%
14	1%	1%	2%	0%	0%
15	4%	6%	1%	0%	0%
16	8%	12%	1%	4%	0%
18	2%	2%	0%	4%	0%
20	3%	4%	1%	0%	0%
24	2%	0%	6%	0%	0%
25	0%	0%	0%	0%	0%
30	1%	0%	0%	0%	34%
32	0%	0%	0%	0%	0%
70	0%	0%	0%	0%	0%
Don't know	17%	16%	16%	12%	52%

Table 47: Maximum number of learners allowed by providers on environmental technology courses for the BSE sector by provider type, base = 208

Another important consideration is the achievement rates that the providers report on the environmental technologies courses offered to the BSE sector. As expected from short courses of this type, the achievement rates are predominantly between 86% and 100%.

Table 48 shows the same data for the English regions.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Below 50%	3%	0%	0%	0%	0%	0%	0%	2%	0%
51% to 75%	0%	3%	0%	2%	0%	0%	0%	0%	2%
76% to 85%	0%	0%	2%	0%	1%	5%	5%	0%	8%
86% to 99%	36%	72%	45%	17%	27%	42%	41%	39%	29%
100%	62%	25%	48%	81%	58%	44%	52%	39%	59%
Don't know	0%	0%	5%	0%	14%	9%	2%	20%	2%

Table 48: Percentage achievement rate of environmental technology courses offered to the BSE sector in the English regions, base = 208 pro rata

It is the same story in the devolved nations, with very high achievement rates being obtained for the environmental technology courses in the sector (table 49).

	Northern Ireland	Wales	Scotland
Below 50%	0%	0%	0%
50% to 75%	0%	0%	4%
76% to 85%	16%	9%	7%
86% to 99%	74%	38%	56%
100%	0%	53%	19%
Don't know	11%	0%	14%

Table 49: Percentage achievement rate on environmental technology courses offered to the BSE sector in the devolved nations, base = 208 pro rata

Table 50 shows the same data by provider type, and suggests that private training providers have a slightly higher achievement rate than FE colleges, although the difference is not excessive.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Below 50%	0%	1%	0%	0%	0%
50% to 75%	1%	1%	1%	0%	0%
76% to 85%	4%	5%	3%	24%	0%
86% to 99%	39%	43%	37%	0%	14%
100%	50%	42%	57%	76%	86%
Don't know	6%	9%	3%	0%	0%

Table 50: Percentage achievement rate on environmental technology courses offered to the BSE sector by provider type, base = 208

The curriculum content of environmental technology courses offered to the BSE sector is an important factor, as is the theory-to-practical percentage ratios. From the data received from the providers in the English regions (table 51) the majority of courses have between 26% and 75% theory, which is what SummitSkills would expect, although there are a small number that appear to be theory-based only.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Below 10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
10% to 25%	1%	0%	0%	0%	0%	3%	1%	0%	2%
26% to 50%	45%	47%	44%	22%	27%	41%	65%	24%	14%
51% to 75%	30%	22%	33%	31%	31%	13%	21%	7%	52%
76% to 85%	14%	19%	0%	3%	2%	18%	6%	2%	12%
86% to 99%	3%	3%	5%	7%	15%	8%	2%	16%	0%
100%	7%	8%	5%	19%	13%	13%	5%	16%	17%
Don't know	1%	0%	13%	19%	12%	6%	1%	36%	3%

Table 51: Percentage of theory in environmental technology courses offered to the BSE sector in the English regions, base = 208 pro rata

Table 52, shows the same data for the devolved nations. Interestingly it shows a higher percentage of theory-only courses in Wales and Scotland than in the English regions. Northern Ireland shows a lower theory content than the English regions. Further research is needed to determine why there is this discrepancy between the English regions and the devolved nations.

	Northern Ireland	Wales	Scotland
<b>Below 10%</b>	0%	2%	4%
<b>10% to 25%</b>	68%	31%	24%
<b>26% to 50%</b>	26%	27%	33%
<b>51% to 75%</b>	0%	2%	1%
<b>76% to 85%</b>	5%	5%	12%
<b>86% to 99%</b>	0%	6%	7%
<b>100%</b>	0%	28%	20%
<b>Don't know</b>	<b>0%</b>	2%	4%

**Table 52: Percentage of theory in environmental technology courses offered to the BSE sector in the devolved nations, base = 208 pro rata**

Table 53 shows the same data by provider type. This data is really interesting, as it suggests that courses offered by private training providers are more theoretically-based than those offered by FE colleges generally. Taking into account previous data this means that the majority of the courses offered to the BSE sector are considerably, if not totally, theory based.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
<b>Below 10%</b>	0%	0%	0%	0%	0%
<b>10% to 25%</b>	1%	2%	1%	0%	0%
<b>26% to 50%</b>	36%	40%	29%	16%	52%
<b>51% to 75%</b>	29%	26%	30%	44%	45%
<b>76% to 85%</b>	7%	6%	9%	20%	0%
<b>86% to 99%</b>	7%	6%	8%	4%	3%
<b>100%</b>	10%	8%	13%	16%	0%
<b>Don't know</b>	10%	11%	10%	0%	0%

**Table 53: Percentage of theory in environmental technology courses offered to the BSE sector by provider type, base = 208**

As has been suggested in this report, the current supply of environmental technologies is low, however most of the providers who took part in the survey are planning to increase their current portfolio of provision in the near future.

