Skills for a Low Carbon Economy: apprenticeships in the East Midlands

A report for *emda*

EMFEC

March 2011

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March 2011

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Content

Acknowledgements

This report has been produced by EMFEC for the East Midlands development Agency (emda) and AoC East Midlands Skills for a Low Carbon Economy Task Group. It draws on data gathered via primary and secondary research examining Apprenticeships and the Low Carbon Economy in the East Midlands. EMFEC acknowledges and thanks all those who contributed to the case studies, participated in the survey and provided information.

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About EMFEC

EMFEC is a registered company, limited by guarantee with charitable status. Established in 1992, following incorporation of colleges of Further Education, EMFEC is an independent and neutral organisation whose existence is underpinned by the objective to help its customers, members and stakeholders to achieve excellence. Initially focusing support on the Further Education (FE) sector, this has expanded in recent years to include all providers of learning and skills.

EMFEC firmly believes that the best and highest quality provision for learners can be more effectively achieved through partnership and the sharing of professional knowledge, intelligence, experience and expertise. The company is uniquely placed to carry out this role. EMFEC:

- is a business that receives no direct funding or grants. The company understands the imperatives that impact on skills development and engagement with the business that its customers and stakeholders support

- works for, and with, the learning and skills professionals. Its services are developed and delivered with real understanding of the needs and issues of the learning and skills sector

- delivers a range of services through an internal team of staff with direct experience of working in the learning and skills environment – in colleges, schools, awarding bodies, training providers and professional bodies. This team of staff is supported by an extensive network of Associate Trainers, all of whom are skilled practitioners in their area of expertise, bringing with them innovation, relevance and proven solutions to address the needs of customers and stakeholders

- represents the learning and skills sector at a local, regional and national level and, by being in touch with key decision makers, gathers intelligence to ensure that its customers are aware of, and understand, current initiatives and thinking.

EMFEC has led and supported a number of national and regional research projects and has established a reputation for providing an objective and balanced view. Examples of research and associated reports published by the Company include:

- Illustrations of Different Local Organisational Structures for Collaborative Delivery of Post-14 Education and Training (2003) - commissioned by the National LSC and (the then) Department for Education and Skills

- Investigating Collegiate Funding (2004) - test bed development commissioned by Birmingham and Solihull LSC and delivered in partnership with Principal Learning Ltd

- Vocational Skills for the Engineering and Manufacturing Sector in Birmingham and Solihull (2005) – research and initial feasibility study commissioned by Birmingham and Solihull LSC

- Discretionary Funding (2006) – commissioned by Birmingham and Solihull LSC and delivered in partnership with Principal Learning Ltd.

- Work-based Learning and Higher Level Skills (2008) – research commissioned by the LSC to investigate the barriers faced by work-based learning providers to offer higher level skills training.

- Management Information Systems East Midlands Learning Providers – commissioned by JISC RSC-EM.

Terms of Reference

The project is part of wider work plan activity delivered through the EMFEC/AoC East Midlands FE Low Carbon Task Group. The group was set up with the aim of ensuring that the East Midlands' Further Education sector develops an exemplary, innovative and comprehensive approach to delivering skills in order to drive the transition to a low carbon economy.

This particular work strand aims to explore the development of a regional low carbon apprenticeship scheme. In particular it will involve liaison with Sector Skills Councils, colleges/training providers and the National Apprenticeship Service to assess the potential and viability of a regional low carbon apprenticeship scheme. The work will identify common skills sets between existing Apprenticeship Frameworks and new and emerging frameworks with elements of low carbon linkage, to assess what might be required. It may be that the most appropriate mechanism is not a separate low carbon apprenticeship scheme, as there is more value in adding 'low carbon activity' to existing schemes (e.g. in engineering, construction, etc.). The work will look at both the demand for low carbon apprenticeships and current provision within existing schemes.

Project objectives are to:

- undertake research to explore the potential for the development of a regional low carbon apprenticeship scheme or the 'low carbonisation' of existing schemes
- inform and support the development of a new Framework for low carbon apprentices
- stimulate interest in local carbon apprentices and (indirectly) increase the numbers of those participating in apprenticeship schemes.

At the national level, there remains a commitment to the low carbon agenda from the Coalition Government. The targets set out in the Low Carbon Transition Plan (published by the previous Government) remain valid, and the UK is therefore committed to meet the target of emission cuts of 18% on 2008 levels by 2020, and source 15% of energy from renewable sources by 2020. Meeting these targets requires not just investment and support for companies in the emerging low carbon marketplace, but support for wider action to ease the transition from a high to a low carbon economy. This action has to include activity to equip the workforce with the right skills for a low carbon economy. The Government is committed to expanding Apprenticeship schemes and making them more accessible to learners and employers.

At the regional level, the Regional Skills Priorities Statement has highlighted the importance of providing the right skills to support the low carbon and environmental sectors. The work of the FE Task Group is a fundamental part of taking this forward, with the project providing a key strand of the FE task group work plan.

Beneficiaries of the research will ultimately be providers and learners who will be able to undertake some form of low carbon Apprenticeship or have low carbon included in existing frameworks.

The research contributes to the energy and resources strand of the Regional Economic Strategy, in particular it fits with the priority actions of reducing the demand for energy and resources, utilising renewable energy technologies, and exploiting low carbon technologies. It also contributes to the Employment, Learning and Skills strand by engaging colleges with businesses (priority action 1a).

Methodology

This report examines the current situation in relation to low carbon related Apprenticeships in the East Midlands. The report is based on primary and secondary research. Primary research resulted from direct contact via questionnaires and surveys. Secondary data was gathered through a literature review of information.

The primary and secondary research took place over a relatively short period of time, between January and March 2011. A questionnaire was sent to 17 colleges throughout the East Midlands. At the end of the survey, only 16 providers had responded. However, the resulting report provides a guide to the views of learning providers. Representative case studies were used to highlight some of the findings. FE Colleges were asked to provide information on the provision of Apprenticeship frameworks linked to low carbon/renewables in the following sectors:

- Building Products Occupations
- Building Services Engineering
- Construction
- Electricity Industry
- Electro-technical
- Engineering
- Engineering Construction
- Engineering Technology
- Glass Industry Occupations
- Heating, Ventilating and Refrigeration
- Housing
- Industrial Applications
- ICT
- Motor Vehicle
- Nuclear Decommissioning
- Passenger Transport
- Plumbing
- Retail
- Sustainable Resource Management
- Transport & Logistics
- Waste Management
- Water Industry
- Wind Turbine Operations

Framework titles were selected from the National Apprenticeship Service list of available Apprenticeships.

All the level 2 and 3 frameworks related to low carbon available nationally are shown in Appendix A. The tables were researched and included in January 2011, prior to the new Specification of Apprenticeship Standards for England (SASE).

The research and resulting report seek to provide a balanced view to inform the development of future strategy and activity and include examples of good practice, as well as identifying some of the barriers and challenges.

The report (based upon the position in March 2011) concludes with a number of key observations and conclusions designed to inform the way in which future options for low carbon Apprenticeships, or the low carbonising of existing Apprenticeships, are developed and implemented.

Introduction

A low carbon economy is defined as an economy "which has a minimal output of greenhouse gas emissions into the biosphere, but specifically refers to the greenhouse gas carbon dioxide." The aim of a low carbon economy is to integrate a country's production and markets (including manufacturing, agriculture, transportation and power-generation for example) with technologies that produce resources and materials with minimal greenhouse gas emission.

The UK is committed to legally binding targets to reduce greenhouse-gas emissions under the Kyoto Protocol and European Union Climate Change Programme. Specifically, the UK is committed to cutting 12.5% of greenhouse gas emissions (between the years 2008-2012) under the Kyoto Protocol; reducing CO^2 emissions by 26% (by 2020) under the Climate Change Act 2008; and reducing greenhouse-gas emissions by 80% (by 2050) under the Climate Change Act 2008. Target reductions are relative to the base year of 1990.

As the world's population grows and fossil fuel reserves and natural resources diminish, there is a need to move to a low carbon economy on a global scale, to minimise environmental impact and foster sustainability. Organisations in the public and private sectors have a responsibility for change and must proactively seek improvement in economic, social and environmental performance in order to be sustainable, contribute to the low carbon economy and reduce costs. In the UK, successive governments, local authorities, businesses and the community are required to reduce waste through recycling and reuse; use low carbon energy methods and sources; improve energy efficiency; source local foods and materials; and comply with environmental initiatives.

The Energy Act 2008 updated legislation resulting from the Energy White Paper "Meeting the Energy Challenge" of 2007. The Energy Act indicates the availability of new technologies (for example Carbon Capture and Storage) and emerging renewable technologies; relates to the UK's changing requirements for secure energy supply (such as offshore gas storage) and serves to protect the environment. The Act, together with the Planning Act 2008 and the Climate Change Act 2008, underpins long-term energy and climate change strategy. The Act covers offshore gas supply infrastructure; renewables; feed-in tariffs; decommissioning offshore renewables and oil and gas installations; improving offshore oil and gas licensing; nuclear waste and decommissioning costs**;** offshore transition; smart metering**;** Renewable Heat Incentive**;** and housekeeping.

The Energy Bill of 2010/11, which has reached the report stage in the House of Lords, is designed to provide for change in the provision of energy efficiency for homes and businesses, and make improvements to secure, low carbon energy supplies and fair competition in energy markets. The Bill also relates to energy companies promoting low carbon emissions and reduced home-heating costs.

In 2009, the Government's Chief Scientific Adviser, Sir John Beddington, asked the Committee on Climate Change to "review the adequacy of the UK's research and innovation arrangements for delivering technologies required to meet the UK's climate change objectives." The Committee's report, 'Building a Low Carbon Economy – the UK's Innovation Challenge,' built on previous analysis of technologies required to meet the 2050 target to reduce emissions by 80% relative to 1990 levels. The Committee assessed current technology challenges and UK capabilities to support technology development, and recommended priorities for Government support. The report recommended that the Government should develop a long-term strategy for the UK economy in line with the 2050 emissions target in the Climate Change Act based on three key actions:

- Develop and deploy offshore wind, marine, carbon capture and storage for power generation, aviation technologies, and electric vehicle technologies
- Deploy nuclear power, advanced insulation materials, heat pumps and CCS for energy intensive industries

- Research and develop hydrogen fuel cell vehicles, technologies in agriculture and industry, third generation solar PV technologies, energy storage and advanced biofuels technologies.

The East Midlands

The East Midlands is a diverse region. The third largest region in England, it is made up of six counties; Derbyshire, Leicestershire, Lincolnshire, Rutland, Nottinghamshire and Northamptonshire. It has a population of 4.28 million and is spread over an area of 15,008 kilometres.

East Midlands Development Agency research shows that, "Employment (in the region) in upper tier occupations is significantly lower than national average, whilst in lower tier occupations (limited skills levels) is higher than average". This may indicate the reason lower employer demand for skills in the East Midlands exists.

The Integrated Regional Strategy (East Midlands Regional Assembly) has four main themes around which it set objectives;- sustainable development; environment; economic and spatial. The environment objectives determine the region's commitment to manage, enhance and conserve energy and the environment.

The National Employer Skills Survey for England 2009 (NESS09) published in August 2010 by the UK Commission for Employment and Skills (UKCES) provides details of the skills situation in England based on responses from over 79,000 employers. The data shows that the recruitment of young, new labour market entrants straight from education increases with the size of the organisation. Organisations with 100 or more staff were more likely to recruit graduates from HE than school or college leavers aged 16 to 18. Organisations with between 25 and 99 employees were equally likely to have recruited graduates from HE and 17 to 18 year-olds; whilst organisations with fewer than 25 employees were more likely to have recruited 17 or 18-year-olds than 16 year olds or recent graduates.

In the survey, employers were asked which skills they found difficult to obtain (where there were skill-shortage vacancies). Results show that three in five (62%) of all skill shortage vacancies were technical, practical and job-specific skills.

The results of the survey also show that employers often use training as a means to compensate for vacancies which are hard to fill. 9% of organisations increased training for existing staff, 7% increased spending on trainee programmes.

On questions relating to skills gaps, results show that there is a particular concentration in skilled trade occupations in the agricultural, mining and quarrying and construction sectors.

Employers in the agricultural and construction sectors had a concentration of skills gaps in elementary occupations. The research found that skills gaps vary in cause and type by occupation. The most common cause of skills gaps for all occupational groups is a lack of recent recruitment. For staff at managerial level, the second most common cause of skills gaps is the organisation's failure to ensure training. Other skills gaps were the result of inability to keep up with change and up-skill the workforce. Approximately half the employers surveyed felt there was a need to up-skill the workforce to keep pace with new legislative or regulatory requirements; the development of new products and services or the introduction of new technologies/ equipment, or new working practices. Around a third also felt that the need to up-skill was a result of competitive pressure. Legislation was the most commonly reported incentive for up-skilling by most employers, except in the very largest organisations with 500 or more staff, where the introduction of new working practices was mentioned more often.

Interestingly, employers in the primary, manufacturing, construction, retail and transport sectors were less likely to expect the need to up-skill staff during the 2009-10 period. In construction, electricity, gas and water supply, agriculture and manufacturing, employers thought skilled trades were second most likely (after managers) to need up-skilling.

The NESS09 discovered that employers in the East Midlands were least likely to have

formal business planning and staff development and training in place. 35% did not have a business plan, training plan or budget. Nationally, 2.8 million employees had received training in the previous 12 months and 24% of all trainees had been trained towards a nationally recognised qualification.
A third of all employers was training at least one member of staff towards a recognised qualification or had done so in the previous 12 months. Significantly, the amount of training leading to a nationally recognised qualification decreased among employers in sectors covered by Constructionskills and Summitskills.

In the section on Apprenticeships, the research showed there was good awareness of government-funded Apprenticeships (over 90% of employers had heard of them) but awareness of the different levels/types of Apprenticeship (Advanced, Higher and Adult) was much lower. An awareness of all types of Apprenticeship was strongly linked to the size of the organisation.

NESS09 results show that 8% of organisations offered Apprenticeships, but only 4% had staff undertaking an Apprenticeship at the time. Interestingly, larger employers were more likely to offer Apprenticeships, but Apprentices made up a higher proportion of the workforce of smaller companies. As a result, perhaps, of traditional views and practices, it seems Apprenticeships are more likely to be offered to those aged under 25 than those 25 or over, and to new recruits rather than existing staff. 30% of larger organisations (500+ staff), offered Apprenticeships and 22% employed at least one. In smaller organisations (fewer than 5 staff) 5% offered Apprenticeships and 2% employed them.
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Employers in the construction, electricity, gas and water sectors were the most likely to have staff undertaking Apprenticeships. Of employers represented by Summitskills, 26% offered Apprenticeships and 18% had Apprentices; for IMI (automotive) the figures were 20% and 12% respectively; for SEMTA, 14% and 8% and for Constructionskills, 10% and 5% respectively. SSC sectors least likely to offer or have Apprentices were more likely to be in service professions. Apprentices were more concentrated in organisations in the Summitskills sector, with 52.5 Apprentices per 1,000 employees, followed by IMI (19.9 per 1,000), SEMTA (12.1) and Constructionskills (11.5). Interestingly, Summitskills and Constructionskills sector employers employed 10% (each) of all Apprentices in England; and Constructionskills employers employ 5% of the total workforce nationally.

Developing Skills and Qualifications

The Climate Change Act requires businesses and properties to reduce their carbon emissions over 3 yearly periods by 26-32% from 2009 to 2020; reducing energy use and costs. Decarbonising industry and services will require building on existing STEM-based skill sets and, when new skills are needed, developing new qualifications. Schools, colleges, universities, businesses and sector bodies need to respond to demands speedily and flexibly. There will be an ever increasing demand for Apprentices with appropriate skills, particularly at skilled technician and intermediate professional level (3 and 4). The government plans to deliver an additional 35,000 advanced and higher Apprenticeships to young adults aged 19 to 30 (over two years) from September 2010; including co-funding the delivery of 1,000 Apprenticeships a year to support decommissioning and new-build in the nuclear energy sector, and 2,500 Apprenticeships in the wind energy sector. The National Apprenticeship Service (NAS) has identified the renewable energy sector as one of its priorities for Apprenticeship development.

The Confederation of British Industry 2009 Employer Survey identified a shortage of STEM graduates, a shortage of STEM skills at all levels within the workforce and a lack of STEM technicians and graduates in the energy sector. Similarly, the Department for Innovation, Universities and Skills (DIUS) 2009 mentions shortages of marine engineers, mechanical and electrical engineers in its STEM survey. The National Skills Academy Power, in the 2009 'Mapping Renewables Skills' report, concluded that an ageing workforce and deficiencies in STEM skills will affect the renewables/low carbon sector now and in the future; particularly as the sector grows and expands.

In some low carbon sectors, a lack of trainers with specialist skills or a lack of specialist equipment could potentially cause quality issues with the standard of training available. Many technicians are trained by the manufacturers of equipment, as the manufacturer has the most to gain from investing in the facilities to deliver the training. This very specific training is potentially limiting and non-transferable and does not encompass or grow the skills in system design; skills which are equally vital to a low carbon economy.

Broader and more generic training is generally the province of learning providers, but centres may be reluctant to invest in course materials, resources and facilities, as initial outlay may be costly and cohorts of learners small. The lack of equipment and trained teachers could result in inferior quality training.

Dwindling resources have brought about the need for change, and to educate and train the workforce to adapt and comply is essential to the global economy. Learning providers are responsible for training the current and future workforce to design, install, maintain and work in a low carbon economy and training programmes and resources must be fit for purpose. When estimates indicate that solar photovoltaic electricity will deliver environmentally friendly electricity to over one billion people and make environmental savings of 900 million tonnes of carbon dioxide by 2020, the need to train and equip the workforce is paramount.

However, there are skill shortages in many areas of the economy, not necessarily as a result of lack of demand. As Alison Wolf describes in the Wolf Report; "English education is not generating enough people with quantitative skills at various levels."

The report noted that in the past few years, "..there has been a 20% decline in the number of places (in construction) for young people in colleges, although student demand for places is increasing. In some parts of the country, there is an acute shortage of Apprenticeship places. British construction companies meanwhile employ large numbers of skilled immigrants who have trained under different systems."

