

BUILD UP Skills – United Kingdom 2020 Skills Roadmap and Action Plan



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Introduction

Build Up Skills UK is an alliance of four Sector Skills Councils (SSCs)¹: Asset Skills, CITB-ConstructionSkills, Energy & Utility Skills and SummitSkills. Working in collaboration these SSCs are undertaking a programme of research to ensure that employers in the built environment sector in the UK have the skilled workforce (specifically craft and technical 'blue collar' workers) required to meet EU 2020 energy efficiency targets:

- to reduce energy consumption by 20%;
- to reduce greenhouse gas emissions by 20%;
- to meet 20% of energy needs through renewable resources.

For the purpose of this document, 'blue collar' workers are defined as typically referring to workers that are based on some form of site and carry out physical or manual work – for example bricklayers, plasterers, roofers etc. Professionals were out of scope for this research.

In June 2011 Build Up Skills UK submitted a proposal to draw down funding from the Intelligent Energy Europe programme². Following the acceptance of this proposal, a programme of research began in November 2011.

This document presents the 2020 Skills Roadmap and Action Plan. The aim of this document is to identify measures to overcome barriers and skills gaps to help meet the 2020 energy efficiency targets and embed relevant training; and to determine actions required to implement the necessary measures.

The process of developing this document has utilised the analysis of the National Status Quo³, a comprehensive review of existing skills, training and qualification provision and anticipated skills needs in relation to the meeting the EU 2020 energy efficiency targets in the built environment sector.

¹ Employer-led bodies licensed by the UK Government to raise skills levels across the workforce by researching existing and future skills needs, identifying skills gaps and developing solutions including Apprenticeships, National Vocational Qualifications (NVQs) and National Occupational Standards (NOS)

² <http://ec.europa.eu/energy/intelligent/>

³ Completed in May 2012 by Pye Tait Consulting on behalf of Build Up Skills UK

A number of consultation events have also taken place between August and October 2012 to develop and refine the content:

- 'Showcase' event to introduce the work and gain preliminary views;
- Three nation-specific consultations in Wales, Scotland and Northern Ireland;
- Consultation with Higher Education representatives;
- Consultation with three employer groups in the North of England, Midlands and South of England;
- Consultation with Further Education representatives;
- Consultation with Federations and associations;
- Consultation with Awarding Organisations.

Findings and recommended actions within an earlier draft of this document have been tested during a series of consultation events that took place during November 2012, in order to produce this final version.

Structure of the 2020 Skills Roadmap and Action Plan

The first half of this document provides a brief summary of the findings from the Status Quo report⁴ in relation to:

- The UK's energy efficiency targets and contribution towards them from the built environment sector;
- Skills and qualification needs;
- Anticipated barriers to meeting the 2020 energy efficiency targets.

The remainder presents the strategy and suggested actions required to tackle these issues. The overall strategy is summarised with key objectives through to 2020 on page 14, followed by a more detailed explanation on page 15. Each of the key objectives is then broken down into a series of actions - with the resources/inputs required, likely timing and approaches needed to monitor progress - on pages 16-37. Included within each objective are factors for consideration, such as risks.

⁴ The full report can be accessed via: <http://www.buildupskillsuk.org/status-quo>

Context for the Skills Roadmap and Action Plan

Energy efficiency targets and potential contribution towards energy savings

Energy efficiency targets for the UK

The overarching EU 2020 energy efficiency targets are to:

- to reduce energy consumption by 20%;
- to reduce greenhouse gas emissions by 20%; and
- to meet 20% of energy needs through renewable resources.

In the UK, the Climate Change Act 2008 was the first long-term legally binding framework to tackle the dangers of climate change⁵. The Climate Change (Scotland) Act 2009 sets in statute the target to reduce Scotland's emissions of greenhouse gases by 80% by 2050.

Renewable energy

The Directive on renewable energy⁶ states that by 2020 the EU will source 20% of its energy from renewable sources. The UK has committed to achieving 15% of its energy from renewable sources in 2020⁷, broken down as follows:

- Approximately 30% of electricity demand, including 2% from small-scale sources;
- 12% of heat demand;
- 10% of transport demand⁸.

In Scotland the objective is for renewable sources to generate the equivalent of 100% of Scotland's gross annual electricity consumption by 2020 and for renewable sources to provide the equivalent of 11% of Scotland's heat demand by 2020⁹.