Table 54 shows the data for this, and suggests that nearly 80% of providers that currently offer environmental technologies to the BSE sector are currently intending to increase the supply of provision. The data is homogeneous for all provider types in the survey.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Yes	79%	81%	79%	63%	34%
No	16%	14%	18%	25%	33%
Don't know	5%	5%	3%	12%	33%

Table 54: Percentage of providers surveyed that offer environmental technology courses to the BSE sector, and intend to increase their portfolio of courses in the near future, by provider type, base = 208

Table 55 shows the same data by the English regions. Providers are intending to increase their portfolio of environmental technology courses in the near future to meet anticipated demand.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Yes	87%	80%	72%	93%	87%	72%	84%	84%	79%
No	13%	10%	20%	0%	13%	4%	12%	5%	21%
Don't know	0%	10%	8%	7%	0%	24%	4%	11%	0%

Table 55: Percentage of providers surveyed that offer environmental technology courses to the BSE sector, and that intend to increase their portfolio of courses in the near future by English region, base = 208 pro rata

The same is true in the devolved nations, although Scotland seems marginally less enthusiastic than the other devolved nations and English regions, as can be seen in table 55.

	Northern Ireland	Wales	Scotland
Yes	100%	86%	65%
No	0	7%	31%
Don't know	0	7%	4%

Table 56: Percentage of providers surveyed that offer environmental technology courses to the BSE sector, and that intend to increase their portfolio of courses in the near future, by devolved nation, base= 208 pro rata

When the providers in the English regions were asked if the demand for environmental technologies had grown in the previous 12 months, the majority claimed they had experienced an increase in demand, or demand had remained stable for courses of this type. However, some providers had experienced a decrease in demand.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Increase	67%	40%	78%	64%	70%	60%	48%	34%	63%
Decrease	7%	30%	0%	21%	0%	8%	12%	17%	16%
Stayed the same	26%	20%	22%	15%	30%	28%	36%	42%	21%
Don't know	0%	10%	0%	0%	0%	4%	4%	7%	0%

Table 57: Demand for environmental technology provision experienced by the providers surveyed in the BSE sector, by English regions, base = 208 pro rata

Table 58 shows the same data for the devolved nations. This suggests that Northern Ireland is very pessimistic about growth in this area, while Wales and Scotland are

more 'bullish' but are not generally as confident as some of the English regions.

	Northern Ireland	Wales	Scotland
Increase	0%	50%	56%
Decrease	50%	14%	8%
Stayed the same	50%	29%	25%
Don't know	0%	7%	4%

Table 57: Demand for environmental technology provision in the BSE sector experienced by the providers surveyed, by devolved nation, base = 208 pro rata

Table 58 shows the same data by provider type. The phenomenon is uniform across providers of all types with little statistical variation.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Increase	67%	70%	78%	50%	100%
Decrease	11%	7%	15%	38%	0%
Stayed the same	19%	20%	21%	0%	0%
Don't know	3%	3%	3%	12%	0%

Table 58: Demand for environmental technology provision by the BSE sector experienced by the providers surveyed, by provider type, base = 208

Notwithstanding the level of demand for environmental technologies over the last twelve months, providers in the English regions expect demand for environmental technology courses to increase up to 2014, as can be seen from table 59 below.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Increase	100%	80%	100%	100%	92%	96%	100%	83%	95%
Decrease	0%	10%	0%	0%	0%	0%	0%	11%	0%
Stayed the same	0%	0%	0%	0%	4%	4%	0%	0%	5%
Don't know	0%	10%	0%	0%	4%	0%	0%	6%	0%

Table 59: Providers' anticipated demand for environmental technology training up to 2014 in the BSE sector, by English region, base = 208 pro-rata

Table 60 shows the same data for the devolved nations, and these results mirror those of the English regions.

	Northern Ireland	Wales	Scotland
Increase	100%	86%	96%
Decrease	0	0	0
Stayed the same	0	14%	4%
Don't know	0	0	0

Table 60: Providers anticipated demand for environmental technology training to 2014 in the BSE sector, by devolved nation, base = 208 pro rata

Table 61 suggests that all provider types are equally confident that the demand for environmental technology curriculum will grow up to 2014.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Increase	94%	95%	93%	88%	100%
Decrease	1%	2%	1%	0%	0%
Stayed the same	2%	2%	3%	0%	0%
Don't know	3%	1%	3%	12%	0%

Table 61: Providers anticipated demand for environmental technology training up to 2014 in the BSE sector by provider type, base = 208 pro rata

Providers were then asked what they felt might drive demand for environmental technology training for the BSE sector. Table 62 suggests that a number of different drivers act on the BSE sector in the English regions, with no one factor being totally dominant.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Fuel costs	20%	10%	11%	14%	22%	28%	29%	28%	47%
Government policy	33%	30%	50%	71%	43%	32%	42%	33%	32%
Local initiatives	0%	0%	0%	7%	4%	8%	0%	0%	0%
Public awareness	33%	20%	39%	21%	17%	20%	38%	33%	26%
Government initiatives	13%	10%	17%	7%	0%	5%	8%	11%	32%
Technology	33%	10%	17%	29%	22%	12%	4%	11%	10%
Availability	0%	0%	6%	0%	4%	4%	0%	6%	0%
Manufacturer awareness	7%	0%	6%	0%	0%	12%	0%	6%	0%
Latest thing	7%	0%	6%	0%	0%	12%	4%	11%	5%
Renewable suppliers	7%	0%	0%	0%	4%	0%	4%	0%	5%
Sustainability	7%	0%	6%	0%	4%	0%	0%	0%	0%
Advertising	0%	0%	6%	7%	0%	8%	0%	0%	0%
Lack of fuel	0%	0%	0%	0%	0%	8%	0%	0%	5%
Energy saving	0%	10%	6%	0%	0%	8%	8%	0%	0%
More jobs	0%	0%	0%	0%	0%	4%	0%	0%	0%
Update skills	7%	0%	0%	7%	0%	0%	0%	0%	0%
Nothing	0%	0%	0%	0%	0%	4%	0%	0%	0%
Other	13%	0%	28%	14%	26%	0%	29%	11%	10%
Refused	0%	0%	0%	0%	4%	0%	4%	0%	0%

Table 62: Potential drivers acting on the BSE sector to seek environmental technologies training in the English regions, base = 208 pro rata

There is a similar spread in the devolved nations (table 63) however, Government initiatives and public awareness generally seem to be more predominant than in the English regions.