The Role of Sector Skills Councils

Sector Skills Councils develop National Occupational Standards that clearly set out the competences required by trades and professions. Sector Skills Councils work with Awarding Organisations, certification bodies and training providers to develop qualifications for existing workers and Apprentices and to develop short awareness courses for employers.

By actively engaging with employers, training providers and government to identify future training needs, Sector Skills Councils will play a key role in developing National Occupational Standards and qualifications which embrace the Low Carbon agenda, as they have a responsibility for ensuring the training infrastructure helps employers develop a workforce able to contend with sustainability and low carbon.

Summitskills, the Sector Skills Council for building services engineering, has identified the need for skilled personnel to respond to government incentives such as Feed-in Tariffs (2010) and the Renewable Heat Incentive (Spring 2011); and to changes in building regulations and zero carbon targets for new homes. As a Sector Skills Council, they have a wide-ranging remit for low carbon which includes the specification, design, installation, commissioning, repair and maintenance of environmental technology systems. These environmental technologies include bio-fuels; combined heat and power; heat pumps; mechanical heat recovery ventilation; micro hydro generation systems; micro wind energy; solar photovoltaics; solar water heating and water harvesting and recycling.

Summitskills recognises that most environmental technologies build on existing skills sets and jobs by up-skilling the workforce. Summitskills are aware that up-skilling the workforce to encompass environmental technologies will provide businesses with a significant advantage over competitors; and at present, there are insufficient businesses to meet demand. The lack of appropriate skills may result in the 'buying-in' of overseas expertise.

Constructionskills, the Sector Skills Council and Industry Training Board for the construction industry, has a major role in ensuring the sector is able to deliver a low carbon future, as 47% of the UK's carbon emissions are created from the energy used in construction and the built environment. Current legislation dictates that all new homes are to be zero-carbon by 2016; all new buildings are to be zero-carbon by 2019; and 7 million homes will have retro-fit 'makeovers' by 2020.

The specialist and technical skills needed in the construction and built environment sector require training and qualification development to include low carbon for new builds and for refurbishment. Constructionskills are working with other Sector Skills Councils in the industry (the Built Environment Skills Alliance) to meet these requirements.

Energy and Utility Skills (EU Skills) the Sector Skills Council for gas, power, waste management and water industries, recognises that low carbon technologies are extensions to existing industries and activities, rather than new industries, and that the up-skilling of core skills will meet requirements. EU Skills has identified that up-skilling the current workforce and re-skilling (e.g. redundant workers) are critical to delivery. The expectation is that there will be a low number of direct 'low carbon' jobs in most sectors, but there is potential for significant growth in specific sectors such as offshore wind energy; marine (wave and tidal) energy and Carbon Capture and Storage.

Asset Skills, the Sector Skills Council for facilities management, housing, property and planning, have developed low carbon skills training in commercial and domestic property, aimed at facilities managers, property and energy managers, energy assessors and suppliers. As building regulations are geared to improving the energy efficiency on new buildings, the sector's workforce needs to know and understand how to maintain and manage them to meet the low carbon agenda. Asset Skills is developing qualifications (up to level 4) and short CPD courses to train sector staff in energy advice

and efficiency, carbon reduction and renewable technologies.

LANTRA, the Sector Skills Council for Environmental and Land-based Industries, has assessed skills needs to help achieve a low carbon economy and recognises that land-based industries can change skills and practices to manage resources, benefitting their businesses and climate change.

SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies, works with employers to determine current and future skills needs and provide short and long term skills solutions. SEMTA identifies change needed in education and skills policy and practice to increase productivity. SEMTA represents aerospace; automotive; bioscience; electrical; electronics; maintenance; marine; mathematics; mechanical; metals and engineered metal products; and supports low carbon and composites skills.

In response to the consultation, "Meeting the Low Carbon Skills Challenge" (June 2010), SEMTA stressed the importance of making public funding available for re-skilling, including second qualifications at levels 3 and 4 in key low carbon technical areas; and expressed the hope that the Qualifications and Credit Framework would provide unit funding for qualifications and units related to generic low carbon skills so individuals can top up their existing skills.

"The Low Carbon Cluster Sector Skills Assessment Report" was produced in 2009 in response to the government's low carbon agenda and commitments. The cluster comprises 11 Sector Skills Councils and 1 Industry Training Board: -

- Asset Skills (*facilities management, housing, property and planning*)
- Cogent (*bioscience, chemical, nuclear, petroleum, polymer)*
- Constructionskills (*construction*)
- Engineering Construction Industry Training Board
- Energy & Utility Skills (*electricity, gas, waste and water)*
- GoSkills (*passenger transport)*
- Proskills (*process and manufacturing*)
- Semta (*science, engineering and manufacturing technologies)*
- Skills for Logistics (*freight logistics industry*)
- Skillfast-UK (*fashion and textiles*).

The report focuses on the following:

- Decarbonising the power industry
- Large-scale renewable power generation
- Development of new nuclear energy capacity
- Energy from waste
- Carbon capture and retrofitting carbon capture
- Decarbonising industry
- Improved energy efficiency
- Reduced emissions and wastage
- Alternative fuels (hydrogen, biofuels, etc)
- Low carbon processing
- Land management and the natural environment
- Decarbonising the transport sector
- Low carbon engines and vehicles
- Fuel efficiency
- Air traffic management
- Hybrid vehicles
- Modal shift
- Decarbonising buildings
- Retrofitting existing buildings (energy efficiency)
- Zero-carbon homes (new build)
- Retrofitting commercial buildings (energy efficiency)
- Micro-renewables.

The report made a number of valuable recommendations, which are far-reaching and beyond the scope of Sector Skills Councils and sector employers alone. Some of the recommendations suggest a sea-change in the perceptions of young people at a very early age and throughout school life; specifically, changing young people's perceptions of low carbon industries, addressing the lack of diversity in the current workforce, and increasing the number of women in the sector. The report suggests pre-school intervention is crucial to creating positive attitudes towards STEM subjects and that there is a collective responsibility for engendering enthusiasm from government, employers, institutions, policy-makers, funders and other stakeholders.

The Wolf Report 2011 identifies Sector Skills Councils as government funded "organisations intended to articulate employer requirements," yet describes Apprenticeship frameworks as "highly specific in terms of their demands, including which qualifications may be used."

Apprenticeships

Apprenticeships are a structured programme consisting of an appropriate work-based qualification such as a National Vocational Qualification (NVQ) at Level 2, Level 3 or Level 4; a technical qualification relevant to the specific Apprenticeship; Key Skills or Functional Skills; and other qualifications or requirements relevant to the occupation and specified by the sector, such as Health & Safety or working practices. Apprentices are employed and training takes place in the workplace ("on-the-job"). Off-the-job training may be day release, or a number of days in a block at a local college or specialist training provider, or a site visit from a trainer in a dedicated training room. There are over 200 types of Apprenticeships across many sectors; currently 85,000 employers offer Apprenticeships. There are three levels of Apprenticeship for young people (over 16) and adults:

- Intermediate Apprenticeships (level 2)
- Advanced Apprenticeships (level 3)
- Higher Apprenticeships (level 4).

The National Apprenticeship Service contributes to the cost of training for all Apprenticeships. The size of the contribution for training varies depending on the sector and age of the candidate. For 16-18 yrs, the contribution is 100% of training; for 19-24 yrs, it is up to 50%; and for aged 25 plus, a contribution towards the cost of training is made depending on the sector.

From 1 October 2010, the new minimum wage for Apprentices aged 16 to18, and for 19 year olds in their first year of an Apprenticeship, is £2.50 per hour. The recommended minimum weekly wage is £95. Many employers still perceive the cost as prohibitive and perceive lack of time and/or money as a barrier to training employees. During times of recession and economic uncertainty, training of any kind, including apprenticeships, becomes a low priority. It is widely recognised that this is a short term view, as the stagnation of skills development is detrimental to an organisation's competitiveness.

Statistical First Release Data from the Data Service (Department for Business, Innovation & Skills, 27 January 2011) provides information on Apprenticeship starts and achievement in the UK. The volume of Apprenticeship starts (UK) in 2009/10 was 279,700, an increase of 16.6% compared to 2008/9.

In 2009/10 there were:-

- 190,500 level 2 Apprenticeship starts (20.2% increase on previous year)
- 87,700 level 3 Advanced Apprenticeship starts (7.9% increase on previous year)
- 1,500 Higher Level Apprenticeships (level 4+).

Learners under 19 years of age started 116,800 Apprenticeship frameworks (17.5% increase).
19-24 years started 113,800 Apprenticeship frameworks (34.3% increase).
25+ years started 49,100 Apprenticeship frameworks (12.1% fall).

The volume of Apprenticeship framework achievements in 2009/10 was 171,500, an increase of 19.6% on 2008/9.

In 2009/10 there were:-

- 111,900 level 2 Apprenticeship framework achievements (14% increase on previous year)
- 59,400 Advanced Apprenticeship framework achievements (31.4% increase)
- 200 Higher Level Apprenticeship framework achievements.

Learners under 19 achieved 73,100 Apprenticeship frameworks (7.9% increase).
19-24 years achieved 64,200 Apprenticeship frameworks (10.9% increase).
25+ years achieved 34,300 Apprenticeship frameworks (almost double 2008/9).

An Intermediate Apprentice is likely to earn £65,000 more over a lifetime than someone taking the NVQ route; and an Advanced Apprentice is likely to earn £105,000 more over a lifetime than a level 3 NVQ trained person.

In the East Midlands, Apprenticeships (16-18, 19-24 and 25+) by Residency and Contractor

are not growing at the national rate. In Nottingham City and Nottinghamshire, Apprenticeships have declined and numbers are lower than the rest of the East Midlands. This is particularly worrying as the region lags behind England as a whole. Currently, there are 1000 Apprenticeship vacancies in the East Midlands. The government is committed to Apprenticeships for employed people, and Programme Led Apprenticeships are to be phased out. Interestingly, the East Midlands has the second highest level of Programme Led Apprenticeships.

The government of Scotland recently announced (February 2011) an investment of £1 million on 500 Apprenticeships in the country's low carbon and energy industries. However, there is still a long way to go to meet an earlier target of the creation of 25,000 modern Apprenticeships in the sector in 2011/12. Scotland's major power company, Scottish and Southern Energy, recruits around 100 Apprentices every year. In 2010, the UK's first Apprenticeship for wind turbine technicians was launched in Scotland, alongside the Low Carbon Skills Fund, designed to help up-skill the workforce in the sector.

The Wolf Report highlights the fact that unlike other European countries, England has a network of additional specialist 'training providers;' involving three organisations in an apprenticeship; thus creating levels of administrative charges on an Apprenticeship.

The Wolf Report also identifies Apprenticeship frameworks as "extremely rigid," as they do not allow for "responsiveness to local conditions and employer requirements." The consequence of rigid frameworks and lack of response to local conditions results in a failure to promote progression for young people. This is counterproductive to government ambitions to have 40% of the workforce to level 4 in line with Leitch's recommendations.

At present, some technical certificates at level 2 and 3 have not been replaced on the QCF for non-employed learners, for example, plumbing and electro-technical; however replacements exist for employed learners. As the qualifications have not been approved by the Sector Skills Council (Summitskills) they cannot be accredited by Ofqual; as Ofqual require QCF compliance/SSC approval. Many employers have taken on young people on completion of a full-time college course in the past, but a lack of programme-led Apprenticeships could potentially diminish the pool of skills.

An increase in adult Apprenticeships (employers using the Apprenticeship route for existing employees) has resulted in a decrease in the number of 16-18 year olds starting Apprenticeships. This problem may be further exacerbated by the raising of the participation age, as more young people enter the training market but do not have the skills or experience to secure employment.

Apprenticeship Training Agencies

An ATA (Apprenticeship Training Agency) is in effect a government-funded employment agency for Apprentices. ATAs place apprentices with host employers. ATAs also provide support for Apprentices seeking new employment if the host employer cannot offer a continuing placement or employment. The ATA recruits and employs the Apprentice, then invoices the host employer for the Apprentice's services.

ATAs provide easier, more cost effective and responsive access to Apprentices. The TUC has worked closely with the National Apprenticeship Service to ensure the rights of Apprentices are protected, particularly Apprentices from ATAs, as there is a danger the host employer perceives the Apprentice as temporary additional help.

Unions seek to protect the rights of Apprentices and to ensure good quality standards and fairness in terms of pay and conditions. Unionlearn urges its members to ensure that Apprenticeships offer a high quality experience and should include sufficient time off for training, adequate workplace supervision and mentoring; and meet the minimum requirements of the Specification of Apprenticeship Standards for England (SASE).

Unions are also concerned about appropriate rates of pay for Apprentices. The current

minimum for Apprentices who are not eligible for the minimum wage is £95 per week. Unions are urged to seek higher rates of pay for Apprentices, as someone receiving only £95 per week is not eligible to make National Insurance contributions, or receive Statutory Sick Pay or Statutory Maternity Pay. The TUC/Unionlearn stress that ATAs should also honour collective pay agreements when placing Apprentices in sectors with existing rates of pay for specific jobs.

West Nottinghamshire College's Vision Apprentices is one of 15 ATAs in the country and the only one in Nottinghamshire. Employers benefit from ATAs, as the agency, rather than the employer, matches the knowledge and skills of the Apprentice to employer needs, ensuring the right people are placed in the right jobs.

Barriers to Apprenticeships

The adult employment rate in the East Midlands is 73.3%, higher than the national rate of 72%. Unemployment amongst those aged 16 or more is 7.3% in the East Midlands, 8% nationally. The East Midlands is a region made up of approximately 95% small to medium enterprises (SMEs) and 86% of SMEs in the East Midlands employ fewer than 10 people. SMEs tend to rely on 'just in time' training with a direct relevance to the business, prefer 'bite-sized chunks' rather than protracted programmes and prefer employees to stay on-site for training so less work time is lost. SME owner/managers tend to be time poor and focus on the operational concerns of the business rather than the training of staff members; and micro-businesses are less likely to identify training or succession planning as essential to the business.

Whilst it is easy to understand the reservations of small businesses, it does not explain the low number of Apprenticeships in the East Midlands, when succession planning and injecting new skills into the workforce are essential to the continuous cycle of delivering services. Interestingly however, the National Apprenticeship Service has noted that most enquiries concerning Apprentices come from micro-businesses (10 people or less) and that there is more work to be done with larger organisations.

Some of the reluctance to take on Apprentices may be built on the negative perceptions held by employers. Past experience of low completion rates and poor quality programmes, coupled with the net cost of employing Apprentices, can be off-putting. In straightened times when it is likely organisations face the prospect of redundancies, permanent staff may feel threatened by an Apprenticeship programme and Apprentices may expect permanent jobs which may not materialise.

Negative perceptions surrounding Apprenticeships can arise from previous experience of learning providers. Poor communication and marketing, concern about poor management of Apprenticeship schemes and variable quality standards have a significant impact on the willingness of employers to engage in what is, effectively, a joint venture.

Lack of understanding of funding, particularly variable funding dependent on local and regional priorities, contribute to the barriers raised by employers. Past experience of poor retention is also a barrier, as young people often leave programmes for a variety of reasons, including poor Information, Advice and Guidance, lack of work-readiness, over-specialised frameworks and low pay. The imminent Education Bill will include a revised duty ensuring schools provide independent, impartial careers guidance for all pupils; including a specific requirement that careers guidance must include information on options available in respect of 16 to 18 education or training, including Apprenticeships.

Perhaps the perception of Apprenticeships as a 'low skill' type of training pervades the population in general. It is interesting to note that national figures show 95% of people with traditional 'A' levels progress to higher education, as do 45% of people with vocational qualifications such as BTEC National Diploma, but only 5% of Advanced Apprentices progress to higher education.

Apprenticeship Progression

Work-based learning is often perceived as limited to lower level skills training, or 'oily rag' training, particularly in relation to Apprenticeships. The Leitch Report of 2006 "Prosperity for All in the Global Economy – World Class Skills", found the UK ranked 12 out of 18 OECD (comparative) members in terms of skills. In order to compete in the global marketplace and be a world leader of skills, Leitch recommended that 95% of adults should achieve functional literacy and numeracy and that 90% should be qualified to at least level 2. Leitch also recommended that intermediate skills should be level 3 rather than level 2; and that 40% of adults should be qualified to level 4 and above (higher education). As only 5% of Apprentices progress to higher level skills training, compared to 95% of 'A'' level students, then there is more work to be done by providing good Information, Advice and Guidance (IAG) to young people and adults, and selling the business benefits to employers by providing a strong business case – that a highly skilled workforce is linked to increased productivity and profitability; and investing in company employees and Apprentices, increases staff motivation and retention.

When 'selling' the idea of work-based learning at the higher skills level, individuals and employers often perceive it as having less value than traditional higher education programmes; unless there is an established progression route in place, such as the Higher National Diploma (HND) for engineers.

Training at the higher skills level tends to be the province of large organisations with training budgets and an HE strategy that includes succession planning and employee development. However, the majority of East Midlands' businesses are SMEs (small to medium enterprises.) SMEs tend to rely on 'just in time' training with a direct relevance to the business and prefer 'bite-sized chunks' rather than protracted programmes. They are also more likely to seek funding from external agencies (not available at the higher skills level) and to prefer employees to stay on-site for training so less 'work' time is lost. Micro-businesses are less likely to have assessed workforce needs and also less likely to identify training or succession planning as essential to the business.

Recognised Prior Learning (RPL) and Recognised Prior Experiential Learning (RPEL) should make higher level skills training such as Foundation Degrees, Higher Level Apprenticeships and Apprenticeships more attractive to employers if used correctly by training providers. A sound RPL system enables employees to 'claim' previous experience or training, thus reducing the amount of study and fees.

Despite the fact that work-based learning is a vital mode of learning, level 3 vocational learners (such as Advanced Apprentices) are, in the field of traditional higher education, non-traditional learners and face barriers not experienced by traditional undergraduates. For many work-based learners moving beyond level 3, the development of craft skills is replaced by the need to develop managerial and customer services skills. Success as a craftsman/woman does not assure success in a supervisory/managerial role. Advanced Apprentices require detailed knowledge of facts, procedures and processes and evidence of work-related achievements and skills for their jobs, but if they progress to traditional HE programmes, will require analytical and evaluative skills, and enhanced communication skills. The advent of more Higher Level Apprenticeships (to level 6/7) will provide an opportunity to continue vocational higher level learning in a work-based context.