⁵ http://www.decc.gov.uk/en/content/cms/legislation/cc_act_08/cc_act_08.aspx

⁶ Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC

⁷ In comparison to 1.3% in 2005 and 2.9% in 2009.

⁸ Department of Energy and Climate Change (DECC) (2009), *National Renewable Energy Action Plan*

⁹ Data from the Scottish Government

Wales aims to double its renewable electricity by 2025, with 4GW from marine energy, while Northern Ireland has set targets of 40% for renewable electricity and 10% renewable heat by 2020¹⁰.

Energy Performance of Buildings Directive

The Energy Performance of Buildings Directive¹¹ (EPBD) was implemented by the European Parliament in 2003 and was particularly relevant for developers, owners and operators of domestic and non-domestic buildings in the UK. When the EPBD was implemented, it required EU Member States to specify, police and review minimum energy performance requirements for new and existing buildings. However, given that buildings are responsible for 40% of total energy consumption in the European Union¹², and almost 50% in the UK¹³, the Commission concluded that more could be done to make carbon savings in this area. As a result, the 2010 EPBD made the minimum energy performance requirements more stringent. Notably new buildings in the EU will have to consume 'nearly zero'¹⁴ energy (as at December 2020) and be sourced 'to a very large extent' from renewable sources.

Expected contribution of the built environment sector

In the UK the built environment sector has significant influence over CO² emissions, at almost 47% of the total. Currently manufacturing accounts for the largest amount of emissions within the construction process. The UK's 1.8 million non-domestic buildings account for a third of CO² emissions in the building sector. Three-quarters of these buildings were built before building regulations were introduced. Typically larger in roof and floor space, they offer substantial potential for on-site renewables.

Renewable energy sources

In 2011, renewables accounted for almost 7% of the UK's electricity supply. Power generated on wind farms has increased by nearly 500%, meaning that onshore wind can provide sufficient electricity for around 1.7 million homes¹⁵. Furthermore there has been an increase of nearly 10% in the UK's Combined Heat and Power (CHP) capacity during the period 2008 to 2010¹⁶; generation of low carbon electricity rose from 23% to 28.5% in 2011.

¹⁰ DECC (2011), *UK Renewable Energy Roadmap*

¹¹ Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings

¹² Zero Carbon Hub and NHBC Foundation (2011), *Introductory guide to the recast EPBD-2*

¹³ <http://www.communities.gov.uk/planningandbuilding/theenvironment/energyperformance/>

¹⁴ The EPBD Directive defines a nearly zero-energy building as one that has "a very high energy performance", and for which "the nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced onsite or nearby". Commentators often criticise this definition because it is open to interpretation, particularly when distinguishing between carbon and energy

¹⁵ DECC (2011), *Housing Energy Fact File*

¹⁶ DECC Energy Statistics

Qualifications & skills needs, and accreditation/quality assurance

Qualification needs

The majority of respondents do not perceive a widespread need for brand new qualifications to be developed from scratch, in order to deliver skills and knowledge needed among the blue collar workforce. The general consensus among respondents to the research is that existing qualifications can, for the most part, be refined and expanded without the need to create a large suite of brand new qualifications.

Stakeholders in the building sector strongly argue that there is a need for a greater number of accredited qualifications based on National Occupational Standards (NOS) rather than non-accredited, shorter courses - as respondents are concerned about the emergence of unregulated short courses which could result in poorly trained workers, and ultimately, poor quality work. Stakeholders also suggest there may be a need to increase the range of units within qualifications available at Level 3 – however this may impact more on the professional than the blue collar workforce.

Findings from the Status Quo suggest that the following aspects need to be addressed via development or enhancement of qualifications for the blue collar built environment workforce (in addition to ascertaining that skills and knowledge gaps outlined below are sufficiently addressed in existing qualifications as if not the case, these will need to be addressed):

- Understanding the principles of heat loss;
- Understanding air quality, air tightness and ventilation requirements within buildings;
- Knowledge of the range of energy efficiency measures, and their suitability for different building fabrics and ages, including pre-1919 stock and hard to treat buildings;
- The so-called 'hierarchy' of energy efficiency measures, i.e. the sequence in which issues in buildings must be addressed in order to ensure maximum energy efficiency;
- Installation of ground and air source heat pumps;
- Installation of solar thermal and solar PV;
- Installation of energy recovery, energy efficient cooling and shallow geothermal systems;
- Installation of biomass, combined heat and power and wind turbines.