	Northern Ireland	Wales	Scotland
Fuel costs	0%	43%	15%
Government policy	50%	57%	38%
Local initiatives	0%	0%	15%
Public awareness	50%	14%	31%
Government initiatives	0%	14%	12%
Technology	0%	21%	27%
Availability	0%	0%	4%
Manufacturer awareness	0%	7%	15%
Latest thing	0%	7%	4%
Renewable suppliers	0%	0%	4%
Sustainability	0%	0%	0
Advertising	0%	0%	4%
Lack of fuel	0%	0%	4%
Energy saving	0%	0%	0
More jobs	0%	7%	12%
Update skills	0%	0%	4%
Nothing	0%	0%	0
Other	0%	14%	15%
Refused	50%	0%	4%

Table 63: Potential drivers to seeking environmental technologies training in the BSE sector, by devolved nation, base = 208 pro rata

There does not appear to be much difference in view between the provider types, as can be seen in table 64.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Fuel costs	25%	21%	32%	50%	0%
Government policy	41%	45%	34%	50%	33%
Local initiatives	4%	5%	3%	0%	0%
Public awareness	26%	26%	24%	38%	67%
Government initiatives	13%	9%	22%	0%	33%
Technology	19%	17%	16%	13%	33%
Availability	2%	3%	2%	0%	0%
Manufacturer awareness	2%	7%	2%	13%	0%
Latest thing	5%	7%	3%	0%	0%
Renewable suppliers	3%	2%	3%	13%	0%
Sustainability	1%	2%	0%	0%	0%
Advertising	2%	2%	4%	0%	0%

Lack of fuel	2%	2%	2%	0%	0%
Energy saving	3%	2%	4%	0%	0%
More jobs	2%	3%	%	0%	0%
Update skills	1%	2%	%	0%	0%
Nothing	2%	2%	3%	0%	0%
Other	38%	25%	19%	0%	0%
Refused	2%	2%	%	0%	0%

Table 64: Potential drivers on the BSE sector to seek Environmental Technologies training by provider type, base= 208

The next question sought to elicit how providers keep up-to-date with developments taking place in environmental technologies in the BSE sector. Table 65 suggests that providers in the English regions currently adopt a range of solutions to keeping up-to-date.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Attend conferences	27%	20%	28%	21%	39%	20%	25%	28%	11%
Attend exhibitions	33%	50%	39%	29%	17%	8%	17%	11%	21%
Through trade press	20%	20%	22%	14%	35%	24%	25%	22%	32%
Training	7%	30%	17%	14%	26%	20%	8%	22%	26%
From internet	27%	30%	33%	14%	17%	24%	25%	17%	21%
CPD	27%	20%	22%	21%	35%	16%	21%	22%	21%
Through exams	7%	10%	17%	21%	4%	20%	17%	6%	0%
Through research	7%	10%	17%	21%	4%	20%	8%	6%	5%
Through SummitSkills	7%	10%	11%	29%	17%	16%	13%	6%	5%
Word of mouth	13%	0%	0%	0%	4%	0%	4%	0%	0%
Publications	7%	10%	28%	14%	13%	16%	21%	22%	21%
Networking	7%	20%	33%	7%	9%	12%	17%	0%	21%
Through lecturer	0%	0%	0%	0%	0%	8%	4%	0%	11%
Through BPEC	7%	0%	6%	0%	9%	0%	4%	11%	0%
In trade	13%	0%	6%	0%	4%	4%	4%	0%	11%
Visits to SummitSkills	13%	10%	6%	0%	4%	0%	0%	0%	0%
Feedback from employers	7%	0%	6%	7%	0%	4%	4%	6%	5%
Newsletters	7%	0%	0%	0%	4%	4%	0%	6%	0%
Through government	13%	0%	6%	0%	4%	0%	4%	0%	0%
Membership	7%	0%	0%	7%	0%	0%	4%	6%	0%
Other	33%	50%	33%	36%	22%	36%	42%	28%	42%
Don't keep up to date	0%	0%	0%	0%	0%	0%	0%	0%	0%
Don't know	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 65: Methods adopted by providers to keep up-to-date with development in environmental technologies in the BSE sector, by English region, base = 208 pro rata

Table 66 shows the same data for the devolved nations, where there is a similar spread of methods used by providers to remain up-to-date with BSE-related environmental technologies.

	Northern Ireland	Wales	Scotland
Attend conferences	17%	3%	14%
Attend exhibitions	17%	7%	8%
Through trade press	0%	7%	8%
Training	17%	10%	7%
From internet	0%	0%	8%
CPD	17%	7%	5%
Through exams	0%	10%	4%
Through research	0%	3%	7%
Through SummitSkills	0%	7%	3%
Word of mouth	17%	0%	1%
Publications	0%	17%	7%
Networking	17%	7%	1%
Through lecturer	0%	0%	0%
Through BPEC	0%	0%	1%
In trade	0%	0%	1%
Visits to SummitSkills	0%	0%	1%
Feedback from employers	0%	3%	1%
Newsletters	0%	7%	0%
Through government	0%	0%	1%
Membership	0%	0%	1%
Other	0%	10%	18%
Don't keep up to date	0%	0%	0%
Don't know	0%	0%	0%

Table 66: Methods adopted by providers to keep up-to-date with development in environmental technologies in the BSE sector, by devolved nation, base = 208 pro rata