One of the barriers to Apprenticeship progression, particularly to higher level skills training, is that employers find that the employee/Apprentice they have supported and nurtured has desirable skills in the open market place. Often, employers do not understand how level 4 qualifications contribute to business objectives and have no tangible evidence that level 4 qualifications warrant organisational expenditure. There is a need for more information about progression to higher level skills training for Advanced Apprentices; however progression is more likely in some sectors. The engineering sector has strong progression for Advanced Apprentices due to recognition of qualifications and clear historical pathways to

HNC/Ds. Large employers with many Apprentices are more likely to encourage and support progression. Smaller employers are less likely to support higher level progression if they perceive there will be expectations of immediate promotion to managerial level.

By developing a pathway to higher level Apprenticeships, employers are more likely to feel they will retain trainees, and benefit from their increased expertise. It is likely that level 5 Technical Certificates will be Foundation Degrees, which provide opportunities for work-based projects to benefit the employer, and provide the trainee with underpinning knowledge and academic rigour. The government is aiming for 60% of starts to be Advanced Apprenticeships by 2014/15 and over the next 18 months, level 4 Apprenticeships will be more significant.

Specification of Apprenticeship Standards for England

The new Specification of Apprenticeship Standards for England (SASE) was published in January 2011 and has implications for all Apprenticeship providers. SASE was introduced as a result of the Apprenticeship, Skills, Children and Learning Act 2009 and SASE compliance is a statutory requirement of the ASCL Act.

The National Apprenticeship Service (NAS) is supporting the transition to the new SASE. Sector Skills Councils need to effect a hasty submission of SASE compliant frameworks; although the majority of frameworks are already largely QCF and SASE-compliant. Changes of note include the dual running of Key Skills and Functional Skills (until 2012), the inclusion of Level 5 Higher Apprenticeship frameworks and the re-naming of level 2 and level 3 Apprenticeships as Intermediate Level and Advanced Level Apprenticeships.

Apprenticeship frameworks (37 credits) should include:

- a competency element (10 credits)
- a technical certificate (10 credits)
- Employer Rights and Responsibilities
- Personal, Learning and Thinking Skills
- Entry Conditions
- Equality & Diversity
- Progression Routes.

Interestingly, the Wolf Report recommends all learners should be given the opportunity to achieve English and Maths GCSE at grade ‘C’ or above, either at school or within further education learning programmes. Whether the Government acts on this recommendation remains to be seen.

National Skills Academies

National Skills Academies deliver specialised skills training to employees and learners to help them respond to business needs. They are created, with employers from specific sectors, to improve competitiveness in key areas of the economy. National Skills Academies work with Sector Skills Councils and other industry representatives and bodies to effect change, achieve the priorities employers have identified, ensure training and qualifications are relevant to the industry sector, and quality assure training provision. National Academies also help to identify qualifications and skills needed in the future and seek to fill training gaps and skill shortages. National Academies in different sectors have different configurations, they could be permanent training centres in a fixed location; or operate from a college or training provider; or be based in a workplace training centre; or deliver training and services online. Programmes and training are suitable for existing employees and potential recruits.

There are currently 18 National Skills Academies, 16 of which are currently operating in the following sectors:-

- Manufacturing
- Construction
- Financial Services
- Food and Drink Manufacturing
- Nuclear
- Process Industries
- Hospitality
- Creative and Cultural
- Sports and Active Leisure
- Retail
- Enterprise
- Social Care
- Materials, Production and Supply
- Information Technology
- Power
- Railway Engineering.

The National Skills Academy for Power promotes careers in the power industry; maintains a network of skills providers; provides training materials and resources for schools and colleges; is a vehicle for sharing best practice; and boosts education and training provision in the power sector. The Skills Academy has a national hub, which works with regional training providers; each regional training group includes power sector companies' internal training provision and private, further and higher education providers.

The National Skills Academy for Construction (led by Constructionskills) is a demand-led training model. The client and contractor determine the required skills and training is practical and takes place within a live project.

The National Skills Academy for Logistics is in the planning stage. On 4 February 2011, the Skills Minister John Hayes announced a new National Skills Academy for Environmental Technologies.

The new National Skills Academy for Environmental Technologies will aim to deliver 2000 publicly-funded and over 200,000 privately funded training courses in the first 5 years. It will receive £2.5 million of funding over three years (matched by employers), working with employers and training providers to create a skilled workforce in low carbon and renewable energy. The Academy will be a network of 14 hubs across England, based in Further Education Colleges, along with over 80 accredited training providers.

The initial accredited Skills Academy hubs are:-

· Bedford College (EofE)

· Blackburn College (NW)

· Bradford College (Y&H)

· College of North West London (Lond)

· Cornwall College (SW)

· Dudley College (WM)

· Hartlepool College (NE)

· Leeds College of Building (Y&H)

· Liverpool Community College (NW)

· Stephenson College (EM)

· Stourbridge College (WM)

· Genesis Project (Somerset College, SW)

· Trafford College (NW)

· Weston College (SW).

The lead 'hub' in the East Midlands is Stephenson College and there are eight colleges acting as 'spokes':

- Chesterfield College
- Lincoln College
- Grantham College
- Moulton College
- South Leicestershire College
- Leicester College
- Derby College
- Northampton College.

In the East Midlands, five core courses are planned for development, in Awareness, Solar, Photovoltaics, Heat Pumps and Water Harvesting.

The network of providers (with a central administration and co-ordinating function based in Milton Keynes) will provide training in the design, installation and maintenance of technologies such as solar thermal, photovoltaics, heat pumps, water harvesting and recycling. SummitSkills, the Sector Skills Council for building services engineering, will approve the accredited training to ensure the sector has the right skills to meet government carbon reduction targets and face the challenges of the low carbon economy.

Apprenticeships and Low Carbon

In 2008, the Department for Environment, Food and Rural Affairs (Defra), working with the Department for Innovation, Universities and Skills (DIUS) and the Department for Business, Enterprise and Regulatory Reform (BERR), commissioned research to review the understanding and current skills requirements for a low carbon and resource efficient economy. The resulting 92 page document produced by ProEnviro, entitled 'Skills for a Low Carbon and Resource Efficient Economy', shows demand for qualified staff in low-carbon industries such as renewables, nuclear, green building and transport. The report suggests that the skills needed to achieve and maintain a successful low carbon and resource efficient economy are drawn from a wide range of subject areas; categorised as:

- Design
- Waste
- Energy
- Water
- Buildings
- Transport
- Materials
- Financial
- Management
- Policy and Planning.

Some of the skills required to support a low carbon economy are new, some are more established; such as science, technology, engineering and mathematics skills (STEM); and others are generic and multi-sector skills. The report concluded that existing skills need to be increased, applied in new situations or adapted with further training. The report's research also found that employers do not articulate demand for low carbon and resource efficient economy skills, possibly because there is a lack of understanding of the skills required to implement change and the benefits of integrating low carbon/resource efficient skills into a business. Consequently, it is difficult for learning providers on the supply side of skills training to anticipate future demand.

In some instances, organisations recognise the need for 'low carbonising' Apprenticeships and put forward arguments for the development of specific frameworks. The National Association of Professional Inspectors and Testers (NAPIT) is pressing for a bespoke Apprenticeship framework in micro-generation; but support from the various bodies involved is limited, citing the flexibility of existing frameworks to cover the skills required.

The skills delivery system in vocational subjects, and funding, tends to be more focused on lower level skills, when in fact, the new agenda requires more intermediate technical and professional skills (levels 3 to 5). As 70% of the workforce of 2020 is already in the workforce, the integration of skills for a low carbon economy should be threaded through internal and external company training schemes; and assimilated into QCF qualifications and National Occupational Standards. Sector Skills Councils are in a position to influence the low carbon agenda and raise awareness at employer level.

East Midlands Colleges

In 2009, the East Midlands NTI Construction Network was one of 5 successful bids for funding from the Department of Innovation Universities and Skills (DIUS) Further Education Specialisation and Innovation Pathfinder Fund, delivered via the LSC. The funding was used to provide a local source of specialist knowledge for businesses. Each project member employed a specialist advisor to research innovative components, raise awareness and offer advice to design and construction companies in order to improve energy efficiency and reduce carbon emissions.

Project members were: -

- Chesterfield College (water management, rainwater harvesting, greywater recycling, water saving appliances)
- West Nottinghamshire College (renewables, electricity and energy, energy efficient building products)
- Derby College (modern methods of construction, off-site manufacturing)
- Lincoln College (thermal mass in buildings)
- Leicester College (weather compensating controls, duel fuel systems)
- Stephenson College (renewable energy, solar, biomass, mini/micro combined heat and power).

Despite the fact that many frameworks could be 'low carbonised', not all FE Colleges in the East Midlands have the equipment or staff expertise to deliver the technical input and employers may find it difficult to source a local provider. Many colleges do not have the financial resources to invest in technology or staffing to deliver the programmes, because the market is considered to be too small or too specialist. In instances where technology is too expensive, or there is a lack of critical mass in terms of attracting cohorts, investment in low carbon technologies is not a priority.

Whilst colleges are willing to adapt existing programmes and offer specialised short training courses, the offer may be narrowed by a lack of regional demand, geographical limitations and cost. Highly specialised programmes may require specialised provision which colleges cannot offer.

Primary evidence reveals that colleges believe there are a number of factors inhibiting expansion. These are identified as:

- technology is outside the expertise and competence of the college, its staff and facilities
- the market is too small, especially at local or sub regional level to justify and sustain investment in facilities and staffing
- the cost of entry to the market is too high
- it is not part of the college's mission
- many programmes require specialist providers
- financial returns do not justify the investment
- colleges are focused on achieving quality standards and performance levels associated with main stream provision
- no targets are set by Boards, Ofsted or other stakeholders
- there are no internal incentives to staff to develop new programmes
- the difficulty of recruiting qualified and experienced staff. Qualified staff are more highly remunerated in the private sector
- private sector training providers are often able to operate at a lower cost and operate in niche markets nationally
- manufacturers prefer to use their own staff to deliver training
- Research and Development is not part of college culture and staff have heavy workloads
- there is a lack of investment in low carbon technology
- Awarding bodies and SSCs are slow to respond to low carbon technology.

Moulton College

Moulton College's plumbing apprentices and advanced apprentices have access to and awareness training on rain/grey water harvesting, solar domestic (flat plate and tubular collectors) and newly installed heat pump training rigs. Bricklaying, Carpentry and Stonemasonry apprentices also receive basic awareness tuition regarding these new technologies.

The Rainwater Harvesting and Solar Domestic training rigs and real installations were partly funded by emda in the 2008 investment scheme.

It appears that a lack of SME employer awareness/engagement in renewable technologies is proving problematic in promoting low carbon initiatives. However, it is obvious to Moulton College, a first class training provider, that when students are exposed to the new technologies and have hands on experience of working with the equipment they are enthusiastically engaged and genuinely interested. Hopefully this passion for renewable technologies will carry out to their colleagues in the workplace and existing workforce to ignite an interest in awareness and training for the low carbon agenda.

Grantham College

Construction Centre - Grantham College officially opened their Renewable Energy Centre earlier this year. The college has recognised the significance of developing training relevant to the low carbon sector. As such the Renewable Energy Centre will serve as a purpose built venue and training centre for taster courses, full-cost training, full-time courses and Apprenticeship programmes.
The centre will be utilised for supporting the delivery of the new Plumbing Apprenticeship frameworks and the renewable/low carbon elements.

Automotive Centre - a Hybrid car was purchased from Honda and has been used to deliver general knowledge about hybrid/low carbon technology to apprentices and young apprentices.

Renewable Energy Centre Opens (cutting -18/1/11)

Guests included colleagues from East Midlands Colleges including Boston, Derby, Lincoln, Nottingham Trent and New College Nottingham as well as representatives from businesses that provided equipment for the centre including British Eco and ITHO and also a number of representatives from SKDC, Lincolnshire County Council and a number of local employers based in the area.

The centre was originally mews accommodation for students and has been worked on since 2009 after £15,000 of funding was secured from East Midlands Development Agency (emda). In total £40,000 of funding has been successfully bid for, which has seen equipment including under floor heating , airsource and groundsource heating, photovoltaic, solar heating, heat recovery and rainwater harvesting systems purchased and installed in the centre.

The centre will be a fully functional Renewable Energy Centre which will provide employers, College students and the community with hands-on experience of the new environmental technologies and access to short courses and training in these areas.

Steve Shepherd, Head of Construction, said "It

was a very successful launch which was well attended by a good range of different organisations. Everyone gave positive feedback about the centre and I am very pleased with what we have achieved with the opening of the centre. We now have a valuable asset to deliver environmental technologies training to the people of Grantham and the surrounding area."

Tim Gadsby, Head of Engineering at Grantham College, added, "It might prove difficult to adapt Apprenticeships to include low carbon skills as the technology is not yet mass produced and is also still in the development stage. It could be several years before the technology defines itself."

New College Stamford

At New College Stamford, staff members are currently undertaking external CPD sessions so low carbon elements can be integrated into the learners' qualifications, as the new Electrical 2357 and Plumbing 6189 programmes have elements of low carbon technology within them. The college is currently investigating the possibility of running motor vehicle hybrid fuelled vehicles' programmes in 2012, but there are major costs involved.

The college has approached a number of major construction companies to explore the possibility of sponsorship, but it has become increasingly difficult to get them on board. A number of part-time courses, including installing photovoltaic/solar panels and carbon management, are currently advertised by the college, but local response is poor, possibly due to the current economic climate and/or changes in feed-in tariffs. In order to increase engagement with low carbon training, colleges need access to more grant funding.

Boston College

Boston has to date introduced minor aspects of low carbon identified within frameworks. New frameworks are including units associated with low carbon, currently evident within the proposed Electro-technical framework and the Plumbing framework. The college has not been in receipt of emda funding relating to low carbon resources.

As many providers have found, frameworks are challenging to deliver. The focus is determined by the Awarding Body's requirements and the Awarding Body is guided by the relevant Sector Skills Council. Until very recently, there was little evidence of SSC engagement in low carbon across trade areas. However, the college is determined to engage with the changing focus in new frameworks which include low carbon.

Chesterfield College

Chesterfield College has not specifically introduced low carbon technology into apprenticeship programmes; although they are heavily involved in water management via the NTI Pathfinder project. Andy Smith of Chesterfield College thinks there may be difficulties in adapting Apprenticeships to include low carbon skills, as the time frame to complete specific units makes adding additional elements difficult. Colleges will also need to ensure employer advisors have an up-to-date knowledge of low carbon units and elements to be able to advise employers of options and career paths.

Chesterfield College has made full use of the equipment purchased through the Pathfinder project. The college is now registered to deliver rainwater harvesting courses (BPEC) and is currently working with the Eco Centre at Wirksworth to deliver rainwater courses at both venues. The equipment will also be used for a three-day 'green' festival (Peak Climate Change) at Cromford Mill in April/May 2011.

South Leicestershire College

South Leicestershire College have not yet begun to 'low carbonise' existing programmes, but plans are in place to use installed equipment from the emda scheme in September 2011. It has been difficult to adapt Apprenticeships to include low carbon skills as providers are waiting for Sector Skills Councils and Awarding Bodies to finalise the

development of programmes based on National Occupational Standards. Despite the fact that more units are coming on stream through the QCF, it will take time for complete programmes to be fully developed.

The National Apprenticeship Service is considering the introduction of a hybrid Apprenticeship based on Low Carbon Energy technologies. There is a possibility that a lack of skills and knowledge gleaned from a specific Apprenticeship (for example plumbing or electrical installation) could expose the learner to danger. Mick Jones says, "There should be a requirement to have a wider knowledge pertaining to Water Byelaws etc; or Certification and Testing of Electrical Installations, to ensure the installation conforms to requirements. This may not happen if the qualifications are too narrow."

Loughborough College

Loughborough College has recently invested in vehicles and technology to delivery hybrid vehicle training. This is not a feature of the current L2 provision but will be a feature of the L3 provision from 2011-12 onwards.

As many college providers have found, it is often difficult to include low carbon skills in Apprenticeship programmes as it is a question of cost and economy of scale. Examples of low carbon equipment are generally costly for providers to purchase and, as yet, low carbon represents only a small percentage of the curriculum.

Lincoln College

Lincoln College is a hub partner of the East Midlands National Skills Academy for Environmental Technologies. The college purchased solar panel, hydrogen fuel and wind turbine technology kits from emda funding and has introduced hydrogen fuel cell vehicles, solar panel and wind turbine technology to all Apprenticeship programmes within Construction and Engineering. Solar thermal is now an integral part of the plumbing Apprenticeship programmes along with Environmental Technology awareness.

The college now has the capital equipment to both train and demonstrate new technologies in the sector; but at the moment there is little or no interest from the employers. Only a minority of employers are taking up training in the low carbon economy, but this tends to be training for specific suppliers of equipment rather than Apprenticeships.

The problem currently lies in a lack of suitable frameworks in the low carbon sector. New Building Services frameworks are being introduced later this year which will include pathways for Environmental Technologies. Hopefully this will increase the opportunity for Apprentices to train in these fields.

Member colleges working in the hub and spoke model of the National Skills Academy will also stimulate demand for low carbon training among employers. The Academy will also improve integrated partnership working amongst providers in the East Midlands which in turn will increase the ability to deliver training and advice on new technologies.

Stephenson College

Low carbon technologies have not been applied to any Apprenticeship programme associated with building services; and despite publicity, QCF units are still to be finalised. Stephenson has all the current range of renewable energy equipment for the building services sector and it is used for the enrichment of all building services' learners in the college. The emda funded kit includes Commercial Solar Thermal, Woody Biomass and Combined Heat and Power equipment.

New College Nottingham

New College Nottingham is investing heavily in its facilities to enable the college to offer training programmes and include elements and equipment in Apprenticeship frameworks in 2011-12. The equipment/facilities include Air Source Heat Pumps and Biomass. The Biomass course is for wood fuelled biomass boilers and stove heating; and the content of the programme includes an introduction to woody biomass heating and its context within the renewable energy centre - system costs, funding and government policy - Fuel Characteristics, Supply etc. Other low carbon courses on offer include Heat Pumps (Ground and Air Source); Disinfection of Stored Water Systems; Photovoltaic

Awareness; Rain and Grey Water Harvesting; Renewables Awareness; Solar-Domestic Hot Water; and Underfloor Heating Design.