In addition feedback from the consultation events for the Roadmap points to the need to give consideration to skills and knowledge in

relation to waste and water management, understanding of recyclable materials and embodied energy. There is a further need to ensure that skills and knowledge among the workforce is also fit for purpose in relation to Modern Methods of Construction (MMC) as these continue to evolve over time.

Feedback from the Status Quo suggests further specialist units in the following areas will be required to be added to existing qualifications in order to meet the 2020 targets:

- Energy consumption;
- The 2020 targets and what they mean for the building sector;
- Legislation relating to energy efficiency (as it continues to emerge) and what this means for the building sector;
- Quality assurance specifically in relation to energy efficiency materials, measures and procedures;
- Energy saving behaviours – information to educate consumers;
- Training on ‘selling’ the energy efficiency agenda to consumers to stimulate demand for energy saving measures.

In addition respondents to the Status Quo research have suggested that the quality of provision and knowledge/expertise of tutors can be inconsistent UK-wide, and a clear need has been identified for ‘train the trainer’ provision. Furthermore it is anticipated that additional Continuing Professional Development (CPD) will need to be on offer for tutors to enable them to maintain up-to-date awareness of new technologies as they develop.

It should be noted that the majority of respondents are confident that a great deal of work has already taken place to develop new (or updated) qualifications – however without clearly evidenced market demand for energy efficiency measures, industry is unlikely to invest in this training. Working on the basis that this barrier can be overcome and that there will be consumer demand for energy efficiency, research suggests that training provision for solar PV and solar thermal are relatively well catered for, but that there is limited provision in relation to emerging technologies such as biomass and air and ground source heat pumps.

The ability to identify relevant training provision quickly and easily is a critical success factor, yet employers and stakeholders have strongly argued that the lack of relevant information about a) what type of training is required and b) where and how this can be accessed is acting as a substantial hindrance, suggesting a need for promotion of relevant training provision.

Another concern for the sector relates to a perceived inflexible training offer, which can prevent uptake and demand for training, for example where course times do not align with industry needs and/or if there is limited on-site based training and assessment.

Respondents are keen to avoid training that is largely focused on the theory, with little practical content, and want qualifications to be clearly underpinned by National Occupational Standards (NOS).

Accreditation and quality assurance

The accreditation process in the UK seeks to establish competence, typically via some form of certification¹⁷. Organisations that recognise competence and award certificates must themselves be formally accredited by accreditation bodies such as the UK Accreditation Service (UKAS). Competence may also be established via Quality Marks (QM), which typically operate by setting agreed standards of quality, and only the organisations that can meet the criteria in relation to their services are awarded the QM. There are a number of ways in which assessment takes place – from self-accreditation with supporting evidence through to comprehensive verification visits. For some schemes organisations are required to sign up to a Code of Practice. There are a range of different schemes operating in the built environment sector including for example:

The Microgeneration Certification Scheme (MCS) - a quality assurance scheme, which certifies microgeneration technologies used to produce electricity and heat from renewable sources. To become MCS accredited, organisations must meet the relevant standards and be assessed by an approved certification body.

The Considerate Constructors Scheme - established with the aim of improving the image of construction and raise standards, to exceed those required of statutory legislation. It operates through a voluntary code of practice and is non-profit making, funded only through its registrations. Organisations and sites can sign up to the scheme and are monitored against a Code of Considerate Practice.

TrustMark - regular on-site inspections check organisational technical skills/quality of work, trading record (including customer satisfaction) and financial status. Organisations sign up to a Code of Practice including best practice in relation to customer care and health & safety.

The Green Deal Quality Mark - Government-backed and only authorised installers, assessors and providers will be able to use the logo. Details will be held on a central register and organisations and individuals have to sign up to a Code of Practice.