Table 67 shows the same data by provider type, and shows the same general patterns of development in both FE colleges and private training providers.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Attend conferences	25%	34%	13%	0%	0%
Attend exhibitions	20%	25%	12%	0%	33%
Through trade press	23%	27%	18%	13%	33%
Training	19%	19%	21%	13%	0%
From internet	22%	19%	31%	0%	0%
CPD	21%	26%	16%	0%	0%
Through exams	13%	12%	9%	25%	67%
Through research	12%	12%	9%	0%	67%
Through SummitSkills	12%	12%	6%	0%	0%
Word of mouth	3%	4%	1%	0%	0%
Publications	19%	12%	28%	50%	0%
Networking	14%	16%	6%	25%	67%
Through lecturer	2%	2%	3%	0%	0%
Through BPEC	2%	4%	4%	0%	0%
In trade	4%	4%	4%	25%	0%
Visits to SummitSkills	3%	4%	1%	0%	0%
Feedback from employers	4%	4%	1%	0%	33%
Newsletters	3%	4%	1%	0%	0%
Through government	3%	2%	4%	0%	33%
Membership	1%	1%	1%	13%	0%
Other	33%	33%	40%	38%	0%
Don't keep up to date	1%	1%	0%	13%	0%
Don't know	<1%	0%	1%	0%	0%

Table 67: Methods adopted by providers to keep up-to-date with development in environmental technologies in the BSE sector, by provider type, base = 208

The final set of questions relate to the competence of the providers surveyed to offer environmental technologies. Table 68 shows the current awareness of SummitSkills occupational standards for environmental technologies by provider type. It suggests that the majority of providers are aware of SummitSkills' occupational standards, although over 20% were not, so further promotion of these standards may be

required by SummitSkills.

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Yes	77%	83%	71%	63%	33%
No	22%	18%	29%	38%	67%

Table 68: Awareness of SummitSkills' occupational standards by provider type, base = 208

It appears from table 69, that it is the North East and South East where knowledge of the occupational standards is the worst. However, generally knowledge of the standards is fairly uniform across the English regions.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Yes	80%	70%	94%	60%	78%	64%	75%	72%	79%
No	20%	30%	6%	40%	22%	36%	25%	28%	21%

Table 69: Awareness of SummitSkills' occupational standards in the English regions, base = 208 pro rata

The data for the devolved nations in table 70 suggests that Scotland has the highest percentage of providers not aware of SummitSkills' occupational standards for environmental technologies.

	Northern Ireland	Wales	Scotland
Yes	100%	93%	73%
No	0%	7%	27%

Table 70: Awareness of SummitSkills' occupational standards in the devolved nations, base= 208 pro rata

The next question sought to evaluate what, if any, formal qualifications tutors had to deliver courses in environmental technologies to the BSE sector. Table 71 suggests that the majority of providers believe that their tutors have the requisite qualifications to deliver this curriculum.

	Total	FE College	Private training provider	Training provider within a larger employer organisation	Other
Yes	90%	88%	93%	100%	100%
No	8%	9%	7%	0%	0%
Don't know	2%	3%	0%	0%	0%

Table 71: Percentage of providers that believe their staff are formally qualified to tutor environmental technology courses, by provider type, base = 208

Table 72 shows that across the English regions, the perception is relatively uniform across the country.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Yes	87%	80%	83%	86%	100%	88%	100%	100%	90%
No	13%	20%	11%	14%	0%	12%	05	0%	5%
Don't know	0%	0%	6%	0%	0%	0%	0%	0%	5%

Table 72: Percentage of providers that believe their staff are formally qualified to tutor environmental technology courses, by English region, base = 208 pro rata

Table 73 shows a similar picture in the devolved nations.

	Northern Ireland	Wales	Scotland
Yes	100%	100%	81%
No	0%	0%	12%
Don't know	0%	0%	7%

Table 73: Percentage of providers who believe that their staff are formally qualified to tutor environmental technology courses, by devolved nation, base = 208 pro rata

Table 74 shows the qualifications that providers believe are satisfactory for delivery of environmental technology provision to the BSE sector. The data suggests that as technologies develop, more training may be needed by tutors to keep up-to-date with trends in environmental technologies. There appears not to be much difference between FE colleges and private training providers, as was the case in the other parts of this report

	Total	FE college	Private training provider	Training provider within a larger employer organisation	Other
Relevant / specific to the field they teach (unspecified)	22%	19%	30%	25%	0%
Industry / trade qualifications (unspecified)	13%	11%	18%	25%	0%
City & Guilds	2%	2%	3%	0%	0%
NVQ	1%	1%	3%	0%	0%
BPEC / Train the Trainer course / certificate	11%	11%	7%	25%	33%
Teaching / trainer qualification	11%	16%	3%	0%	0%
Assessor / verifier / award / certificate	8%	6%	6%	0%	0%
LOGIC certificate	<1%	1%	0%	0%	0%
Energy efficiency qualification	2%	2%	3%	0%	0%
Environmental technology specific	3%	7%	1%	0%	0%
Manager qualification	1%	0%	3%	0%	0%
Other	13%	12%	10%	25%	67%
Don't know	4%	4%	4%	0%	0%
No response	10%	12%	9%	0%	0%

Table 74: Qualifications of main tutor delivering environmental technologies for the BSE sector by provider type, base= 208