Observations and Conclusions

In a Learning and Skills Council Round Table discussion in February 2010, the lack of demand for low carbon skills training amongst employers was identified as "a perceived lack of relevance to business" and that low carbon was a "moral case", not a "business case". There is a need for the government, Sector Skills Councils and Awarding Organisations to include low carbon in training and qualifications as standard and define the business case. An increase in public awareness training in low carbon would also be beneficial, via media campaigns and promotion.

The skills system focuses on whole frameworks and qualifications and is not flexible enough to deliver the top-up skills required; and funding has traditionally been based on whole qualifications rather than smaller units. The Qualifications and Credit Framework provides the opportunity for flexibility as it is a mechanism for mixing and matching modules to create a full qualification, as learners can achieve a 'spiky profile'.

In order to customise Apprenticeship frameworks to include a low carbon unit, employers/providers must work with the relevant Sector Skills Council. The framework is then sent to Awarding Organisations in order to develop the qualification. Employers and providers find the length of time required to develop a new qualification (or unit) is excessive and inhibits flexibility. The system needs to be more responsive and provide a speedy turnaround.

A mandatory low carbon unit could potentially be included in many qualifications or frameworks, just as health and safety awareness is included in many qualifications as standard.

Some of the new low carbon skills required will be short-term, as installers may be trained to install equipment which needs little or no maintenance, and once installed functions automatically. Learning providers need to include a range of transferable skills in learning packages to compensate for this.

Low carbon should be linked more closely to occupational areas so individuals and businesses understand and relate to it more readily. Linking the low carbon agenda to sectors is too broad and non-specific.

In some occupations, such as heating or plumbing, anyone wanting to become an installer of renewable energy systems needs to obtain a heating or plumbing qualification and subsequently add a qualification in renewable energy installation. By adding a low carbon element to the Apprenticeship as standard, the programme will be more concise and fit for purpose.

At the present time, there are no full-time provider-led qualifications in plumbing, as programme-led Apprenticeships are being phased out. Would-be plumbers therefore have to secure employment in order to train.

In situations where skills gaps have been identified, training should be developed and offered in modules to fit individual needs for current practitioners. For current and future trainees, in the development of new frameworks following SASE, there is an opportunity to include low carbon elements to all programmes.

Most Sector Skills Councils recognise the need for 'low carbon' training as extensions of existing skills sets and job functions, as opposed to specific and isolated roles.

A shortage in engineering disciplines (highly qualified engineers and experienced technicians) has resulted in an increasing reliance on STEM skills (Science, Technology, Engineering and Mathematics). As STEM skills are increasingly sought after, the result could reduce the number of suitably qualified personnel in low carbon sectors.

Low carbon industries also identified a shortage of personnel with project management skills. Project management skills are particularly important in the development of low carbon technologies and infrastructure.

The costs of training are mostly directed towards the achievement of whole qualifications at Level 2 and below, but the Low Carbon sector needs more intermediate

technical and professional level skills (levels 3, 4 and 5). Full level 3 qualifications and Apprenticeships are funded for 16-18 year olds, but short programmes are not, and levels 4 and 5 have to be funded by employers or individuals. To meet demand in the low carbon sector, funding streams need to change to encompass emerging skills demands.

A demand-led skills system relies on rapid response from providers; however employers may not identify the need for training until the reality of low carbon sector growth is evident.

The Wolf Report identified Apprenticeship starts were unevenly distributed across sectors. There are around 200 frameworks and Professor Wolf found the top 15 accounted for 80% of all starts; 68 had no starts at all; and 29 had 200 or fewer starts. The bottom 100 frameworks (2/3 of the total) accounted for only 2% of all starts.

The Wolf Report states,"Apprenticeship frameworks are non-age-related (the same for young and adult apprentices) and are highly specific in terms of their demands, including which qualifications may be used. Frameworks are developed by Sector Skills Councils, an approach which makes England doubly unusual. Most countries have national level advisory boards for Apprenticeships, but do not give sole responsibility to employer organisations, because Apprenticeships are seen as part of the education of young people."

Future skills shortages have been identified at intermediate technical and professional levels. In the East Midlands, a region well known for the good reputation of its universities, more undergraduates from outside the region come to study than leave the area to study elsewhere. However, a lack of large businesses and a low pay/low skills economy leads to a net outflow of graduates; or results in honours and Foundation degree graduates filling vacancies requiring lower level qualifications.

Employers value work experience (in the workplace) rather than 'work-related' experience in a college. Programme-led Apprenticeships are being phased out as the government places emphasis on training whilst employed. However, it is becoming more difficult for young people to obtain employment and as yet, there are no subsidies in place to encourage employers to take on young Apprentices.

The National Employer Skills Survey for England 2009 found there was good awareness of government funded Apprenticeships, but little awareness of the different levels/types of Apprenticeship (Advanced, Higher and Adult). There needs to be a continued consistent and concentrated campaign by government and associated agencies to raise awareness of Apprenticeships and Apprenticeship progression.

In some low carbon sectors, a lack of trainers with specialist skills or a lack of specialist equipment could potentially cause quality issues with the standard of training available. Colleges should place a greater emphasis on CPD for staff in order to grow expertise in-house. Access to grant funding in order to buy the kit/technology is vital. Broader and more generic training is generally the province of colleges, but centres are reluctant to invest in course materials, resources and facilities, as initial outlay is costly.

The Wolf Report findings conclude that education is not generating enough people with quantitative skills at various levels. Schools and colleges are part of the process of redressing this problem.

Summitskills has a wide-ranging remit for low carbon which includes the specification, design, installation, commissioning, repair and maintenance of environmental technology systems. Summitskills recognises that most environmental technologies build on existing skills sets and jobs by up-skilling the workforce and are aware that up-skilling the workforce to encompass environmental technologies will provide businesses with a significant advantage over competitors.

The specialist and technical skills needed in the construction and built environment sector require training and qualification development to include low carbon for new builds and for refurbishment, in order to meet government objectives. This includes the existing workforce and Apprentices.

In many sectors, low carbon technologies are extensions to existing industries and activities, rather than new industries. The up-skilling and re-skilling of the workforce may be enough to meet requirements. The expectation is that there will be a low number of direct 'low carbon' jobs in most sectors, but there is potential for significant growth in specific sectors, e.g. offshore wind energy.

Public funding should be made available for second qualifications at levels 3 and 4 in key technical areas; particularly unit funding for qualifications and units related to generic low carbon skills.

A sea change is needed in the perceptions of young people at a very early age and throughout school life; specifically, changing young people's perceptions of low carbon industries. Pre-school intervention is crucial to creating positive attitudes towards STEM subjects and there is a collective responsibility for engendering enthusiasm from government, employers, institutions, policy-makers, funding bodies and other stakeholders.

The Wolf Report describes Apprenticeship frameworks as "highly specific in terms of their demands, including which qualifications may be used." If Sector Skills Councils do not address low carbon training needs in frameworks, the opportunity to diversify is lost.

Apprenticeships in the East Midlands are not growing at the national rate. In Nottingham City and Nottinghamshire, Apprenticeships have declined and numbers are lower than the rest of the East Midlands. Currently, there are 1000 Apprenticeship vacancies in the East Midlands.

The government is committed to Apprenticeships for employed people, and so Programme Led Apprenticeships are to be phased out. The East Midlands has the second highest level of Programme Led Apprenticeships. At present, some technical certificates at level 2 and 3 have not been replaced on the QCF for non-employed learners, for example, plumbing and electro-technical; however replacements exist for employed learners. Colleges in the process of recruiting for September 2011 are seeking clarification regarding provision to full-time learners to replace NQF programmes run by City & Guilds and EAL. The Association of Colleges is putting the case for a continuation of full-time qualifications' options (at levels 2 and 3) and has submitted a proposal to the SFA to address the issue.

The Wolf Report identifies Apprenticeship frameworks as "extremely rigid," as they do not allow for "responsiveness to local conditions and employer requirements." The consequence of rigid frameworks and lack of response to local conditions results in a failure to promote progression for young people. This is counterproductive to government ambitions to have 40% of the workforce to level 4 in line with Leitch's recommendations.

The TUC/Unionlearn stress that employers should honour collective pay agreements when placing Apprentices in sectors with existing rates of pay for specific jobs. In some sectors, where collective pay agreements exist (e.g. construction), the cost of employing an Apprentice may be prohibitive and may inhibit the growth of a low carbon skilled workforce.

The low number of Apprenticeships in the East Midlands, when succession planning and injecting new skills into the workforce are essential to the continuous cycle of delivering services, impacts on the regional economy and the region's ability to keep pace with the low carbon agenda. Many enquiries for Apprentices come from micro-businesses (which make up the majority of East Midlands' businesses), but micro-businesses are likely to be less willing/able to allow day-release or college-based training.

Recognised Prior Learning (RPL) and Recognised Prior Experiential Learning (RPEL) should make Apprenticeship progression more attractive to employers if used correctly by training providers. A sound RPL system enables employees to 'claim' previous experience or training, thus reducing the amount of study and fees.

The new National Skills Academy for Environmental Technologies will aim to deliver 2000 publicly funded and over 200,000 privately funded training courses in

the first 5 years. It will work with employers and training providers to create a skilled workforce in low carbon and renewable energy.

Some of the skills required to support a low carbon economy are new, some are more established; such as science, technology, engineering and mathematics skills (STEM); and others are generic and multi-sector skills. Existing skills need to be increased, applied in new situations or adapted with further training.

Employers do not articulate demand for low carbon and resource efficient economy skills, possibly because there is a lack of understanding of the skills required to implement change and the benefits of integrating low carbon/resource efficient skills into a business. As a consequence, it is difficult for learning providers on the supply side of skills training to anticipate future demand.

The skills delivery system in vocational subjects, and funding, tends to be more focused on lower level skills, when in fact, the new agenda requires more intermediate technical and professional skills (levels 3 to 5). As 70% of the workforce of 2020 is already in the workforce, the integration of skills for a low carbon economy should be threaded through internal and external company training schemes; and assimilated into QCF qualifications and National Occupational Standards. Sector Skills Councils are in a position to influence the low carbon agenda and raise awareness at employer level.

Colleges are focused on achieving quality standards and performance levels associated with main stream provision and financial returns do not justify the investment in specialist equipment and expertise.

Whilst there is no prescribed low carbon content in the technical certificates of Engineering (and other) Advanced Apprenticeships, college staff will often set low carbon content into their delivery and suggest learners might enhance their assignments and projects by offering work in this field.

Colleges and other learning providers are faced with constant difficulties in implementing Apprenticeship frameworks in the current unsettled climate. QCF units in low carbon have been published, but do not appear on the SFA's Learning Aims Database, and will not this year. They do not form part of any current Apprenticeship route. There is an optional route for Level 3 plumbing, which will be available next year; however, employers are likely to prefer Apprentices to pursue the gas route instead.

Training in renewable energy and low carbon is not simply a necessity to boost the economy and up-skill the workforce; it is also a means of educating future generations to conserve resources in their own country and help developing countries to improve living standards. One of the most efficient renewable energy sources is microhydro power, which is suitable for small-scale applications and cheaper to produce than wind or solar power. Microhydro (more than 100kW) and picohydro (less than 5kW) need a small drop in water height and a constant supply of running water to generate power. Very small turbines can supply enough power for a family. At this time, micro- and picohydro are not included in Apprenticeship frameworks.

Recommendations

Awarding Organisations, such as City & Guilds (C&G) awards over one million vocational qualifications each year and 90% of all S/NVQs are in the Built Environment. Awarding Organisations should, as a matter of course, incorporate low carbon/renewable units in qualifications.

The government needs to promote and verify the low carbon economy, so businesses commit to investment in plant and training. In turn, forward-thinking businesses can support and develop the supply chain.

The National Skills Academy for Environmental Technologies model of hub and spoke is an excellent way for providers to engage with low carbon technologies. By linking to the Academy, colleges can achieve economies of scale and develop staff expertise.

In the East Midlands the emda and NTI funded projects provided a highly significant investment in facilities in the region. The closure of public sector agencies such as RDAs will have an impact on the ability of colleges to invest in low carbon 'kit'. Low carbon targeted funding, from government, funding bodies and regeneration agencies, should be made available to colleges and learning providers in order to meet the needs of employers, the economy, and the UK's low carbon agenda.

Colleges need to prioritise staff development via CPD, secondments, and technical and professional training.

Regional and national priorities, such as the low carbon agenda, could be incorporated in the Ofsted overview of provision.

Unlike universities, FE Colleges do not have a Research and Development focus and consequently, rarely engage in Knowledge Transfer Partnerships. Staff workloads and time tabled teaching hours precludes the development of new programmes and employer contact. In order to fulfil its own agenda, government needs to recognise the importance of FE Colleges in regional development and offer weighted funding for emerging new technologies.

FE Colleges should incorporate new technologies, and the need to compete in emerging markets, into their strategy and provide incentives for staff to develop new programmes.

Qualified and experienced personnel in new technology sectors are highly paid. Colleges need to be able to recruit and remunerate accordingly.

Many manufacturers prefer to use their own staff to deliver training and have the required specialised equipment. Funds to support regional growth should be made available to support providers in the delivery of training to meet UK low carbon targets.

Providers and employers should, in theory, be able to approach Awarding Bodies and Sector Skills Councils to develop new frameworks and programmes. Experience shows that SSCs are slow to respond and therefore frameworks tend to be fixed and rigid, rather than flexible and responsive.

There is a need for the government, Sector Skills Councils and Awarding Organisations to include low carbon in training and qualifications as standard and define the business case to employers.

Some of the new low carbon skills required are short-term and learning providers should include a range of transferable skills in learning packages.

Low carbon should be linked more closely to occupational areas, rather than sectors, so individuals and businesses understand and relate to it more readily.

In some occupations, such as heating or plumbing, anyone wanting to become an installer of renewable energy systems needs to obtain a heating or plumbing qualification and subsequently add a qualification in renewable energy installation. A low carbon element included in the Apprenticeship as standard will make the programme fit for purpose.

Most Sector Skills Councils recognise the need for 'low carbon' training as extensions of existing skill sets and job functions, as opposed to specific and isolated roles. A specialised Apprenticeship in low carbon might not offer enough specialised training to meet the needs of a specific sector.

Project management skills at level 4/5 have an increasing relevance in the development of low carbon technologies and infrastructure. A specialised framework in low carbon management could be developed, however, it is likely specialist industry skills rather than generic skills would be required by the sector. It is, however, a possibility for progression to level 4/5/6 for Apprentices with specific craft training at level 3.

The costs of training are mostly directed towards the achievement of whole qualifications at Level 2 and below, but the Low Carbon sector needs more intermediate technical and professional level skills. To meet demand in the low carbon sector, funding streams need to change to encompass emerging skills demands.

A demand-led skills system relies on rapid response from providers; however employers may not identify the need for training until the reality of low carbon sector growth is evident. Awareness raising is paramount and FE Colleges must be able to sell the business case.

Employers value work experience (in the workplace) rather than 'work-related' experience in a college. Programme-led Apprenticeships are being phased out as the government places emphasis on training whilst employed. FE Colleges may have to consider pre-Apprenticeship programmes and sell the RPL business case to employers.

There needs to be a continued consistent and concentrated campaign by government and associated agencies to raise awareness of Apprenticeships, levels and progression.

A lack of trainers with specialist skills or a lack of specialist equipment could potentially cause quality issues with the standard of training available. Colleges should place a greater emphasis on CPD for staff in order to grow expertise in-house. Access to grant funding in order to buy the kit/technology is vital.

In line with the Wolf Report findings of a lack of people with quantitative skills, colleges could explore options for increased numeracy support in programmes leading to Apprenticeships, or within Apprenticeship frameworks.

Most environmental technologies build on existing skills sets and jobs by up-skilling the workforce. By encompassing environmental technologies in Apprenticeship programmes, colleges can present a strong business case to employers by selling the increased advantage over competitors.

Government low carbon targets in the construction and built environment sector require specialist and technical training. By investing in resources, colleges can provide this training to the existing workforce and Apprentices.

Public funding should be made available for second qualifications at levels 3 and 4 in key technical areas.

The Wolf Report describes Apprenticeship frameworks as "highly specific in terms of their demands, including which qualifications may be used." Sector Skills Councils must address low carbon training needs in frameworks, or the opportunity to embrace low carbon training is lost.

Recognised Prior Learning (RPL) and Recognised Prior Experiential Learning (RPEL) are an opportunity for colleges to make Apprenticeship progression more attractive to employers.

Historically, employers do not articulate demand for emerging technologies, therefore it is difficult for learning providers to anticipate future demand. The new National Skills Academy for Environmental Technologies will aim to deliver 2000 publicly funded and over 200,000 privately funded training courses. Regional colleges in the hub and spoke model need to work collectively to raise awareness and demand amongst employers and provide responsive and flexible supply.

The skills delivery system in vocational subjects, and funding, tends to be more

focused on lower level skills, when in fact, the new agenda requires more intermediate technical and professional skills (levels 3 to 5). As 70% of the workforce of 2020 is already in the workforce, the integration of skills for a low carbon economy should be threaded through internal and external company training schemes; and assimilated into QCF qualifications and National Occupational Standards. Sector Skills Councils are in a position to influence the low carbon agenda and raise awareness at employer level.

In many sectors, low carbon technologies are extensions to existing industries and activities, rather than new industries. The up-skilling and re-skilling of the workforce may be enough to meet requirements. The expectation is that there will be a low number of direct 'low carbon' jobs in most sectors, but there is potential for significant growth in specific sectors, e.g. offshore wind energy. Some of the skills required to support a low carbon economy are new, some are more established; such as science, technology, engineering and mathematics skills; and others are generic and multi-sector skills. Existing skills need to be enhanced, or applied in new situations, or adapted with further training.

It is likely, therefore, that a specific Apprenticeship framework in low carbon would not serve the range of sectors to which low carbon/renewable technology applies. This is particularly true at levels 2 and 3, where a specific craft's skills are more appropriate. It would be far more beneficial to incorporate low carbon training in all appropriate Apprenticeship frameworks and develop units to up-skill the existing workforce.