¹⁷ 'Accreditation in this context differs from "accredited" training courses, which are defined as those leading to a recognised qualification or 'level' of achievement on the appropriate nation qualification framework

Skills and knowledge needs for the blue collar workforce

Technical skills needs	Technical knowledge needs
<ul style="list-style-type: none"> ▪ Installation of solar thermal and solar photovoltaic (PV) ▪ Installation of energy recovery/efficient cooling/shallow geothermal systems ▪ Installation of biomass, combined heat and power & wind turbines ▪ Installation of ground and air source heat pumps¹⁸ ▪ Installation of solid wall and cavity wall insulation, and building fabrics they are suitable for ▪ Installation of switches and thermostats ▪ Ability to use geotechnical measurement equipment and carbon assessment tools ▪ Ability to work with more precise tolerances and a greater degree of technical accuracy ▪ Skills in Building Information Modelling (BIM)¹⁹ ▪ Ability to install different energy efficiency systems and technologies (as they continue to evolve over time) having identified which best suits the needs of a range of buildings (age and fabric) ▪ Skills in water and waste management 	<ul style="list-style-type: none"> ▪ Legislation e.g. F Gas and targets relating to energy efficiency (as it evolves) and what this means for the built environment sector; awareness of energy consumption ▪ Awareness of building regulations and how they will continue to evolve over time ▪ Understanding of the principles of heat loss, heat gain and moisture movement ▪ Understanding of and skills in relation to off-site manufacturing ▪ Understanding air quality, air tightness and ventilation requirements of buildings (including the implications of “getting it wrong” in relation to air tightness in particular) ▪ Knowledge of the range of energy efficiency measures, and their suitability for different building fabrics and ages, including pre-1919 and hard to treat buildings ▪ The so-called ‘hierarchy’ of energy efficiency measures, i.e. the sequence in which issues in buildings must be addressed to ensure maximum energy efficiency ▪ Knowledge of a range of different types of insulation treatments and their suitability for various buildings including thermal insulation ▪ Understanding of building physics and how different energy efficiency measures will impact on other installations (current and future) within a building, and the structural implications (for example air tightness) of implementing changes ▪ Knowledge of different types of low carbon materials – including the design lifecycle ▪ Quality assurance specifically in relation to energy efficiency ▪ Understanding of the impact/contribution of effective water and waste management ▪ Knowledge and understanding of recyclable materials and embodied energy
Other skills and knowledge needs	
<ul style="list-style-type: none"> ▪ Communication and sales skills – notably the ability to explain financial mechanisms such as the Green Deal and to translate technical jargon ▪ Administrative skills ▪ Understanding of occupational remits/impacts e.g. an electrician installing solar panels on a roof and how this might affect the infrastructure – elements of multi-skilling possibly needed ▪ Leadership and management skills ▪ STEM (science, technology, engineering and mathematics) skills 	

¹⁸ Service and maintenance technicians for the ground and air source heat pumps that are being installed must be F Gas-qualified operatives

¹⁹ Defined by the Royal Institute of British Architects (RIBA) as: *digital representation of physical and functional characteristics of a facility creating a shared knowledge resource for information about it forming a reliable basis for decisions during its life cycle, from earliest conception to demolition*

Skills and knowledge in relation to retrofit will become increasingly significant in working towards the targets – but this should not be at the exclusion of low/zero carbon methods of construction within new build. Stakeholders note the need to enhance traditional craft skills with knowledge and understanding of new technologies and energy efficient materials.

Skills gaps and potential for multi-skilling

Evidence drawn from the Status Quo research suggests that many jobs associated with the move to a low carbon economy will not be new, but involve up-skilling, or 'greening' of existing skills. Respondents suggest a move towards multi-skilling, for example electricians are likely to need to be able to know how to install solar PV on a roof; alternatively the roofer may require the skills to install this. Therefore this indicates an opportunity for workers to "top up" their skill, for example in order to be able to work with new technologies. However it should also be noted that industry has mixed views about multi-skilling – that SMEs and micro businesses/individuals are likely to need to be more adaptable and agile, whereas larger businesses are more likely to continue employing specific occupations to carry out tasks associated only with that job role.

A number of stakeholders note that this can present potential issues that it could be risky to expect an electrician to fit a heat pump, for example, without appropriate training. In some cases, depending on the systems needed, stakeholders consider that skills should be fairly readily transferrable - however there have been instances where workers have been injured or worse as a result of trying to do a task for which they were inadequately prepared. This suggests that the phrase 'multi-skilling' can mean different things to different people, organisations and/or industries. The ability to multi-task within an occupation clearly needs to be underpinned by appropriate skills and knowledge.

The Status Quo research estimates that nearly a fifth (18.6%) of blue collar workers in the built environment sector may require some form of up-skilling to help meet the EU 2020 energy efficiency targets. Feedback from the Status Quo research as well as recent consultation events indicates that the sector emphasises the importance of ensuring existing skillsets are fit for purpose first – a solid foundation upon which to bolt on additional skills and knowledge, again underpinning a need for *consistent* high quality training.