Table 75 shows the same data by English region, and suggests a relatively homogeneous spread across the country of the different options relating to qualification levels of tutors.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Relevant / specific to the field they teach (unspecified)	13%	30%	6%	14%	17%	36%	25%	39%	32%
Industry / trade qualifications (unspecified)	13%	30%	22%	21%	8%	12%	17%	17%	5%
City & Guilds	0%	0%	6%	0%	4%	0%	4%	6%	5%
NVQ	7%	0%	0%	0%	0%	8%	0%	0%	0%
BPEC / Train the Trainer course / certificate	13%	0%	11%	7%	8%	4%	8%	22%	16%
Teaching / trainer qualification	13%	10%	6%	21%	4%	12%	25%	0%	5%
Assessor / verifier / award / certificate	7%	0%	6%	0%	4%	4%	4%	0%	5%
LOGIC certificate	0%	0%	6%	0%	0%	0%	0%	0%	0%
Energy efficiency qualification	0%	0%	0%	0%	0%	4%	4%	11%	0%
Environmental technology specific	13%	0%	6%	7%	0%	0%	0%	0%	0%
Manager qualification	0%	0%	0%	7%	4%	0%	0%	0%	0%
Other	0%	10%	3	7%	4%	4%	8%	0%	21%
Don't know	7%	0%	0%	0%	4%	4%	4%	6%	0%
No response	13%	20%	17%	14%	0%	12%	0%	0%	10%

Table 75: Qualifications of main tutor delivering environmental technologies provision to the BSE sector, by English region, base = 208 pro rata

Table 76 shows the same data by devolved nation. It is interesting to note that while Scotland and Wales have a similar spread to the English regions, in Northern Ireland tutor qualifications are BPEC, Train the Trainer, and teacher/trainer qualification. However there are only two providers in the survey, which goes some way to explaining this.

	Northern Ireland	Wales	Scotland
Relevant / specific to the field they teach (unspecified)	0%	21%	12%
Industry / trade qualifications (unspecified)	0%	14%	4%
City & Guilds	0%	0%	0%
NVQ	0%	0%	0%
BPEC / Train the Trainer course / certificate	50%	7%	12%
Teaching / trainer qualification	50%	7%	8%
Assessor / verifier / award / certificate	0%	0%	12%
LOGIC certificate	0%	0%	4%

<b>Energy efficiency qualification</b>	0%	0%	4%
<b>Environmental technology specific</b>	0%	14%	4%
<b>Manager qualification</b>	0%	0%	0%
<b>Other</b>	0%	29%	19%
<b>Don't know</b>	0%	7%	4%
<b>No response</b>	0%	0%	19%

**Table 76: Qualifications of main tutor delivering environmental technologies course for the BSE sector by devolved nation, base = 208 pro rata**

## Supply Side Calculations

Table 77 shows the approximate number of environmental technology courses that are taking place by English region. This table is derived from table 3 and 5.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Solar Heating and Hot water	10	10	13	11	14	11	101	16	9
Solar Photovoltaic	5	4	4	6	6	4	5	6	9
Combined Heat and Power	5	2	0	4	4	2	4	2	2
Micro/Small Scale Wind Energy	2	2	2	2	2	2	2	0	4
Ground Source Heat Pumps	6	3	8	8	6	4	4	3	6
Air Source Heat Pumps	5	0	7	5	4	4	5	4	4
Biomass	2	0	0	2	2	2	2	0	2
Bio Fuel (liquid)	2	0	0	2	2	2	2	0	2
Rain Water Harvesting/ Grey Water	6	3	7	3	1	5	3	1	5
Grey Water Recycling	3	1	3	1	1	3	3	1	3
Micro Hydro	0	0	0	1	0	0	1	0	1
Fuel Cell Technology	1	0	1	1	0	5	2	0	0
Renewable Energy Awareness	8	14	5	14	7	6	11	12	6
<b>Total</b>	<b>54</b>	<b>39</b>	<b>52</b>	<b>59</b>	<b>49</b>	<b>48</b>	<b>53</b>	<b>45</b>	<b>51</b>

Table 77: Current approximate number of training courses offered in environmental technologies to the BSE sector by English region, base = 208 pro rata

Table 78 shows the same data for the devolved nations derived from table 3 and 6.

	Northern Ireland	Wales	Scotland
Solar Heating and Hot water	9	12	10
Solar Photovoltaic	11	6	5
Combined Heat and Power	4	2	2
Micro/Small Scale Wind Energy	0	4	4
Ground Source Heat Pumps	4	5	8
Air Source Heat Pumps	4	3	4
Biomass	6	6	6
Bio Fuel (liquid)	0	2	1
Rain Water Harvesting/ Grey Water	3	3	3
Grey Water Recycling	3	1	3
Micro Hydro	4	2	1
Fuel Cell Technology	2	0	3
Renewable Energy Awareness	8	10	8
<b>Total</b>	<b>58</b>	<b>56</b>	<b>58</b>

Table 78: Current approximate number of training courses offered in environmental technologies to the BSE sector by devolved nations, base = 208

In table 79, an approximation of the number of courses delivered in each potential provision option is shown. This table is derived from the sums of table 77 and 39 (described earlier in this report). As can be seen from table 79, in the English regions a considerable number of courses are presumed to be on demand only because of the data received, and therefore potential supply problems are apparent. Those providers that only provide courses on demand will probably not have either the physical resources or the staff capable of being transferred to full-time weekly delivery of curriculum, were demand to require it.

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorks & Humber
Weekly	1	0	0	10	0	6	6	0	3
Monthly	15	11	16	1	9	7	7	3	14
Quarterly	6	2	4	1	1	0	2	0	2
Every 6 months	0	0	0	0	0	4	1	0	2
Once per calendar year	3	0	1	0	0	2	5	0	1
Once during the academic year	0	2	13	0	3	0	0	0	0
On demand	29	17	12	47	26	23	12	25	20
Other	0	3	7	0	10	6	19	10	10
Don't know	0	4	0	0	0	0	1	7	0

Table 79: Frequency and number of courses potentially delivered in environmental technology provision to the BSE sector in the English regions, base = 208 pro rata

Table 80 shows the same data for the devolved nations. With the exception of Wales, where provision appears to be relatively structured, the devolved nations appear to follow the English regions in only offering provision on demand. In relation to Northern Ireland, although there were only two providers, this could potentially cause major problems with providers responding to a sudden upsurge in demand.