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Skills for a Low Carbon and Resource Efficient Economy - ProEnviro

Low Carbon Environmental Goods and Services Sector Skills 2010 - Ekosgen

The Wolf Report 2011 - Professor Alison Wolf

LSC Round Table Discussion 2010

Summitskills Low Carbon statements

Low Carbon Sector Apprenticeships in East Midlands FE Colleges

FE College Offers

	BP		BSE			Con		EI			ET			Eng		
College Level	2	3	2	3	2	3	4	2	3	4	2	3	4	2	3	4
Northampton																
West Nottinghamshire																
North Nottinghamshire																
Moulton																
Derby																
Chesterfield																
Boston																
New College Stamford																
Grantham																
South Leicestershire																
Loughborough																
Lincoln																
South Nottingham																
Stephenson																
Leicester																
Brooksby Melton																
Stephenson																
New College Nottingham																

	EngT		GIO		HVR		H			IA		ICT		MV		
College Level	2	3	2	3	2	3	2	3	4	2	3	2	3	2	3	4
Northampton																
West Nottinghamshire																
North Nottinghamshire																
Moulton																
Derby																
Chesterfield																
Boston																
New College Stamford																
Grantham																
South Leicestershire																
Loughborough																
Lincoln																
South Nottingham																
Stephenson																
Leicester																
Brooksby Melton																
Stephenson																
New College Nottingham																

	PT		P		R		SRM		T & L		WM		WI		WTO	
College / Level	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Northampton																
West Nottinghamshire																
North Nottinghamshire																
Moulton																
Derby																
Chesterfield																
Boston																
New College Stamford																
Grantham																
South Leicestershire																
Lincoln																
South Nottingham																
Stephenson																
Leicester																
Brooksby Melton																
Stephenson																
New College Nottingham																

Key:

BPO: Building Products Occupations BSE: Building Services Engineering Con: Construction EI: Electricity Industry ET: Electro-technical Eng: Engineering EngC: Engineering Construction EngT: Engineering Technology GIO: Glass Industry Occupations HVR: Heating, Venting & Refrigeration H: Housing	IA: Industrial Applications ICT: Information Communication Technology N: Nuclear Decommissioning PT: Passenger Transport P: Plumbing R: Retail SRM: Sustainable resource Management T & L: Transport & Logistics WM: Waste Management WI: Water Industry WTO: Wind Turbine Operations

FE Colleges Offer

College	Apprenticeship	Level 2	Level 3	Level 4
North Nottinghamshire College	Electro technical	√	√	√
	Plumbing	√	√	
	Bricklaying	√	√	
	Carpentry	√	√	
	Engineering	√	√	
	ICT User	√	√	
	Vehicle Maintenance and Repair	√	√	√
Northampton College	Electrotechnical	√	√	
	Mechanical Performing Engineering Operations	√		
	Mechanical Tech Cert		√	
	Motor Vehicle	√	√	
West Nottinghamshire College	Painting and decorating	√	√	√
	Brickwork	√	√	√
	Bench Joinery	√	√	√

	Site Carpentry	√	√	√
	Electrical Installations	√	√	√
	Electrotechnical Technology	√	√	
	Engineering	√	√	√
	Engineering Technology	√		
	Industrial Applications	√		
	Motor Vehicle Maintenance (Light & Heavy Vehicle)	√	√	
	Basic Plumbing Skills	√		
	Mechanical Engineering Studies Plumbing		√	
	Traffic Officer	√	√	
	Warehousing	√	√	
	Driving Goods Vehicles	√	√	
	Carry & Deliver Goods	√	√	

Moulton College	Carpentry	√	√	
	Joinery	√	√	
	Brickwork	√	√	
	Wall & Floor Tiling	√	√	
	Stonemason	√	√	
Derby College	Construction	√	√	
	Electricity Industry	√	√	
	Electro technical	√	√	
	Mechanical Engineering	√	√	
	Fabrication & Welding	√	√	
	Glass Industry Occupations	√	√	
	Motor Vehicle	√	√	
	Plumbing	√	√	

Chesterfield College	Trowel Occupations	√	√	
	Wood Occupations	√	√	
	Maintenance Operations	√		
	Painting & Decorating	√	√	
	Electrical Installations	√	√	
	Electrical Engineering	√	√	
	Mechanical Engineering	√	√	
	Fabrication & Welding	√	√	
	ICT Professional	√		
	Auto Vehicle Maintenance & Repair	√	√	
	Vehicle Body Spray & Paint	√	√	
	Mechanical Engineering Services Plumbing	√	√	
	Retail	√		

	Warehouse & Storage	√		
	Logistics Operations		√	
Boston College	Wood Occupations	√	√	
	Trowel Occupations	√	√	
	Building Maintenance Operations	√	√	
	Electro-technical		√	
	Engineering	√		
	ICT User	√	√	
	Light Vehicle Maintenance	√	√	
	Plumbing	√	√	
	Retail	√	√	
New College Stamford	Wood Occupations	√	√	
	Site Carpentry	√	√	

	Trowel Occupations	√	√	
	Bench Joinery	√	√	
	Vehicle Maintenance & Repair	√	√	
	Motor Cycle	√	√	
	Basic Plumbing Studies	√		
	Mechanical Engineering Services Plumbing	√		
Grantham College	Carpentry Site & Bench	√	√	
	Bricklaying	√	√	
	Painting and decorating	√	√	
	Plastering	√	√	
	Installing Electro-technical Systems & Equipment		√	
	Operations & Maintenance Manufacturing	√	√	
	Electrical & Electronic Engineering	√	√	

	Light Vehicle Maintenance and Repair (including Motorcycle)	√	√	
	Maintenance Operations	√		
	Plumbing	√	√	
South Leicestershire College	Electrical/ Electronic Servicing	√	√	
	Engineering Maintenance	√	√	
	Fabrication And Welding	√	√	
	Mechanical Manufacturing Engineering	√	√	
	Installation And Commissioning	√	√	
	Technical Services	√	√	
	Industrial Applications	√		
Loughborough College	Engineering	√	√	
	Vehicle Fitting (Retail Motor Industry)	√	√	
Lincoln College	Trowel Occupations (Bricklaying)	√	√	

	Trowel Occupations (Plastering)	√	√	
	Wood Occupations (Site)	√	√	
	Wood Occupations (Bench)	√	√	
	Decorative Finishing and Industrial Painting	√	√	
	Electro-technical		√	
	Engineering and Manufacturing Technologies	√	√	
	Mechanical Engineering Services (Plumbing)	√	√	
	Vehicle Body Paint	√	√	
	Vehicle Maintenance and Repair	√	√	
South Nottingham College	Mechanical Manufacturing Engineering	√	√	
	Engineering Maintenance and Installation	√	√	
	Fabrication and Welding Engineering	√	√	
	Marine Engineering	√	√	

	Aeronautical Engineering	√	√	
	Electrical and Electronics Engineering	√	√	
	ITQ	√	√	
	IT Practitioner	√	√	
	Customer Service	√	√	
	Retail Services	√	√	
	Security (CCTV, Retail Patrol Guard, Door Supervisor)	√	√	
	Light Vehicle Maintenance and Repair	√	√	
	Vehicle Paint and Body Repair	√	√	
	Warehouse and Distribution	√	√	
	Environmental Services	√	√	
	Recycling	√	√	
Leicester College	Carpentry and Joinery (Site, bench and shopfitting)	√	√	

	Painting and Decorating	√	√	
	Plastering	√		
	Brickwork	√	√	
	Building Services Engineering: Gas	√		
	Electrical Installation		√	
	Plumbing	√	√	
Brooksby Melton College	Business Improvement Techniques	√		
	Motor Vehicle Maintenance & Repair	√	√	
New College Nottingham	Brickwork	√	√	
	Carpentry and Joinery	√	√	
	Construction	√	√	
	Maintenance Operations	√	√	
	Painting and Decorating	√	√	

	Plastering	√	√	
	Wall and Floor Tiling	√	√	
	Electrical	√	√	
	Heating and Ventilation	√	√	
	Gas ACS Aligned	√	√	
	Plumbing	√	√	
Stephenson College	Constructing Contract Operations		√	
	Trowel Occupations	√	√	
	Wood Occupations		√	
	Decorative Occupations	√		
	Fitted Interiors	√		
	General Construction	√		
	Maintenance Operations	√		

	Electrotechnical		√	
	Engineering Craft	√	√	
	Engineering Maintenance	√	√	
	Engineering Manufacture	√	√	
	Engineering Technical	√	√	
	Welding	√		
	Plumbing	√	√	
	IT User	√	√	
	Motor Vehicle Maintenance and Repair	√	√	
	Motor Vehicle HGV	√	√	
	Motor Vehicle LGV	√	√	
	Motor Vehicle Parts	√	√	
	Warehousing and Storage	√	√	

Annex A

Apprenticeships Frameworks available for providers to deliver (February 2011)

The following apprenticeship framework sectors in craft, technical and supervisory qualifications are linked directly or indirectly to the low carbon and 'renewables' agenda. They are listed by the National Apprenticeship Service, but may not be available locally.

Framework	Level 2	Level 3	Level 4	Sector Skills Council
Building Products Occupations	√	√		Proskills
Building Services Engineering		√		Summitskills
Construction	√	√		constructionskills
Electricity Industry	√	√		EU Skills
Electrotechnical		√		Summitskills
Engineering	√	√		SEMTA
Engineering Construction	√	√		Engineering Construction
Engineering Technology			√	SEMTA
Glass Industry Occupations	√	√		Proskills
Heating, Ventilating, Air Conditioning and Refrigeration		√		Summitskills
Housing	√	√		Asset Skills
Industrial Applications	√			SEMTA
Nuclear Decommissioning		√		Cogent
Plumbing	√	√		Summitskills
Water Industry	√	√		EU Skills
Sustainable Resource Management	√	√		EU Skills
Wind Turbine Operations and Maintenance	√	√		EU Skills/Renewable UK
ICT	√	√		e-skills UK
Retail	√	√		Skillsmart
Motor Vehicle	√	√		IMI
Passenger Transport	√	√		GoSkills
Transport and Logistics	√	√		Skills for Logistics

Low Carbon related Apprenticeship Frameworks (Intermediate and Advanced) available nationally January 2011 (prior to the publication of the new Specification of Apprenticeship Standards for England).

Asset Skills

Apprenticeship	**Housing**
Level	Apprenticeship Level 2
Competency Qualification	Level 2 NVQ Certificate in Housing (QCF)
Functional /Key Skills	English Level 1 Mathematics Level 1 Information Technology Level 1
Knowledge Qualification	Level 2 Certificate in Housing Practice or Level 2 Certificate in Housing Maintenance
ERR	Employment Rights and Responsibilities (ERR) Workbook

Apprenticeship	**Housing**
Level	Advanced Apprenticeship Level 3
Competency Qualification	Level 3 NVQ Certificate in Housing (QCF)
Functional /Key Skills	English Level 2 Mathematics Level 2 Information Technology Level 2
Knowledge Qualification	Level 3 Certificate in Housing Practice or Level 3 Certificate in Housing Maintenance
ERR	Employment Rights and Responsibilities (ERR) Workbook

Energy and Utility Skills

Apprenticeship	**Power Industry**
Level	Apprenticeship Level 2
Competency Qualification	Diploma in Electrical Power Engineering – Substation Plant (NVQ 2) (QCF) or Diploma in Electrical Power Engineering – Underground Cables (NVQ 2) (QCF) or Diploma in Electrical Power Engineering – Overhead Lines (NVQ 2) (QCF)
Functional /Key Skills	English Level 1 Mathematics Level 1

Knowledge Qualification	Certificate in Electrical Power Engineering – Distribution and Technical Knowledge 2 (QCF)
ERR	Employment Rights and Responsibilities (ERR) in Induction

Apprenticeship	**Power Industry**
Level	Advanced Apprenticeship Level 3
Competency Qualification	Diploma in Electrical Power Engineering – Lead Overhead Lines Person (NVQ 3) (QCF) or Diploma in Electrical Power Engineering – Lead Substation Crafts Person (NVQ 3) (QCF) or Diploma in Electrical Power Engineering – Overhead Lines (NVQ 3) (QCF) Diploma in Electrical Power Engineering – Substation Plant (NVQ 3) (QCF) or Diploma in Electrical Power Engineering –Underground Cables (NVQ 3) (QCF) or Diploma in Electrical Power Engineering – Power Plant Maintenance Combined Electrical and Mechanical) (NVQ 3) (QCF) or Diploma in Electrical Power Engineering – Power Plant Maintenance (Electrical) (NVQ 3) (QCF) or Diploma in Electrical Power Engineering – Power Plant Maintenance (Mechanical) (NVQ 3) (QCF) or Diploma in Electrical Power Engineering – Power Plant Maintenance (Control and Instrumentation) (NVQ 3) (QCF) or Diploma in Electrical Power Engineering –Power Plant Maintenance (NVQ 3) (QCF)
Functional /Key Skills	English Level 2 Mathematics Level 2 ICT 2
Knowledge Qualification	Certificate in Electrical Technology Engineering 3 (QCF) or BTEC Diploma in Electrical/Electronic Engineering 3 or BTEC Extended Diploma in Electrical/Electronic Engineering 3 or BTEC Award in Engineering (Specialist: Operations and Maintenance) 3 or BTEC Certificate in Engineering (Specialist: Operations and Maintenance) 3 or BTEC Diploma in Engineering (Specialist: Operations and Maintenance) 3
ERR	Employment Rights and Responsibilities (ERR) in Induction

Energy and Utility Skills

Apprenticeship	**Water Industry**
Level	Apprenticeship Level 2
Competency Qualification	Apprentices must complete either one of the following NVQs: Distribution Control 2 Network Construction Operations: Mainlaying (Water) 2 Network Construction Operations: Servicelaying (Water) 2 Operating Process Plant (Water) 2 Operating Process Plant (Waste Water) 2 Operating Process Plant (Sludge) 2 Leakage Detection 2 Or one of the following QCF Qualifications: Certificate for Water Sector Competent Operator Sludge Complex Works 2 (QCF) Diploma for Water Sector Competent Operator Sludge Complex Works 2 (QCF) Certificate for Water Sector Competent Operator Sludge Simple Works 2 (QCF) Certificate for Water Sector Competent Operator Water Complex Works 2 (QCF) Certificate for Water Sector Competent Operator Water Medium Works 2 (QCF) Certificate for Water Sector Competent Operator Water Simple Works 2 (QCF) Diploma for Water Sector Competent Operator Waste Water Complex Works 2 (QCF) Diploma for Water Sector Competent Operator Waste Water Simple Works 2 (QCF) Diploma for Water Sector Competent Operator Water Complex Works 2 (QCF) Diploma for Water Sector Competent Operator Water Medium Works 2 (QCF)
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Certificate in Water Engineering
ERR	Employment Rights and Responsibilities (ERR) in Induction

Apprenticeship	**Water Industry**
Level	Advanced Apprenticeship Level 3
Competency Qualification	Apprentices must complete one of the following NVQs: Maintain Water Supply 3 (Network) Network Construction Operations 3 (Water) Leakage Control 3 Managing & Controlling Process Operations 3 Controlling Process Operations 3 Water Fittings Regulations Enforcement 3
Functional /Key Skills	English Level 2 Mathematics Level 2 IT level 1
Knowledge Qualification	City & Guilds Level 3 Diploma in Water Engineering
ERR	Employment Rights and Responsibilities (ERR) in Induction

Summitskills

Apprenticeship	**Electrotechnical Services**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQs: (One of four routes) Installation – Buildings & Structures 3 Electrical Maintenance 3 Installing Instrumentation & Associated Equipment 3 Installing Highway Electrical Systems 3 or Installation – Buildings & Structures 3 or Electrotechnical Services (Highway Electrical Work) 3 Electrotechnical Panel Building 3 Electrical Machine Rewind & Repair 3
Functional /Key Skills	English Level 2 Mathematics Level 2 IT level 1
Knowledge Qualification	Certificate in Electrotechnical Technology 2 plus Certificate in Electrotechnical Technology 3 orr

	Diploma in Electrotechnical Services 3 or Certificate in Highway Electrical Work - Public Lighting 2 (QCF) plus Certificate in Highway Electrical Work - Public Lighting 3 (QCF) or Certificate in Highway Electrical Work - Traffic Signals 2 (QCF) plus Certificate in Highway Electrical Work - Traffic Signals 3 (QCF)
ERR	Employment Rights and Responsibilities (ERR) in Induction
+	Apprenticeship Occupation Practical Performance Assessment

SEMTA

Apprenticeship	**Engineering**
Level	Apprenticeship Level 2
Competency Qualification	NVQs: Performing Engineering Operations 2 Performing Engineering Operations (QCF) 2 Business Improvement – Techniques (QCF) 2 Mechanical Manufacturing Engineering (QCF) 2 Fabrication and Welding Engineering (QCF) 2 Aeronautical Engineering (QCF) 2 Engineering Maintenance and Installation (QCF) 2 Materials Processing and Finishing (QCF) 2 Electrical and Electronics Servicing (QCF) 2 Marine Engineering (QCF) 2 Railway Engineering (QCF) 2 Engineering Technical Support (QCF) 2
Functional /Key Skills	English Level 1 Mathematics Level 1 IT Level 1
Knowledge Qualification	Technical Certificate(s) Level 2 Diploma in Engineering and Technology (QCF) Level 2 Diploma in Electrical/Electronic Engineering Technology (QCF) Level 2 Diploma in Fabrication and Welding Engineering Technology (QCF) Level 2 Diploma in Maintenance Engineering Technology (QCF) Level 2 Diploma in Mechanical Engineering Technology (QCF) Level 2 Diploma in Pipework Systems Mechanical Engineering Technology (QCF) Level 2 Diploma in Refrigeration/Air-conditioning Equipment