Just over a fifth of respondents to the Status Quo considered (when interviewed in early 2012) that it is very likely there is the capacity needed in the current workforce in order to meet the 2020 energy efficiency targets – however half of all respondents felt it was not very or not at all likely that there would be sufficient capacity. The Status Quo research estimated the number of employees mapped to each of the occupations within the blue collar workforce, likely to require training to help meet the targets:

Occupation	Estimate of training requirement 2012-2020
Construction and building trades not elsewhere classified	66,000
Glaziers, window fabricators and fitters	12,700
Plumbers; heating and ventilation/air conditioning/refrigeration engineers	52,000
Construction operatives	23,000
Roofers, roof tilers and slaters	10,000
Bricklayers and masons	2,000
Electricians and electrical fitters	39,000
Carpenters and joiners	28,000
Floorers and wall tillers	5,000
Plasterers	6,500
Painters and decorators	7,200
Scaffolders, staggers and riggers	1,000
Steel erectors	120
TOTAL	252,520

In addition, estimates calculated in 2011 suggest the following numbers will require training specifically for Green Deal/ECO:

	2012	2013	2014	2015	2016	2017	2018	2019	2020	TOTAL
Insulation Installers expressed as full-time equivalent-years (FTE-Y) employment generated	7,840	10,280	11,610	15,400	17,870	19,720	20,030	20,300	19,670	142,720
Numbers of Green Deal Apprentices	390	510	560	740	860	950	960	980	970	6,920
Numbers of Green Deal Qualifications delivered using existing qualifications and delivered to existing workforce	5,170	10,280	7,660	6,780	5,360	3,940	3,340	3,050	2,950	48,530

Skills and knowledge needs for the professional workforce

A major concern among respondents for this research is that its scope has been restricted to the blue collar workforce. Feedback from employers and industry stakeholders suggests that the following occupations and skills/knowledge needs need to be urgently addressed:

- Energy Advisor/Assessor (wide-ranging skills and knowledge needs);
- Architects (low carbon design skills; whole life costing);
- Planners (understanding of energy efficiency targets);
- Civil engineers (understanding of low carbon materials and installation processes; knowledge of energy efficiency targets);
- Surveyors (understanding of energy efficiency targets and impacts of energy efficiency measures – or lack of them);
- Building services engineers;
- Facilities managers;
- Site supervisors (understanding of the processes and quality standard of completed work needed to meet low carbon requirements).

Potential emerging occupations

Whilst the general consensus among respondents points to a likelihood of multi-skilling among the blue collar workforce, respondents to the Status Quo research suggest that if new occupations do emerge, they are likely to be within the professional workforce and may span:

- Energy inspectors;
- Solar panel installers;
- Energy efficiency officers;
- Solar energy engineers;

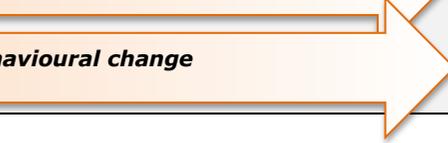
- Renewable energy engineer;
- Heat pump service and maintenance technicians (F-Gas qualified);
- Low carbon site manager (only in large companies); or low carbon consultant (less likely as would increase site costs).

This points to an urgent need to understand, in more detail and backed up by robust evidence, the skills and knowledge needs for the professional workforce in the building sector – and more importantly, what this might mean in relation to development of new NOS and qualifications.

Potential barriers to the achievement of the 2020 targets

Meeting the 2020 energy efficiency targets appears to be heavily reliant upon overcoming the barriers identified during the research into the Status Quo, which have been reiterated and supplemented during recent consultation events:

- Limited employer and consumer awareness about the agenda (obstructing demand for energy efficiency measures/training);
- Relating to the above - insufficient information, advice and guidance for employers and consumers on the green agenda;
- Fragmented policy, policy 'U-turns' and lack of an overarching coherent UK strategy in relation to green skills and jobs (has dented confidence within industry; concerns there is no longevity in the green agenda are preventing investment into training);
- Funding cuts and constraints (i.e. restricted funding for training – particular concern for SMEs; limited money available for refurbishment of existing building stock);
- Skills and knowledge gaps (see above) - also skills shortages particularly in relation to replacing an ageing workforce and recruiting trainees/apprentices during a challenging economic climate when not all employers are in a position to recruit;
- Gaps in training provision (limited in relation to emerging technologies; low levels of demand from employers preventing more widespread development of training);
- Uncertainty in relation to capacity in the existing workforce (likely to be insufficient to meet high demand for energy efficiency skills);
- Sole focus on the blue collar workforce within research of this nature, at the expense of professionals;
- Unaccredited and unregulated training courses could result in poor quality work which could undermine the green agenda and risk de-valuing schemes like the Green Deal, combined with risk of mis-selling if appropriate knowledge/accreditation is not addressed;
- Insufficient numbers of degree courses teach retrofit;
- Not enough emphasis or value placed upon retrofit within existing training provision – focus deemed predominantly on new build.

General Strategy & Key Objectives – Summary								● = core responsibility ○ = can influence								
Key Actors	SSCs	Governments & their Agencies	Local Authorities	Employers	Training Providers (FE, HE, Private)	Awarding Organisations	Trade Unions/ Federations/ Associations	Short-Term		Medium-Term			Long-Term			
								2013	2014	2015	2016	2017	2018	2019	2020	
Key Objectives	○	●	○	○	○											
	<p><i>Raise awareness & understanding/ stimulate demand for energy efficiency measures (among consumers & employers)</i></p> 															
	●	○			○	●	●									
	<p><i>Develop appropriate education, training and NOS/ qualifications & update as new technologies emerge</i></p> 															
	●	●	○		●	○	○	○								
	<p><i>Address skills & knowledge gaps in existing workforce</i></p> 															
	○	●				○	○	○								
<p><i>Establish and maintain appropriate quality assurance underpinned by appropriate accreditation</i></p> 																
●	●			○	○	○	○									
<p><i>Seek to influence Government so that their energy efficiency policies and legislation offer reassurance of longevity to the sector</i></p> 																
●	●	●		○	●	●	○									
<p><i>Harness appropriate sources of funding to support achievement of the targets (e.g. for training)</i></p> 																
○	●	○	○	○	○	○	○									
<p><i>Seek to embed the green agenda fully by seeking cultural and behavioural change</i></p> 																

General strategy in relation to training needs

The general strategy is summarised on the previous page, and this diagram illustrates:

- The seven core objectives that form the basis of the Roadmap/Action Plan, which are explained more fully on the following pages;
- The recommended timescales in which objectives should be achieved in order to meet the 2020 energy efficiency targets; (categorised into short-term: 2013-2014; medium-term: 2015-2017; and long-term: 2018-2020);
- The key²⁰ actors that should have either a core responsibility or role in influencing achievement of the objectives.

Objectives are listed on the summary in order of priority (as indicated by respondents to the research). Notably the Plan begins with the need to raise awareness of and stimulate demand for energy efficiency measures, as respondents consider there would be little point in developing new qualifications and up-skilling the workforce unless there is evidence of tangible market need. It should be noted that some objectives that have recommended short or medium-term timescales for completion, will not necessarily 'finish' at that point and will need on-going monitoring/maintenance. For example there is a clear need to plug skills and knowledge gaps in the short-term; however there could be further workforce needs to be addressed in subsequent years (indicated on the diagram by the dotted arrows that follow the main arrows). Objectives that run from the short-term through to the long-term should be viewed as an on-going responsibility.

Forecast numbers of people requiring training and therefore costs of qualification/training development have been produced through modelling of research data and are thus underpinned by robust industry feedback – however the energy efficiency agenda is fast-moving and some of the expected initiatives (Green Deal in particular) are not yet fully implemented therefore these figures should be viewed as estimates. Suggested costs for undertaking actions (included where possible to do so) should also be viewed as estimates. As indicated above it has not been possible to ascertain what changes in numbers employed in different occupations will be needed in the UK Construction and Installation sector between 2013/4 and 2020 because of the overriding influence of general economic rather than specific low carbon factors. *It is therefore recommended that all actors, including specifically Sector Skills Councils keep this issue under continuous scrutiny over the next six years.* It is expected that Build Up Skills UK will take ownership of this Action Plan and therefore a responsibility to keep the Plan updated, identify indicators of success and monitor progress, taking appropriate actions as necessary to address any limited progression.