	Northern Ireland	Wales	Scotland
Weekly	0	0	8
Monthly	0	2	3
Quarterly	0	2	5
Every 6 months	0	1	0
Once per calendar year	0	20	2
Once during the academic year	0	1	5
On demand	58	20	34
Other	0	10	1
Don't know	0	0	0

Table 80: Frequency and number of courses potentially delivered in environmental technology provision for the BSE sector, by devolved nation, base = 208 pro rata

## Potential Current Supply Side Capacity

Based on the data in this report, it is possible to speculate on the current potential of the supply side to deliver curriculum in environmental technologies, based on current activity.

Although the report uses real numbers, these should be seen as indicative only, as there are potentially some variations which might be incorporated at any time by any provider. However as will be seen later in this report, the implications of the data are clear - there is simply currently not enough provision to meet potential

Although the Staff to Student Ratio (SSR) varies between six and sixteen for ease of calculation an SSR of one tutor to fourteen learners is used. This SSR is based on previous knowledge of employers' cut off numbers for courses i.e. if there were less than 14 learners then a senior manager had to agree to the course running.

This section is now broken into the English regions and devolved nations.

The SSR is 1:14 and the academic year is 45 weeks. This is based on a potential standard extended academic year of 52 weeks minus seven weeks guaranteed holiday for academic staff in FE colleges. These courses are likely to be offered outside of the standard 29 week academic year for Full-Time Learners. These assumptions apply for all the English regions and devolved nations.

Within this calculation, it is not possible to allow for on-demand courses, as these may not be regular in an academic year, and indeed may go many academic years without running. This means that supply might be slightly underestimated as a result, although it is not possible to determine by how much. The same is also the case for courses described as 'other'.

### East Midlands

	Courses	Calculation	Total
Weekly	1	X45 x14	630
Monthly	15	X12 x14	2,520
Quarterly	6	X 4 x 14	336
Every six months	0	0	0
Once per calendar year	3	X 1 x14	42
Once during the academic year	0	0	0
On demand	29	0	0
Other	0	0	0
Don't Know	0	0	0
<b>Total</b>			<b>3,528</b>

Table 81: Indicative learning opportunities in the East Midlands in environmental technologies in the BSE sector

## East of England

	Courses	Calculation	Total
Weekly	0	0	0
Monthly	11	$\times 12 \times 14$	1,848
Quarterly	2	$\times 4 \times 14$	112
Every six months	0	0	0
Once per calendar year	0	0	0
Once during the academic year	2	$\times 1 \times 14$	28
On demand	17	0	0
Other	3	0	0
Don't Know	4	0	0
<b>Total</b>			<b>1,988</b>

Table 82: Indicative learning opportunities in the East of England in environmental technologies in the BSE sector

## London

	Courses	Calculation	Total
Weekly	0	0	0
Monthly	16	$\times 12 \times 14$	2,688
Quarterly	4	$\times 4 \times 14$	224
Every six months	0	0	0
Once per calendar year	1	$\times 1 \times 14$	14
Once during the academic year	13	$\times 1 \times 14$	182
On demand	12	0	0
Other	7	0	0
Don't Know	0	0	0
<b>Total</b>			<b>3,108</b>

Table 83: Indicative learning opportunities in London in environmental technologies in the BSE sector

## North East

	Courses	Calculation	Total
Weekly	10	$\times 45 \times 14$	6,300
Monthly	1	$\times 12 \times 14$	168
Quarterly	1	$\times 4 \times 14$	56
Every six months	0	0	0
Once per calendar year	0	0	0
Once during the academic year	0	0	0
On demand	47	0	0
Other	0	0	0
Don't Know	0	0	0
<b>Total</b>			<b>6,524</b>

Table 84: Indicative learning opportunities in the North East in environmental technologies for the BSE sector

## North West

	Courses	Calculation	Total
Weekly	0	0	0
Monthly	9	X12 x 14	1,512
Quarterly	1	X 4 x 14	56
Every six months	0	0	0
Once per calendar year	0	0	0
Once during the academic year	3	X1 x14	42
On demand	26	0	0
Other	10	0	0
Don't Know	0	0	0
<b>Total</b>			<b>1,610</b>

Table 85: Indicative learning opportunities in the North West in environmental technologies in the BSE sector

## South East

	Courses	Calculation	Total
Weekly	6	X45x14	3,780
Monthly	7	X12x14	1,176
Quarterly	0	0	0
Every six months	4	X2 x14	112
Once per calendar year	2	X1x14	28
Once during the academic year	0	0	0
On demand	23	0	0
Other	6	0	0
Don't Know	0	0	0
<b>Total</b>			<b>5,096</b>

Table 86: Indicative learning opportunities in the South East in environmental technologies in the BSE sector

## South West

	Courses	Calculation	Total
Weekly	6	X4 5 x14	3,780
Monthly	7	X 12 x14	1,176
Quarterly	2	X 4 x 14	112
Every six months	1	X2 x14	28
Once per calendar year	5	X1 x14	70
Once during the academic year	0	0	0
On demand	12	0	0
Other	19	0	0
Don't Know	1	0	0
<b>Total</b>			<b>5,166</b>

Table 87: Indicative learning opportunities in the South West in environmental technologies in the BSE sector

## West Midlands

	Courses	Calculation	Total
Weekly	0	0	0
Monthly	3	X 12x 14	504
Quarterly	0	0	0
Every six months	0	0	0
Once per calendar year	0	0	0
Once during the academic year	0	0	0
On demand	25	0	0
Other	10	0	0
Don't Know	7	0	0
<b>Total</b>			<b>504</b>