	Engineering Technology (QCF) Level 2 Diploma in Electrical/Electronic Security Systems and Devices Engineering Technology (QCF) Level 2 Certificate in Cycle Maintenance (QCF) Level 2 Certificate in Positional Welding (QCF) Level 2 Certificate in Business-Improvement Techniques (QCF) BTEC Level 2 Extended Certificate in Engineering BTEC Level 2 Diploma in Engineering L2 Diploma in Light Vehicle Maintenance and Repair Principles Certificate in Aeronautical Engineering Certificate in Electrotechnical Technology Certificate in Vehicle Maintenance and Repair Certificate in Engineering Diploma in Vehicle Maintenance and Repair Level 2 Certificate in Fabrication and Welding Practice (QCF)
ERR	Employment Rights and Responsibilities (ERR) Workbooks
+	All apprentices must complete the following three units from the NVQ Level 2 Performing Engineering Operations (PEO) - NVQ Level 2 Unit 1: Working safely in an engineering environment Unit 2: Working efficiently and effectively in engineering Unit 3: Using and communicating technical information or An alternative Initial Engineering Training programme

Apprenticeship	**Engineering**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQs: Craft Pathways:- (level 3) Engineering Woodworking, Pattern and Model Making Installation and Commissioning (QCF) Engineering Maintenance (QCF) Fabrication and Welding Engineering Automotive Engineering Aeronautical Engineering Mechanical Manufacturing Engineering (QCF) Materials Processing and Finishing Marine Engineering Electrical and Electronics Servicing Electrical and Electronics Engineering Engineering Toolmaking Railway Engineering

	Engineering Leadership Metal Processing and Allied Operations Technician Pathways:- (Level 3) Engineering Technical Support (QCF)
Functional /Key Skills	English Level 2 Mathematics Level 2 ICT Level 2
Knowledge Qualification	Technical Certificate(s) Level 3 Diploma in Aeronautical Engineering (Survival Equipment) Maintenance (QCF) Certificate in Aeronautical Engineering 3 Certificate in Electrotechnical Technology 3 Certificate in Engineering 3 Certificate in Vehicle Maintenance and Repair 3 Diploma in Vehicle Maintenance and Repair 3 Level 3 Subsidiary Diploma in Engineering (QCF) Level 3 Diploma in Engineering (QCF) Level 3 Extended Diploma in Engineering (QCF) Level 3 Diploma in Electrical/Electronic Engineering (QCF) Level 3 Extended Diploma in Electrical/Electronic Engineering (QCF) Level 3 Diploma in Mechanical Engineering (QCF) Level 3 Extended Diploma in Mechanical Engineering (QCF) Level 3 Diploma in Operations and Maintenance Engineering (QCF) Level 3 Extended Diploma in Operations and Maintenance Engineering (QCF) Level 3 Diploma in Aeronautical Engineering (QCF) Level 3 Extended Diploma in Aeronautical Engineering (QCF) Level 3 Diploma in Manufacturing Engineering (QCF) Level 3 Extended Diploma in Manufacturing Engineering (QCF) Level 3 Diploma in Construction and the Built Environment (Civil Engineering) Level 3 Extended Diploma in Construction and the Built Environment (Civil Engineering) Level 3 Diploma in Engineering and Technology (QCF) Level 3 Diploma in Electrical and Electronic Engineering Technology (QCF) Level 3 Diploma in Fabrication and Welding Engineering Technology (QCF) Level 3 Diploma in Maintenance Engineering Technology (QCF) Level 3 Diploma in Mechanical Engineering Technology (QCF)

	Level 3 Diploma in Aircraft Maintenance Engineering Technology (QCF) Level 3 Advanced Diploma in Engineering and Technology (Progressive) (QCF) Level 3 Diploma in Cycle Maintenance (QCF) Level 3 Certificate in Pipe Welding (QCF) Advanced Certificate in the repair, restoration and conservation of clocks and watches - EAL Level 3 Certificate in Fabrication and Welding Practice (QCF) Level 3 Diploma in Fabrication and Welding Practice (QCF)
ERR	Employment Rights and Responsibilities (ERR) Workbooks
+	All apprentices must complete the NVQ Level 2 Performing Engineering Operations Candidates following the Engineering Practices pathway must complete the three mandatory assessment routes, plus three more of the optional assessment routes as detailed in the qualification structure. Mandatory Assessment routes: Unit 1: Working safely in an engineering environment Unit 2: Working efficiently and effectively in engineering Unit 3: Using and communicating technical information Candidates following the Technical Support pathway must complete the three mandatory assessment routes detailed above, plus five more of the optional assessment routes, as detailed in the qualification structure. or An alternative Initial Stage Training

Cogent

Apprenticeship	**Nuclear Working**
Level	Apprenticeship Level 2
Competency Qualification	Nuclear Decommissioning 2 or Radiation Protection or Combined Working Practices
Functional /Key Skills	English Level 1 Mathematics Level 1 ICT Level 1

Knowledge Qualification	PAA/VQSET Nuclear Industry Certificate Or Edexcel First Diploma in Engineering
ERR	Employment Rights and Responsibilities (ERR) Workbook
+	Unescorted Access Certificate

Apprenticeship	**Nuclear Working**
Level	Advanced Apprenticeship Level 3
Competency Qualification	Nuclear Decommissioning 3
Functional /Key Skills	English Level 2 Mathematics Level 2 ICT Level 2
Knowledge Qualification	National Award in Engineering National Certificate in Engineering National Diploma in Engineering
ERR	Employment Rights and Responsibilities (ERR) in Induction

Summitskills

Apprenticeship	**Heating, Ventilating, Air Conditioning and Refrigeration**
Level	Apprenticeship Level 2
Competency Qualification	NVQ 2 in: Mechanical Engineering Services Heating & Ventilating Installation in one of following: • Industrial and Commercial • Domestic • Ductwork Heating and Ventilating • Maintenance of System Components Refrigeration and Air Conditioning • Small Commercial Refrigeration and Air Conditioning Systems
Functional /Key Skills	English Level 2 Mathematics Level 2 ICT Level 1
Knowledge Qualification	Certificate in Heating and Ventilating Installation or Certificate in Heating and Ventilating – Maintenance of System Components or Certificate in Small Commercial Refrigeration and Air Conditioning

	Systems
ERR	Employment Rights and Responsibilities (ERR) in induction

Apprenticeship	**Heating, Ventilating, Air Conditioning and Refrigeration**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQ3 in: Mechanical Engineering Services: Heating and Ventilating Installation (C&G) – within one of the following contexts: • Industrial and Commercial • Domestic • Ductwork Heating and Ventilating Installation (EAL) – within one of the following contexts: Industrial and Commercial • Domestic • Ductwork Mechanical Engineering Services: Heating and Ventilating • Rectification of Systems Mechanical Engineering Services: Refrigeration and Air Conditioning • Commercial and Industrial Air Conditioning Systems • Ammonia Refrigeration Systems • Commercial and Industrial Refrigeration Systems – Non Ammonia
Functional /Key Skills	English Level 2 Mathematics Level 2 ICT Level 1
Knowledge Qualification	Heating and Ventilating Installation: Level 3 Certificate in Heating and Ventilating Installation - one of the following pathways: • Industrial and Commercial • Domestic • Ductwork Heating and Ventilating Maintenance: • Level 3 Certificate in Heating and Ventilating – Rectification of Systems Refrigeration and Air Conditioning: Level 3 Certificate in Complex Refrigeration and Air Conditioning Systems – one of the following pathways:

	• Commercial and Industrial Air Conditioning Systems • Ammonia Refrigeration Systems • Commercial and Industrial Refrigeration Systems – Non Ammonia
ERR	Employment Rights and Responsibilities (ERR) in Induction
+	Safe Handling of Refrigerants (Refrigeration & Air Conditioning qualifications only).

Summitskills

Apprenticeship	**Plumbing**
Level	Apprenticeship Level 2
Competency Qualification	NVQ 2 Mechanical Engineering Services – Plumbing
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	Level 2 Certificate Basic Plumbing Skills Or Level 2 Certificate in Plumbing
ERR	Employment Rights and Responsibilities in Induction

Apprenticeship	**Plumbing**
Level	Advanced Apprenticeship Level 3
Competency Qualification	Mechanical Engineering Services – Domestic Plumbing or Mechanical Engineering Services – Industrial & Commercial Plumbing
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	Level 2 Certificate in Plumbing or Basic Plumbing Skills (optional; the A/MA can be entered directly at Level 3 i.e. Domestic Plumbing Studies Level 3 Certificate Domestic Plumbing Studies or Level 3 Award in Plumbing Industrial & Commercial or Level 3 Diploma in Domestic Plumbing
ERR	Employment Rights and Responsibilities (ERR) in Induction
+	Optional: OFTEC Oil Fired Engineers Certificate

	Advanced Sheet Lead Systems - optional NVQ Unit Domestic Fire Control Systems - optional NVQ Unit Design Domestic Plumbing Systems – optional NVQ Unit Specify work programmes - optional NVQ Unit Industrial/Commercial Gas Installations - Certificate of Competency (gas ACS) First Aid - College Certificate Young persons and workplace regulations Abrasive Wheels Regulations - College Certificate (over 18 years) Site Safety - College Certificate Fire Safety - College Certificate Electrical Safety - College Certificate

Apprenticeship	**Industrial Applications**
Level	Apprenticeship Level 2
Competency Qualification	Performing Engineering Operations NVQ 2 or Performing Manufacturing Operations NVQ 2 or Marine Engineering NVQ 2
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Award in Industrial Environment Awareness 2
ERR	Employment Rights and Responsibilities (ERR) workbook

SEMTA

Apprenticeship	**Engineering Technology**
Level	Higher Apprenticeship Level 4
Competency Qualification	NVQ 4 Engineering Leadership Full Qualification
Functional /Key Skills	English Level 3 Mathematics Level 3 ICT 3
Knowledge Qualification	HNC in an engineering discipline Level 4 HND in an engineering discipline Level 5 Foundation Degree in an engineering discipline level 5 First Degree in an engineering discipline level 6
ERR	Employment Rights and Responsibilities (ERR) Induction
+	All learners must complete a minimum of 6 units from the Level 2 NVQ Performing Engineering Operations (PEO). These must include: Unit 1: Working safely in an engineering environment 2

	Unit 3: Using and communicating technical information 2 or, an alternative Initial Stage Optional Outcomes: • IET Further Learning • Engineering Technician Professional Registration • Incorporated Engineer

Summitskills

Apprenticeship	**Building Services Engineering Technicians**
Level	Advanced Apprenticeship Level 3
Competency Qualification	Building Services Engineering Technology and Project Management NVQ 3
Functional /Key Skills	English Level 2 Mathematics Level 2 ICT 2
Knowledge Qualification	National Certificate in Building Services Engineering Level 3
ERR	Employment Rights and Responsibilities (ERR) Induction

Proskills

Apprenticeship	**Glass Industry Occupations**
Level	Apprenticeship Level 2
Competency Qualification	Level 2 NVQ Certificate in Glazing (QCF) Level 2 NVQ Certificate in Curtain Wall Installation (QCF) Level 2 NVQ Certificate in Glass Processing (QCF) Level 2 NVQ Certificate in Glass Container Processing (QCF) Level 2 NVQ Diploma in Fenestration Installation (QCF) Level 2 NVQ Certificate in Domestic Fascia, Soffit and Bargeboard Installation (QCF) Level 2 NVQ Certificate in Windscreen Repair (QCF) Level 2 NVQ Diploma in Glass Container Manufacture (QCF) Level 2 NVQ Certificate in Fabrication of Glass Supporting Structures (QCF) Level 2 NVQ Certificate in Flat Glass Manufacture (QCF) Level 2 NVQ Diploma in Automotive Glazing (QCF) Level 2 NVQ Diploma in Automotive Glazing (QCF) Level 2 NVQ Certificate in Windscreen Repair (QCF)
Functional /Key Skills	English Level 1 Mathematics Level 1

Knowledge Qualification	GQA Level 2 Certificate in Glass Related Operations (QCF)
ERR	Employment Rights and Responsibilities (ERR) Induction

Apprenticeship	**Glass Industry Occupations**
Level	Advanced Apprenticeship Level 3
Competency Qualification	Level 3 NVQ Certificate in Glazing (QCF) Level 3 NVQ Certificate in Automotive Glazing (QCF) Level 3 NVQ Certificate in Fabrication of Glass Supporting Structures (QCF) Level 3 NVQ Certificate in Automotive Glazing Supervision (QCF) Level 3 NVQ Certificate in Automotive Glazing Supervision (QCF) Level 3 NVQ Certificate in Automotive Glazing (QCF) Level 3 NVQ Diploma in Fenestration Installation (QCF) Glass Processing NVQ Level 3 (NQF)
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 3 Certificate in Glass Related Operations (QCF)
ERR	Employment Rights and Responsibilities (ERR) Induction

Proskills

Apprenticeship	**Building Products Occupations (Operatives Pathway)**
Level	Apprenticeship Level 2
Competency Qualification	Performing Manufacturing Operations level 2
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Certificate in Manufacturing Working Practices level 2
ERR	Employment Rights and Responsibilities (ERR) Induction

Apprenticeship	**Clay Building Products Operatives Pathway**
Level	Apprenticeship Level 2
Competency Qualification	Performing Manufacturing Operations level 2
Functional /Key Skills	English Level 1 Mathematics Level 1

Knowledge Qualification	Certificate in Clay Building Products
ERR	Employment Rights and Responsibilities (ERR) Induction

Apprenticeship	**Clay Building Products Senior Operatives/Team Leaders Pathway**
Level	Advanced Apprenticeship Level
Competency Qualification	Combined Working Practices Level 3
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	Certificate in Clay Building Products Level 3
ERR	Employment Rights and Responsibilities (ERR) Induction

Apprenticeship	**Clay Building Products Quality Technician Pathway**
Level	Advanced Apprenticeship Level
Competency Qualification	Business Improvement Techniques Level 3
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	Certificate in Clay Building Products Level 3
ERR	Employment Rights and Responsibilities (ERR) Induction

Engineering Construction Industry Training

Craft:	*Technician:*	*Oil and Gas:*
Pipefitting Mechanical Fitting Plating Welding Steel Erecting Electrical Installation Moving Loads	Instrumentation and Control Maintenance (offshore) Mechanical Maintenance (onshore) Electrical Maintenance (onshore) Design and Draughting Project Control Non-destructive testing	Mechanical Maintenance (offshore) Electrical maintenance (offshore) Instrumentation and Control Maintenance (offshore)

Example for Craft - Pipefitting

Apprenticeship	**Engineering Construction - Pipefitting**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQ 3 Installing Plant & Systems – Pipefitting
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	Certificate in Engineering Construction or BTEC National Award in Engineering level 3
ERR	Employment Rights and Responsibilities (ERR) Induction
Training	Health and Safety Reading and interpreting drawings Symbols and specifications Cutting and shaping pipe Laying out pipework Assembling pipework Forming pipe

Engineering Construction

Example for Technician – Mechanical Maintenance (onshore)

Apprenticeship	**Engineering Construction – Mechanical Maintenance**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQ 3 Maintaining Plant & Systems – Mechanical
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	BTEC National Certificate in Operations and Maintenance/National Certificate in Mechanical Engineering Level 3
ERR	Employment Rights and Responsibilities (ERR) Induction
+	CCNSG Safety Passport
Training	Health and Safety Manual handling Identification of material types and forms Marking out metal Cutting and shaping materials Assembling mechanical components Positioning and installing large assemblies.

Engineering Construction
Example for Oil and Gas – Mechanical Maintenance (offshore)

Apprenticeship	**Engineering Construction – Mechanical Maintenance**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQ 3 Maintaining Plant & Systems – Mechanical
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	BTEC National Certificate in Multi-disciplinary Engineering Level 3 + Processing of Hydrocarbons
ERR	Employment Rights and Responsibilities (ERR) Induction
Training	Position and install plant and machinery Planned maintenance Diagnose and determine faults Test and monitor performance and condition

Energy and Utility Skills
Sustainable Resource Management (Autumn 2010)

Sustainable Resource Management	**Sustainable Resource Management**
Level 2	**Level 3**
Manual Mechanical Street Cleaner	Sustainability Officer
Transfer Station Technician	Refuse Collection Supervisor (Team Leader)
Compost Technician	Recycling Collection Supervisor(Team Leader)
Materials Recycling Facility Technician	Treatment (Physical/Chemical or Thermal)
Household Waste Recycling Centre Technician	Materials Recycling Facility/Household Waste Recycling Centre Supervisor
Recycling Technician (Driver/Loader)	Transfer Station Supervisor
Refuse Technician (Driver/Loader)	Biological Treatment Supervisor
Environmental Technician (including weighbridge and other activities)	Landfill Supervisor

Energy and Utility Skills with RenewableUK

Wind Turbine Operations and Maintenance
Roll-out to England Autumn 2010. Launched in Scotland. (no details of framework)

Constructionskills
Apprenticeships in:

Bench Joiner
Bricklayer
Built Up Felt Roofer
Carpenter & Joiner
Civil Engineering Operative
Civil Engineering Technician
Ceiling Fixer
Craft Mason
Crane Operative
Demolition Operative
Drylining Operative
Fibrous Plasterer
Floorlayer
Floor Covering
Formworker
General Construction Operative
Construction & Engineering Services
Glazier
Groundworker
Interior Systems, Suspended Ceiling Fixing and Partition Fixing
Lightning Conductor Engineer
Maintenance Operative
Mason Paviour
Mastic Asphalter
Painter & Decorator
Partition Erector
Plant Mechanic
Plant Operator
Plant Technician
Public Utilities Distribution
Relocatable Partitioner
Roof Sheeter and Cladder
Roof Slater and Tiler
Scaffolder
Shopfitter
Single Ply Roofer
Small Plant and Tool Fitter
Solid Plasterer

Steeplejack
Stonemason
Wall & Floor Tiler
Woodworking Machinist
Maintenance Operative
Mason Paviour
Mastic Asphalter
Painter & Decorator
Partition Erector
Plant Mechanic
Plant Operator
Plant Technician
Public Utilities Distribution
Relocatable Partitioner
Roof Sheeter and Cladder
Roof Slater and Tiler
Scaffolder
Shopfitter
Single Ply Roofer
Small Plant and Tool Fitter
Solid Plasterer
Steeplejack
Stonemason
Wall & Floor Tiler
Woodworking Machinist

Construction
Example: Civil Engineering Technician

Apprenticeship	**Civil Engineering Technician**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQ Level 3 Diploma in Construction Contracting Operations
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	Level 3 Construction Diploma in Civil Engineering
ERR	Employment Rights and Responsibilities (ERR) Induction
Training	Health and Safety Drug and Alcohol Awareness Mobile Towers Fire Fighting