²⁰ When referring to 'key' actors this deliberately identifies those that are expected to play the most significant roles, and does not seek to include every single organisation/individual that may play a part (referenced as relevant within each objective). The SSCs refer to those with footprints relevant to the building sector

Objective 1 : Raise awareness and understanding of and stimulate demand for energy efficiency measures among consumers & employers		
ACTIONS	RESOURCES & OTHER INPUTS	TIMING & MONITORING
<p>Seek to raise awareness among consumers of the energy efficiency agenda in order to stimulate market demand for measures such as those offered via the Green Deal²¹/Energy Company Obligation (ECO) (e.g. biomass boilers, ground source heat pumps etc.)</p> <p><i>Awareness raising could be achieved via:</i></p> <ul style="list-style-type: none"> - <i>Information events/workshops</i> - <i>Major national/local promotional campaigns</i> - <i>Marketing of the Green Deal</i> - <i>Publicising advice lines, information resources & organisations such as the Energy Saving Trust</i> - <i>Via social media campaigns e.g. Twitter</i> <p><i>Workshops or events could span:</i></p> <ul style="list-style-type: none"> - <i>Generic knowledge of climate change, the low carbon agenda and changes in behaviour to support a 'green' economy</i> - <i>Awareness of core initiatives – Green Deal/ECO, Renewable Heat Incentive, Feed-In Tariffs and others as developed, including how the funding mechanisms work</i> - <i>The use of rising fuel/energy costs as a driver to change behaviour</i> 	<p>Respondents feel Governments need to take primary responsibility for raising of consumer awareness/stimulation of demand. Funding would be required for any form of information event/workshop and respondents feel this should be provided at a national or local level by Governments.</p> <p>However given raising awareness appears a vital means of stimulating employer investment into training, it may be possible to tap into funding intended to raise employer ambition into skills investment (for example the funds operated by UKCES and/or monies offered to Local Authorities in relation to the Green Deal – see the objective on harnessing appropriate funding for more detail).</p> <p>Other ways in which key actors and others could provide input:</p> <ul style="list-style-type: none"> - SSCs could engage with Local Authorities and Local Employment Partnerships (LEPs) that have a vested interest in boosting this agenda to help stimulate economic growth and job opportunities. These organisations could potentially help to fund and/or facilitate workshops. 	<p>Short-term (urgent priority) and should be considered an on-going objective.</p> <p>Monitoring of progress should include an evaluation of levels of consumer awareness and up-take of energy efficiency measures (baseline data may be gathered through research to quantify levels of consumer demand, see below).</p>

²¹ Or other similar schemes that may be developed over the lifetime of this Skills Roadmap/Action Plan

	<ul style="list-style-type: none"> - Employers can also play a role in helping to educate their customers of the benefits of energy efficiency measures – however in many cases they themselves need to be convinced of the value. - SSCs, trade federations/associations and Governments could all play a role in engaging with relevant organisations such as journalists or the Energy Saving Trust to work collaboratively (and thus make best use of monies) to help raise consumer awareness. - Green Deal providers are likely to undertake their own marketing campaigns which could contribute substantially to awareness raising among consumers and which could be built upon. 	
<p>Seek to quantify levels of consumer demand for energy efficiency measures, which could act as an evidence base to inform promotional activities, and/or be used to illustrate market demand for employers, therefore stimulating their investment into relevant up-skilling and qualifications.</p>	<p>Research would need to be commissioned and as before, respondents suggest Governments need to take primary responsibility for this. Depending on the extent and scope of the research, estimated costs could be in the region of £75-150,000.</p>	<p>Short-term. Monitoring of progress should include recommendations as to how the research should be used (with timescales and allocation of clear responsibilities).</p>
<p>Seek to raise awareness among employers in the built environment sector about the energy efficiency agenda – including of the EU targets and what they mean for the sector, and of relevant training that is available or in development.</p>	<p>SSCs and trade federations/associations/unions can play a critical role in relation to information sharing – particularly in relation to the types of training employers are likely to need to up-skill. SSCs in the built environment sector should provide comprehensive information on the supply of necessary training via a range of</p>	<p>Short-term – high priority, and an on-going objective.</p> <p>SSCs are likely to be in the best position (working with federations and associations) to determine the impact on employers and changes to awareness levels.</p>