Table 88: Indicative learning opportunities in the West Midlands in environmental technologies in the BSE sector

## Yorkshire and Humberside

	Courses	Calculation	Total
Weekly	3	X 45 x 14	1,890
Monthly	14	X 12 x 14	2,352
Quarterly	2	X 4 x 14	112
Every six months	2	X 2 x 14	56
Once per calendar year	1	X 1 x14	14
Once during the academic year	0	0	0
On demand	20	0	0
Other	10	0	0
Don't Know	0	0	0
<b>Total</b>			<b>4,424</b>

Table 89: Indicative learning opportunities in Yorkshire and Humberside in environmental technologies in the BSE sector

## Northern Ireland

	Courses	Calculation	Total
Weekly	0	0	0
Monthly	0	0	0
Quarterly	0	0	0
Every six months	0	0	0
Once per calendar year	0	0	0
Once during the academic year	0	0	0
On demand	56	0	0
Other	0	0	0
Don't Know	0	0	0
<b>Total</b>			<b>0</b>

Table 90: Indicative learning opportunities in Northern Ireland in environmental technologies in the BSE sector

The total when carrying out this exercise in Northern Ireland is 0, although SummitSkills is aware that considerable work in environmental technologies has taken place within the province. It is possible that the other providers who chose not to take part in this research may account for the training that has taken place in the province.

## Wales

	Courses	Calculation	Total
Weekly	0	0	0
Monthly	2	X 12 x 14	336
Quarterly	2	X 4 x 14	112
Every six months	1	X 2 x 14	28
Once per calendar year	20	X 1 x 14	280
Once during the academic year	1	X 1 x 14	14
On demand	20	0	0
Other	10	0	0
Don't Know	0	0	0
<b>Total</b>			<b>770</b>

Table 91: Indicative learning opportunities in Wales in environmental technologies in the BSE sector

## Scotland

	Courses	Calculation	Total
Weekly	8	X 45 x 14	5,040
Monthly	3	X 12 x 14	504
Quarterly	5	X 4 x 14	280
Every six months	0	0	0
Once per calendar year	2	X1 x14	28
Once during the academic year	5	X 1 x 14	70
On demand	34	0	0
Other	1	0	0
Don't Know	0	0	0
<b>Total</b>			<b>5,922</b>

Table 92: Indicative learning opportunities in Scotland in environmental technologies in the BSE sector

## Demand and Supply Side Gap Analysis

This report now looks at the total gap between the indicative current supply in the nations and regions of the United Kingdom, and compares these with the current demand to determine the current under or oversupply of provision to potential demand.

The learning opportunity supply is currently based on a steady state supply mechanism. Obviously subsequent iterations of this report can identify increases or decreases in supply side provision. The learning opportunity demand numbers are taken from scenario 2 of SummitSkills' stage 2 report published in October 2010.

Oversupply of provision to potential demand is shown in black and undersupply is shown bold in red.

### North West

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	1,292	1,610	318
2011	10,731	1,610	<b>9,121</b>
2012	19,790	1,610	<b>18,180</b>
2013	19,894	1,610	<b>18,284</b>
2014	15,883	1,610	<b>14,273</b>
2015	11,040	1,610	<b>9,430</b>
2016	7,499	1,610	<b>5,889</b>
2017	6,602	1,610	<b>4,992</b>
2018	5,954	1,610	<b>4,344</b>
2019	5,841	1,610	<b>4,231</b>
2020	5,530	1,610	<b>3,920</b>
<b>Total</b>	110,056	17,710	<b>92,346</b>

Table 93: Gap analysis in the North West

The data from the North West suggests that there is currently a significant potential short fall in provision, which will need urgent attention if the demand mirrors that which is determined in this report.

### North East

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	589	6,524	5,935
2011	4,860	6,524	1,664
2012	8,921	6,524	<b>2,397</b>
2013	8,914	6,524	<b>2,390</b>
2014	7,316	6,524	<b>792</b>
2015	5,085	6,524	1,439
2016	3,457	6,524	3,067
2017	3,046	6,524	3,478
2018	2,744	6,524	3,780
2019	2,692	6,524	3,832
2020	2,549	6,524	3,975
<b>Total</b>	50,173	71,764	21,591

Table 94: Gap analysis in the North East

In the North East, current provision will be inadequate in the years 2012-2014 respectively, although current provision in the modes currently operated would be satisfactory to cover demand in all other years.

## Yorkshire and Humberside

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	1,147	4,424	3,277
2011	9,674	4,424	5,250
2012	17,716	4,424	13,292
2013	17,663	4,424	13,239
2014	14,077	4,424	9,653
2015	9,840	4,424	5,416
2016	6,654	4,424	2,230
2017	5,859	4,424	1,435
2018	5,305	4,424	881
2019	5,196	4,424	772
2020	4,929	4,424	505
<b>Total</b>	98,060	48,664	49,396

Table 95: Gap analysis in the North West

Provision in Yorkshire and Humberside is currently insufficient to meet potential demand in the region. Some cross fertilisation may take place with the North East to relieve some of the pressure, however significant work is needed to meet potential demand by the supply side in the region.

## East Midlands

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	828	3,528	2,700
2011	7,148	3,528	3,620
2012	13,285	3,528	9,757
2013	13,415	3,528	9,887
2014	10,739	3,528	7,211
2015	7,515	3,528	3,987
2016	5,102	3,528	1,574
2017	4,517	3,528	989
2018	4,093	3,528	565
2019	4,009	3,528	481
2020	3,838	3,528	310
<b>Total</b>	74,489	38,808	35,681

Table 96: Gap analysis in the East Midlands

Current provision in the East Midlands is inadequate to meet the potential demand needs of the BSE sector in the region. A considerable amount of work is needed by the supply side to meet potential need, particularly in 2012 and 2013.