	Safe use of ladders Manual handling First Aid Safe working practices in construction Managing excavation, plant and piling Laying domestic and large diameter drainage Information, quantities and communicating with others Building methods and construction technology Mathematics for civil engineers Carrying out pre-pour inspection and testing of concrete Planning and designing process and environmental considerations

Example: Demolition Plant Operation

Apprenticeship	**Demolition Plant Operation**
Level	Apprenticeship Level 2
Competency Qualification	NVQ level 2 Diploma in Plant Operations (Construction)
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Certificate in Plant Operations
ERR	Employment Rights and Responsibilities (ERR) Induction
+	CPCS Construction Plant Competence Scheme Red Trained Operator's Card

Example: Plant Maintenance

Apprenticeship	**Plant Operation (Civil Engineering Plant)**
Level	Apprenticeship Level 2
Competency Qualification	NVQ level 2 Diploma in Plant Operations (Civil Engineering)
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Certificate in Plant Operations
ERR	Employment Rights and Responsibilities (ERR) Induction
+	CPCS Construction Plant Competence Scheme Red Trained Operator's Card
Training	Health and safety Drug and alcohol awareness

	Mobile towers Fire fighting Safe use of ladders Manual handling First aid Crawler Tractor 360° Excavator Dumptruck Wheeled Loading Shovel Operating specialised plant and machinery to performance requirements, including: Lifting and transferring plant Extracting and excavating plant Construction and formation plant Transporting and discharging bulk material loads Extracting and excavating materials Lifting, transferring and positioning loads Distributing, layering and consolidating materials

Example: Lightning Conductor Engineering

Apprenticeship	**Lightning Conductor Engineering**
Level	Apprenticeship Level 2
Competency Qualification	NVQ level 2 Diploma in Accessing and Rigging Operations – Lightning Conductor Engineer
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Certificate in Accessing and Rigging
ERR	Employment Rights and Responsibilities (ERR) Induction
+	Drug and alcohol awareness Mobile towers Fire fighting Safe use of ladders Employment responsibilities and rights Health and safety Drug and alcohol awareness Mobile towers Fire fighting Safe use of ladders Manual handling First aid Preparing and storing processes

	Ladders and means of access Safety lines and anchors Bosun's seat Roof rigs Top anchors Commissioning Earthing Installations Small plant Underground cable avoidance Abrasive wheels Operating powered tools and equipment for routine and predictable requirements Installing components to the structural fabric (lightning conductor) Installing components to the structural fabric and built environment (electrical earthing and earthing cable systems) Positioning and removing specialised equipment for accessing Establishing rope access arrangements Establishing provision for fall arrest Locating and avoiding service apparatus and sub-structures Contributing to an efficient and effective work environment Contributing to health and safety in the workplace Commissioning installations for use (lightning conductor systems) Roof repairs Industrial Rope Access Mobile Elevating Working Platform New Roads and Street Works

Example: Drylining

Apprenticeship	**Drylining**
Level	Apprenticeship Level 2
Competency Qualification	NVQ Level 2 Diploma in Interior Systems - Drylining
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Construction Diploma in Drylining
ERR	Employment Rights and Responsibilities (ERR) Induction
Training	Health and Safety Drug and alcohol awareness Mobile towers

	Fire fighting Safe use of ladders Manual handling First aid Carry out safe working practices in construction Information, quantities and communicating with others Building methods and construction technology Finish drylining joints Install drylining and encasements Install drylining partition systems

Example: Interior Systems – Suspended Ceiling Fixing and Partition Fixing

Apprenticeship	**Suspended Ceiling Fixing and Partition Fixing**
Level	Apprenticeship Level 2
Competency Qualification	NVQ Level 2 Diploma in Interior Systems – (Ceiling Fixing/Relocatable Partitions)
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Construction Diploma in Interior Systems (Ceiling Fixing/Relocatable Partitions)
ERR	Employment Rights and Responsibilities (ERR) Induction
Training	Health and Safety Drug and alcohol awareness Mobile towers Fire fighting Safe use of ladders Manual handling First aid Materials Tools Proprietary systems Installing components to structural fabric (including laser) Services Specifications and schedules Storing resources Erecting and dismantling working platforms Contributing to efficient working practices Mobile elevated working platform Installing suspended ceiling systems Installing suspended ceiling cavity barrier systems Doors, hanging fixing locks and furniture

	Removing and relocating aluminium framed partition systems Installing relocatable aluminium framed partition systems

Example: Roof Slating and Tiling

Apprenticeship	**Roof Slating and Tiling**
Level	Apprenticeship Level 2
Competency Qualification	NVQ Level 2 Diploma in Roofing Occupations
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Construction Diploma in Roof Slating and Tiling
ERR	Employment Rights and Responsibilities (ERR) Induction
Training	Health and Safety Drug and alcohol awareness Mobile towers Fire fighting Safe use of ladders Manual handling First aid Carry out safe working practices in construction Information, quantities and communicating with others Building methods and construction technology Install single-lap roof coverings to a variable gauge Install plain roof tile coverings Install regular sized natural roof slates to standard details Strip and reclaim pitched roof coverings Install roofing backgrounds and components Install pre-formed weathering flashings to roofs

Example: General Construction

Apprenticeship	**General Construction**
Level	Apprenticeship Level 2
Competency Qualification	NVQ Level 2 Diploma in Construction Operations
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Construction Diploma in Construction Operations

ERR	Employment Rights and Responsibilities (ERR) Induction
Training	Health and Safety Drug and alcohol awareness Mobile towers Fire fighting Safe use of ladders Manual handling First aid Safe use of small plant Installing drainage and service ducts Basic concreting Erecting and dismantling a basic working platform Setting out

Example: Highway Maintenance

Apprenticeship	**Highway Maintenance**
Level	Apprenticeship Level 2
Competency Qualification	NVQ Level 2 Diploma in Construction
Functional /Key Skills	English Level 1 Mathematics Level 1
Knowledge Qualification	Level 2 Construction Diploma in Highway Maintenance
ERR	Employment Rights and Responsibilities (ERR) Induction
Training	Health & Safety Drug and Alcohol Awareness Mobile towers Fire Fighting Safe use of ladders Manual handling First Aid Safe use of small plant Work area protection Segregation of highway works Locating and protecting utilities in the highway Excavations Reinstatement of highways Interpreting information Estimating resources Basic building methods Building elements

	Building materials

e-skills UK
Apprenticeships linked to Green IT

ICT practitioner/professional System Support Technician Radio Systems Design Engineer IT Architecture and Security Equipment Wirer and Assembler Systems Production

Example: ICT Apprenticeship

Apprenticeship	**ICT**
Level	Apprenticeship Level 2
Competency Qualification	NVQ Level 2 IT User
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	Level 2 Certificate in ICT
ERR	Employment Rights and Responsibilities (ERR) Induction

Apprenticeship	**ICT**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQ Level 3 IT User
Functional /Key Skills	English Level 2 Mathematics Level 2
Knowledge Qualification	BTEC National Award for IT practitioners
ERR	Employment Rights and Responsibilities (ERR) Induction

Example: ICT Professional

Apprenticeship	**ICT Professional**
Level	Apprenticeship Level 2
Competency Qualification	NVQ Level 2 Diploma in ICT Professional Competence
Functional /Key	English Level 1

Skills	Mathematics Level 1
Knowledge Qualification	Level 2 Award in ICT Systems and Principles
ERR	Employment Rights and Responsibilities (ERR) Induction

Skillsmart
Retail Apprenticeships

Apprenticeship	**Retail**
Level	Apprenticeship level 2
Competency Qualification	Retail Skills Level 2
Functional /Key Skills	English Level 1 Maths Level 1
Knowledge Qualification	Retail knowledge Level 2
ERR	Employment Rights and Responsibilities (ERR) Induction

The Institute of the Motor Industry
Motor vehicle apprenticeships

Apprenticeship(s)	Vehicle Maintenance and Repair Vehicle Fitting Vehicle Body and Paint Vehicle Parts Vehicle Sales Roadside Assistance and Recovery
Level	Apprenticeship level 2
Competency Qualification	NVQ Level 2
Functional /Key Skills	Maths English Level 1
Knowledge Qualification	Technical Certificate (VRQ) level 2
ERR	Employment Rights and Responsibilities (ERR) Induction

Goskills

Apprenticeship(s)	Aviation Operations Rail Engineering Road Passenger Transport (Bus and Coach)

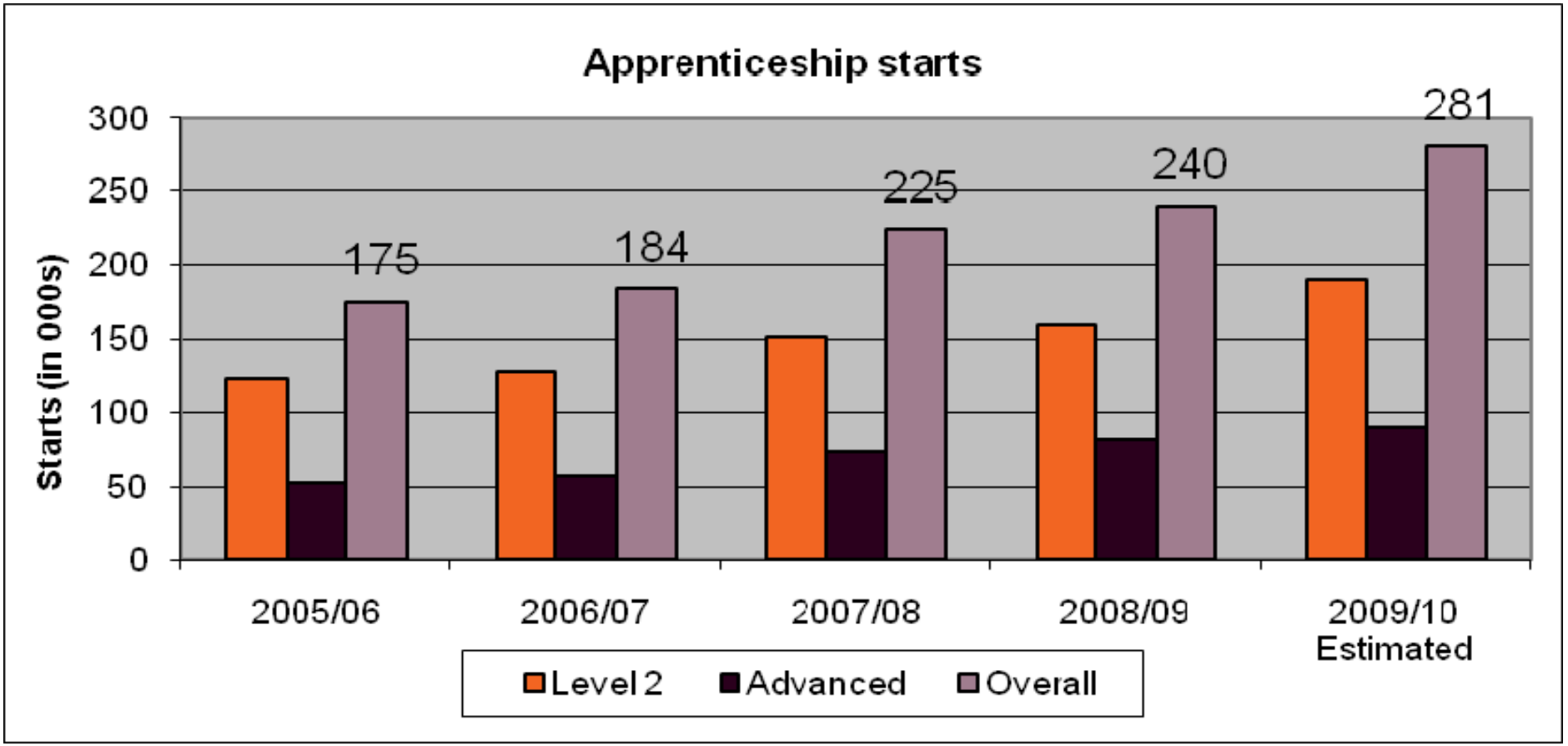
	Transport Engineering (Bus and Coach)
Example	**Transport Engineering (Bus and Coach)**
Level	Apprenticeship Level 2
Competency Qualification	NVQ Level 2 transport Engineering and Maintenance
Functional /Key Skills	Maths Level 1 English Level 1
Knowledge Qualification	Certificate in Transport Engineering and Maintenance level 2
ERR	Employment Rights and Responsibilities (ERR) Induction

Skills for Logistics

Apprenticeship(s)	Warehousing and Storage Level 2 Carry and Deliver Goods Level 2 Driving Goods Vehicles Level 2 and 3 Logistics Operations Management Level 3 Mail Services Level 2 Traffic Office Level 2 and 3 Supply Chain Management Level 2 and 3
Example	**Logistics Operations Management**
Level	Advanced Apprenticeship Level 3
Competency Qualification	NVQ Level 3
Functional /Key Skills	Maths 2 English Level 2
Knowledge Qualification	CILT Certificate in Logistics and Transport
ERR	Employment Rights and Responsibilities (ERR) Induction

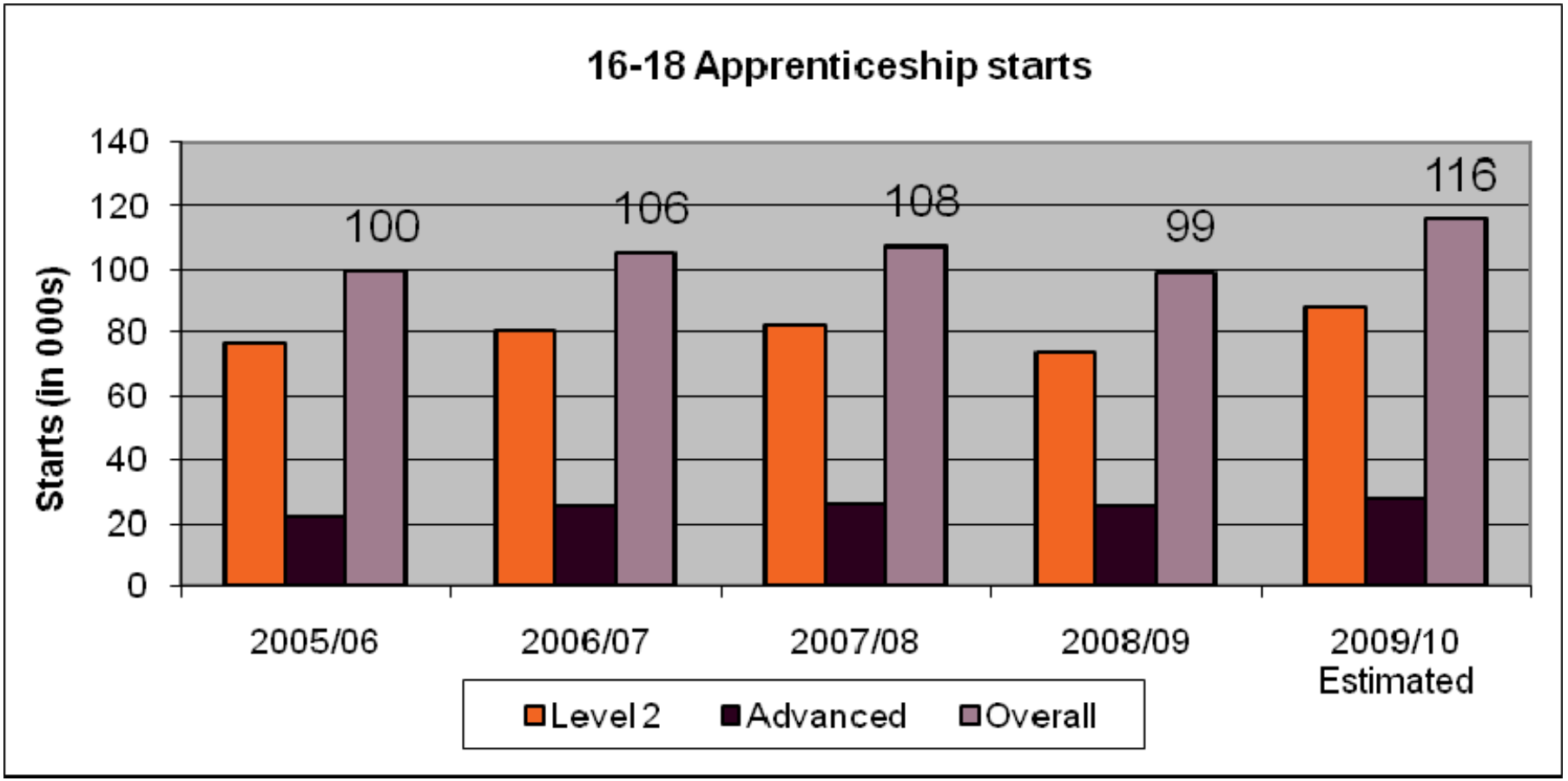
Annex B

Historical Starts (England)
(by permission National Apprenticeship Service)



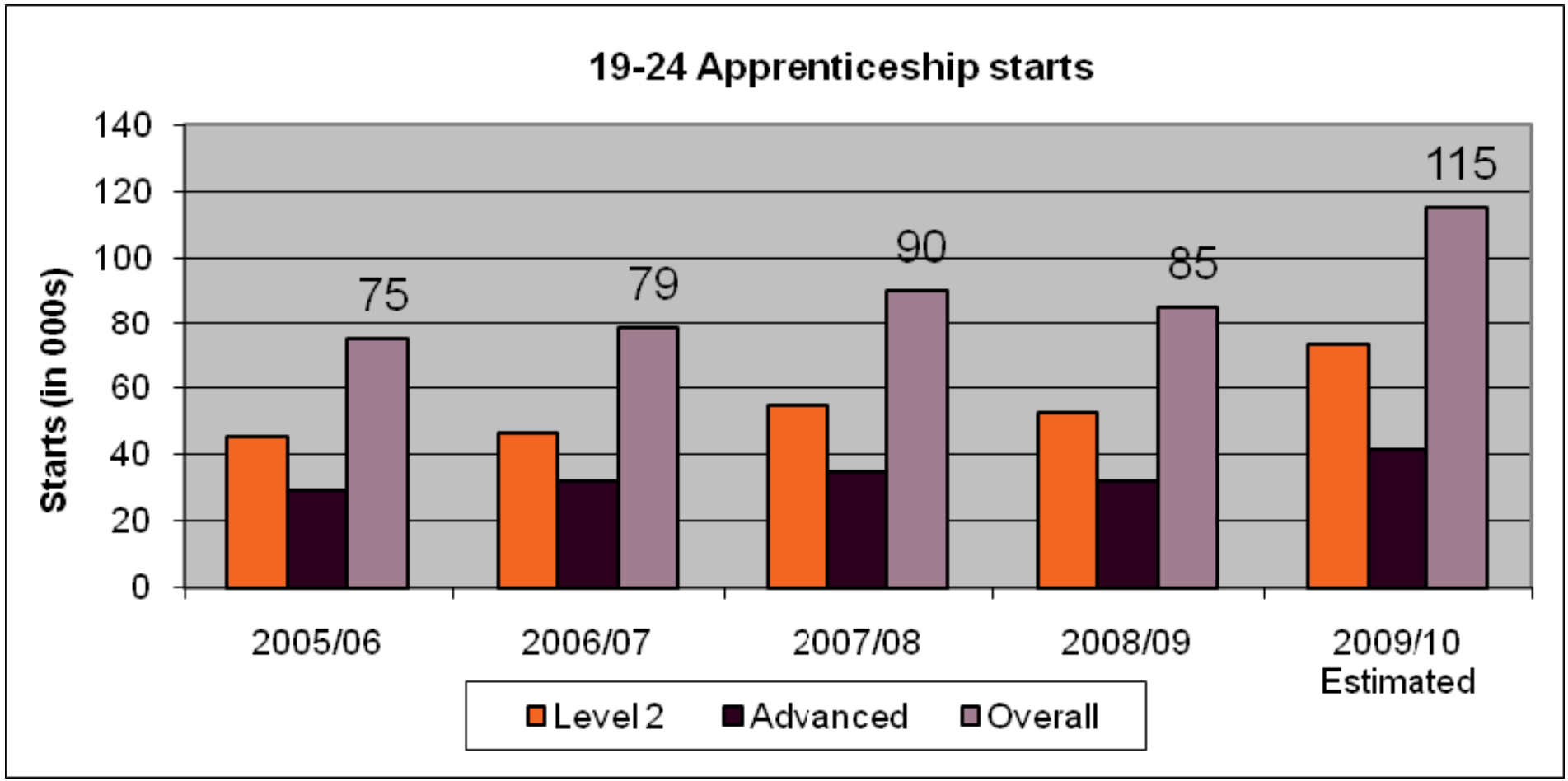
Annex C

Historical 16-18 starts (England)
(by permission National Apprenticeship Service)



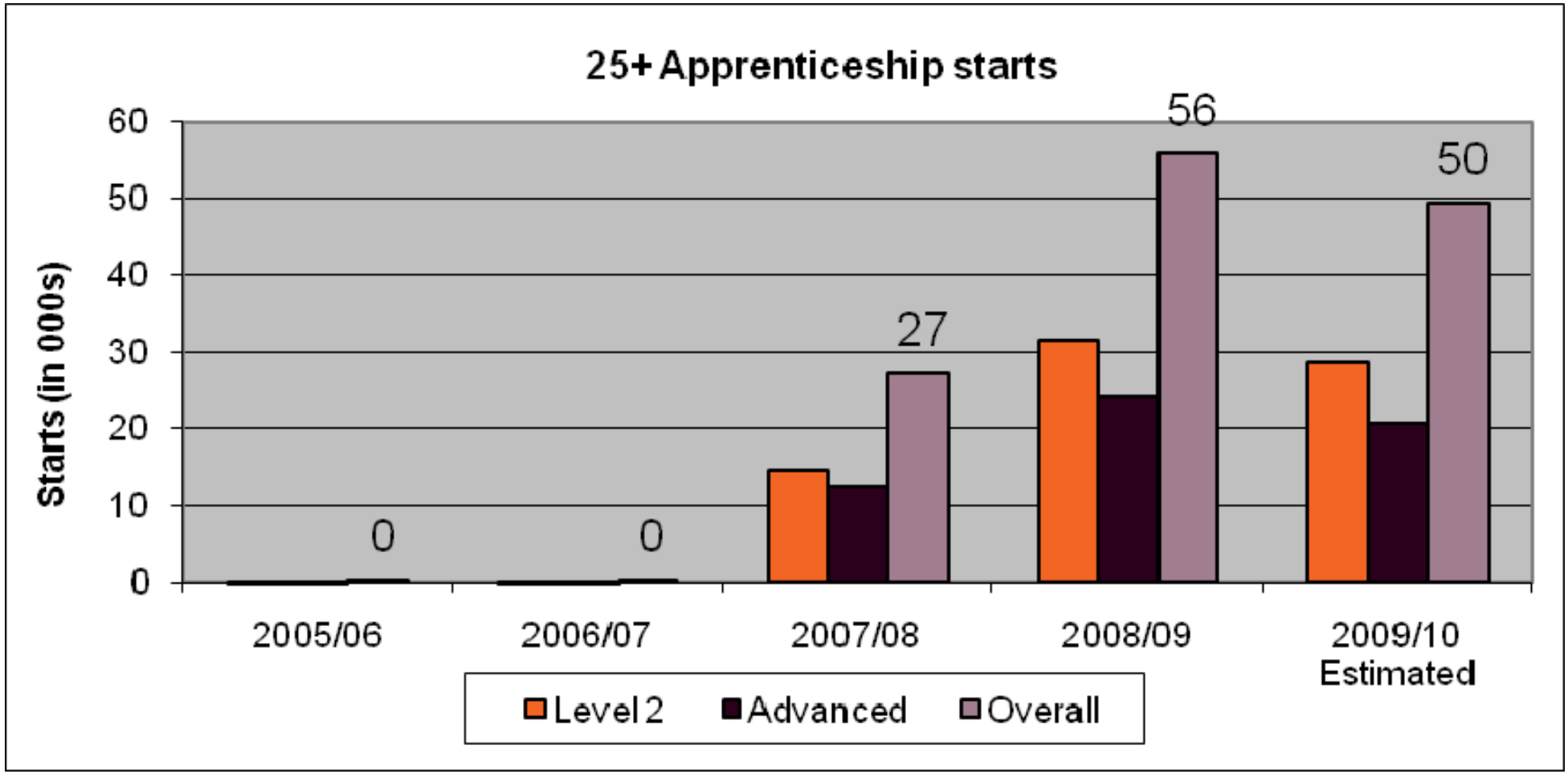
Annex D

Historical 19-24 starts (England)
(by permission National Apprenticeship Service)



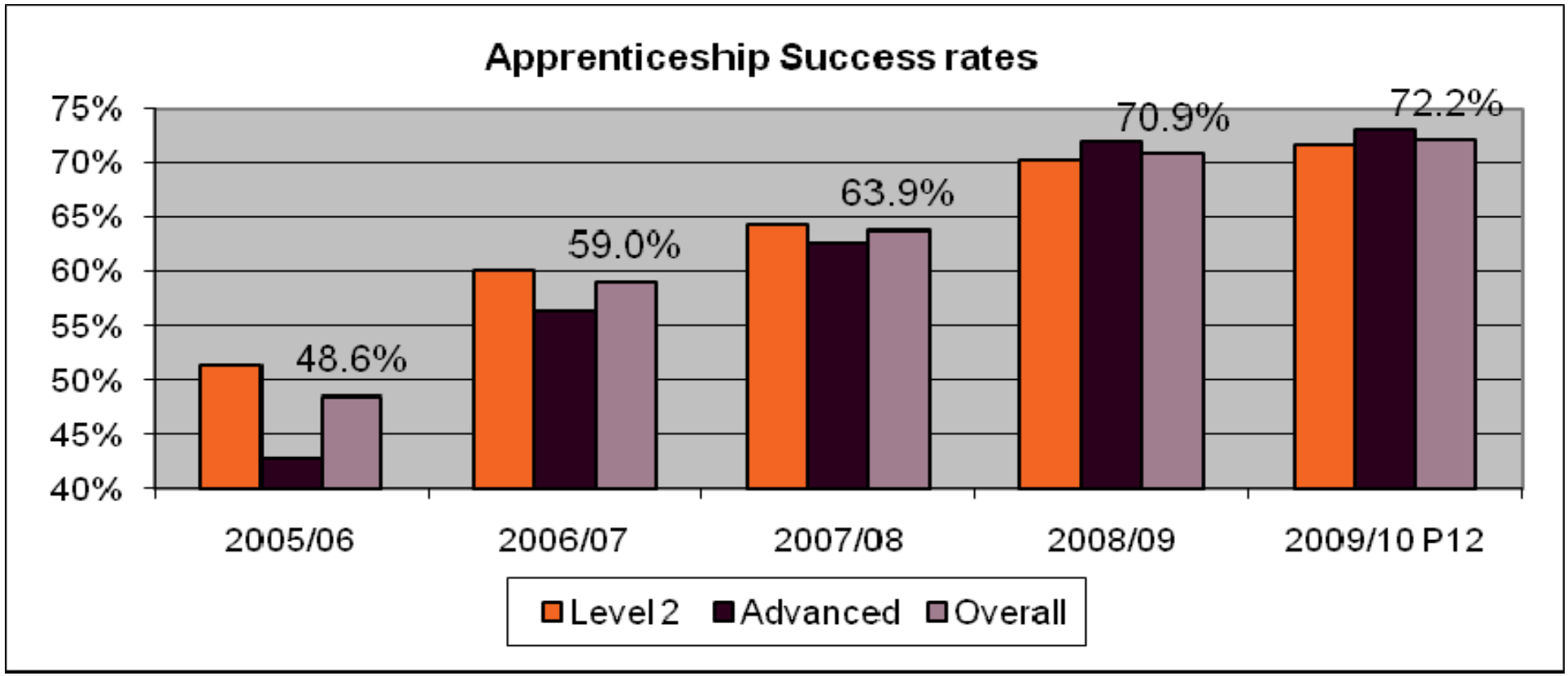
Annex E

Historical 25+ starts (England)
(by permission National Apprenticeship Service)



Annex F

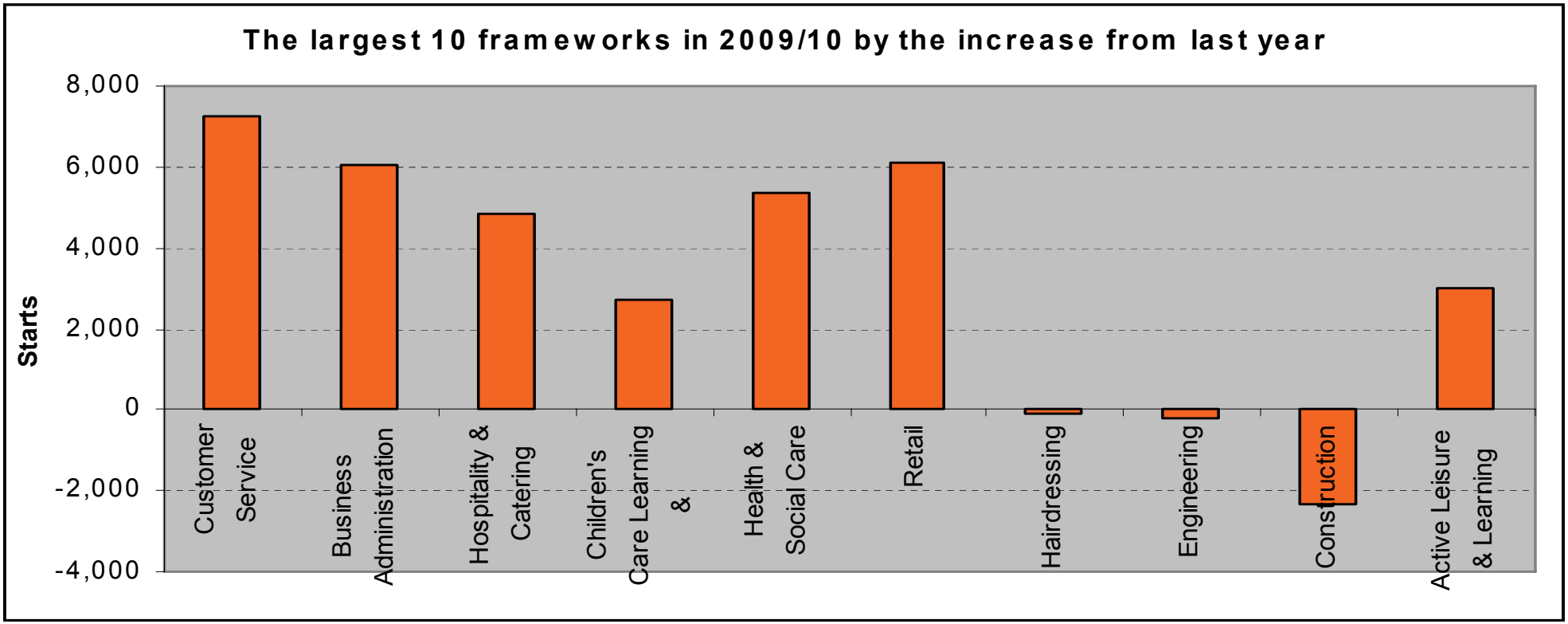
Historical Success Rates (England)
(by permission National Apprenticeship Service)



Annex G

Framework Increase from last year (England) *(by permission National Apprenticeship Service)*

The chart shows the increase in the volume of starts in 2009/10 from the same period last year for the largest frameworks in 2009/10. Only Hairdressing (1%), Engineering (1%) and Construction (15%) decreased in volume.



Annex H

Framework Comparison to Last Year
(by permission National Apprenticeship Service)

Framework	**2009/10**	**2008/09**	**Difference**	
Customer Service	29,400	22,100	7,300	33%
Business Administration	26,500	20,500	6,100	30%
Hospitality & Catering	20,900	16,100	4,900	30%
Children's Care Learning & Development	19,600	16,900	2,700	16%
Health & Social Care	17,400	12,000	5,400	45%
Retail	16,800	10,700	6,100	57%
Hairdressing	15,800	15,900	-100	-1%
Engineering	14,500	14,700	-200	-1%
Construction	13,400	15,700	-2,400	-15%
Active Leisure & Learning	10,800	7,800	3,000	39%

Annex J

Apprenticeship Framework Achievements by Government Office Region (2005/06 to 2010/11 early estimates)

Region	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
	Full Year	Full Year	Full Year	Full Year	Full Year	August to October (provisional)
North East	7,220	7,960	7,640	9,990	11,820	2,770
North West	16,570	19,320	19,010	22,770	26,930	6,900
Yorkshire and The Humber	12,730	15,550	15,380	19,230	22,130	4,860
East Midlands	10,160	10,980	10,710	13,600	16,060	3,820
West Midlands	12,240	13,680	13,570	17,280	19,410	4,800
East of England	8,870	9,950	9,980	12,440	15,030	3,240
London	5,280	6,250	6,210	8,620	11,780	2,560
South East	13,450	14,870	16,300	20,610	25,330	5,970
South West	11,230	12,120	12,540	17,210	21,540	5,830
England Total	**97,700**	**110,700**	**111,300**	**141,700**	**170,000**	**40,700**
Other	940	1,160	1,240	1,650	1,460	400
Grand Total	**98,700**	**111,800**	**112,600**	**143,400**	**171,500**	**41,100**

Notes

Statistical First Release table, The Data Service (BIS and SFA)

Annex K

Apprenticeship Framework Achievements by Government Office Region and Local Authority (2005/06 to 2010/11 early estimates)

Local Authority	2005/06 Full Year	2006/07 Full Year	2007/08 Full Year	2008/09 Full Year	2009/10 Full Year	2010/11 August to October (provisional)
Derby	600	660	640	930	1,100	270
Derbyshire	2,090	2,240	2,170	2,630	3,070	790
Leicester	370	440	470	580	730	160
Leicestershire	1,390	1,410	1,430	1,660	2,070	450
Lincolnshire	1,610	1,800	1,670	2,140	2,600	550
Northamptonshire	1,520	1,630	1,590	2,010	2,410	560
Nottingham	510	630	600	740	930	210
Nottinghamshire	2,030	2,120	2,100	2,830	3,050	800
Rutland	40	50	60	80	90	30
Total	**10,160**	**10,980**	**10,710**	**13,600**	**16,060**	**3,820**

Statistical First Release table, The Data Service (BIS and SFA)

Annex L

Apprenticeship Framework Achievements by Sector

Sector Subject Area	Total								
	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
	Full Year	Full Year	Full Year	Full Year	Full Year	Full Year	Full Year	Full Year	August to October (provisional)
Agriculture, Horticulture and Animal Care	1,140	1,290	1,380	2,110	2,360	2,460	3,160	3,660	920
Arts, Media and Publishing	-	30	100	170	190	160	10	230	10
Business, Administration and Law	11,050	13,160	17,470	23,790	25,100	23,550	36,390	46,740	12,010
Construction, Planning and the Built Environment	3,640	5,620	9,290	14,850	17,300	17,810	22,330	20,830	4,850
Education and Training	-	-	20	40	50	40	150	540	250
Engineering and Manufacturing Technologies	8,280	8,340	12,010	18,210	21,470	20,770	22,890	26,090	6,190
Health, Public Services and Care	3,370	3,410	5,320	10,570	12,860	13,800	19,430	24,380	5,720
Information and Communication Technology	780	2,470	2,920	4,270	4,880	5,550	5,670	7,770	1,640
Languages, Literature and Culture	-	-	-	-	-	-	-	-	-
Leisure, Travel and Tourism	1,740	1,950	1,940	3,010	3,830	3,600	5,900	9,160	2,110
Preparation for Life and Work	-	-	50	140	30	10	-	-	-
Retail and Commercial Enterprise	10,680	12,800	16,360	21,170	23,490	24,430	27,430	32,090	7,450
Science and Mathematics	-	-	30	40	20	-	-	-	-
Unknown	1,770	190	340	310	240	410	30	-	-
Grand Total	**42,400**	**49,300**	**67,200**	**98,700**	**111,800**	**112,600**	**143,400**	**171,500**	**41,100**

Statistical First Release table, The Data Service (BIS and SFA)