## West Midlands

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	1,092	504	588
2011	9,322	504	8,818
2012	17,335	504	16,831
2013	17,541	504	17,037
2014	14,071	504	13,567
2015	9,721	504	9,217
2016	6,533	504	6,029
2017	5,742	504	5,238
2018	5,199	504	4,695
2019	5,080	504	4,576
2020	4,819	504	4,315
<b>Total</b>	<b>96,455</b>	<b>5,544</b>	<b>90,911</b>

Table 97: Gap analysis in the West Midlands

The provision in the West Midlands is inadequate for the sector to meet potential demand for environmental technologies in the region. The supply side needs to engage more firmly in these technologies to gear up for increased demand.

## East of England

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	1,211	1,988	777
2011	10,622	1,988	8,634
2012	19,901	1,988	17,913
2013	20,275	1,988	18,287
2014	16,324	1,988	14,336
2015	11,383	1,988	9,395
2016	7,595	1,988	5,607
2017	6,697	1,988	4,709
2018	6,122	1,988	4,134
2019	5,956	1,988	3,968
2020	5,686	1,988	3,698
<b>Total</b>	<b>111,770</b>	<b>21,868</b>	<b>89,904</b>

Table 98: Gap analysis in the East of England

As with other English regions, the supply side in the East of England is inadequate on current volumes to cope with a sudden upsurge in demand for provision.

## South East

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	1,592	5,096	3,504
2011	13,320	5,096	8,224
2012	24,606	5,096	19,510
2013	24,769	5,096	19,673
2014	18,284	5,096	13,188
2015	12,723	5,096	7,627
2016	8,600	5,096	3,504
2017	7,572	5,096	2,476
2018	6,861	5,096	1,765
2019	6,714	5,096	1,618
2020	6,374	5,096	1,278
<b>Total</b>	131,415	56,056	75,359

Table 99: Gap analysis in the South East

Supply currently appears to be inadequate to meet the needs of the sector in the South East region.

## London

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	1,252	3,108	1,856
2011	10,628	3,108	7,520
2012	19,184	3,108	16,076
2013	18,784	3,108	15,676
2014	14,478	3,108	11,370
2015	10,118	3,108	7,010
2016	6,686	3,108	3,578
2017	5,901	3,108	2,793
2018	5,434	3,108	2,326
2019	5,261	3,108	2,153
2020	5,046	3,108	1,938
<b>Total</b>	102,772	34,188	68,584

Table 100: Gap analysis in London

Supply currently appears to be inadequate to meet the needs of the sector in London.

## South West

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	983	5,166	4,183
2011	8,244	5,166	<b>3,078</b>
2012	14,999	5,166	<b>9,833</b>
2013	14,876	5,166	<b>9,710</b>
2014	11,464	5,166	<b>6,298</b>
2015	7,968	5,166	<b>2,802</b>
2016	5,420	5,166	<b>254</b>
2017	4,766	5,166	400
2018	4,296	5,166	870
2019	4,221	5,166	945
2020	3,991	5,166	1,175
<b>Total</b>	<b>81,228</b>	<b>56,826</b>	<b>24,402</b>

Table 101: Gap analysis in the South West

In the South West demand is predicted to outstrip supply between 2011-2016 assuming the growth of demand is according to the SummitSkills stage 2 report model (October 2010).

## Scotland

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	1,239	5,922	4683
2011	10,360	5,922	<b>4438</b>
2012	19,205	5,922	<b>13283</b>
2013	19,390	5,922	<b>13468</b>
2014	15,526	5,922	<b>9604</b>
2015	10,804	5,922	<b>4882</b>
2016	7,308	5,922	<b>1386</b>
2017	6,432	5,922	<b>510</b>
2018	5,823	5,922	99
2019	5,702	5,922	220
2020	5,409	5,922	513
<b>Total</b>	<b>107,198</b>	<b>65,142</b>	<b>42056</b>

Table 102: Gap analysis in Scotland

It would appear from the SummitSkills model that current provision is inadequate in Scotland to meet employer potential demand between 2011 and 2017.

## Wales

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	486	770	284
2011	4,267	770	3,497
2012	8,034	770	7,264
2013	8,231	770	7,461
2014	6,669	770	5,899
2015	4,644	770	3,874
2016	3,114	770	2,344
2017	2,743	770	1,973
2018	2,501	770	1,731
2019	2,435	770	1,665
2020	2,320	770	1,550
<b>Total</b>	<b>45,444</b>	<b>8,470</b>	<b>36,974</b>

Table 103: Gap analysis in Wales

Wales has a considerable policy commitment to environmental technologies within which the BSE sector has a major part to play. Based on the SummitSkills model, there seems little possibility that the sector will be able to play the role that is designated for it, as demand will completely outstrip supply capacity.

## Northern Ireland

	Learning Opportunity Demand	Learning Opportunity Supply	Gap Analysis
2010	356	0	356
2011	3,064	0	3,064
2012	5,711	0	5,711
2013	5,784	0	5,784
2014	4,633	0	4,633
2015	3,232	0	3,232
2016	2,165	0	2,165
2017	1,906	0	1,906
2018	1,714	0	1,714
2019	1,713	0	1,713
2020	1,635	0	1,635
<b>Total</b>	<b>31,913</b>	<b>0</b>	<b>31,913</b>

Table 104: Gap analysis in Northern Ireland

It would appear from the SummitSkills model that current provision is inadequate in Northern Ireland to meet employer potential demand.

**Dr. Michael Hammond**  
**Research Manager**  
**SummitSkills**