<p><i>One way in which this could be achieved is via wider information sharing and events – designed to appeal to employers by identifying possible business opportunities. For example:</i></p> <ul style="list-style-type: none"> - <i>Green business practices – sustainable procurement, improving resource efficiency and minimising waste can help win new business as these requirements are often part of tender documentation</i> - <i>Funding and training opportunities that could be available – for example grants/subsidised training</i> - <i>Networking and collaboration opportunities – for example for SMEs to work collaboratively to pitch for sub-contracting work/online communities</i> 	<p>communication channels, including details on how to access funding where available.</p> <p>For example, the National Farmers’ Union (NFU) has been communicating to farmers how they can generate renewable power on their land, and the benefits of this. This type of approach could be a strong influence for the non-domestic sector.</p> <p>Employers and SMEs in particular should take some responsibility for proactively seeking information about the energy efficiency agenda – in particular relevant legislation and policy, and how this should be interpreted. A greater awareness of the agenda itself and potential ways in which it could benefit business could help to stimulate this.</p> <p>Governments are already offering some free training/events (for example DECC announced a series of heat pump training roadshows aimed at social housing providers in September) – this activity needs to be maintained and expanded.</p>	
<p>Establish and maintain a Working Group to co-ordinate activities in relation to promotion and awareness raising of the energy efficiency agenda within the organisations operating in the sector footprints that comprise Build Up Skills UK.</p>	<p>It is recommended that the SSCs comprising Build Up Skills UK take ownership for establishing and leading this Group, building upon existing activities such as the Core Platform to link into relevant organisations/individuals that could contribute.</p>	<p>Short-term. This Group should establish clear indicators and milestones in relation to promotion and awareness raising.</p>
<p>Consider offering incentives could be offered for consumers that invest in energy efficiency measures – for example a reduction in council</p>	<p>Industry stakeholders consider that the best form of catalyst to help engage the public with the agenda is a financial stimulus – however this</p>	<p>Short-term and in particular to help kickstart demand for the Green Deal.</p>

<p>tax or changes to stamp duty.</p>	<p>is reliant on Governments choosing to adopt this policy. SSCs and trade federations/associations could play a part in influencing Governments to offer such financial incentives where deemed appropriate.</p>	<p>Monitoring should include evaluation of the impact of incentives – notably whether they are contributing to levels of up-take for energy efficiency measures.</p>
<p>Consider offering incentives for employers that invest in training to provide energy efficiency measures to customers (and/or embed such measures within their own premises) – for example a reduction in VAT.</p>	<p>As stated above, financial stimulus is likely to be an effective means of changing behaviours and raising awareness of the green agenda – however again this would be down to Governments to adopt this. It may be unlikely that an action like this would be progressed in the current context of the economic climate.</p>	<p>Medium-term (a more realistic timescale than short-term given financial pressures).</p> <p>Monitoring should include evaluation of the impact of incentives – notably whether they are contributing to levels of up-take for up-skilling and qualifications.</p>
<p>Local Authorities should consider implementing retrofit programmes to upgrade domestic housing stock and, where relevant, non-domestic stock, which could stimulate demand for the Green Deal and energy efficiency work.</p>	<p>A potential catalyst for the Green Deal would be for providers to work closely with Local Authorities, Housing Associations and social landlords (that between them own a large proportion of domestic housing stock). Industry stakeholders agree that Local Authorities need to tackle their own portfolio of buildings first – however they need money to do this.</p> <p>The UK Government has made £10million available for Green Deal ‘pioneer’ projects for Local Authorities in England, which could be used to help promote the scheme (and thus help engage the consumer).</p> <p>SSCs and trade federations/associations could play a role in educating/influencing Local Authorities of the benefits of retrofit which in turn could result in opportunities for local contractors (and thus stimulate demand for training).</p>	<p>Short to medium-term. Again it will be important to monitor levels of up-take and relative success of different types of intervention via Local Authorities, to see what could be rolled out to other areas.</p>

<p>Embed amendments to the building regulations, where appropriate, that could act as a catalyst for energy efficiency.</p>	<p>Governments would need to lead on embedding revisions to the building regulations – for example solar PV could be mandatory for new builds, where appropriate and the Status Quo research points to a need to consider a way to address embodied carbon and the implications of whole-life carbon. In particular there is a need to maximise energy efficiency requirements for non-domestic buildings which account for a substantial amount of current emissions.</p> <p>SSCs, trade federations/associations/unions and employers would all have a role to play in influencing amendments – for example through contributing to consultations.</p>	<p>Short to medium-term. Monitoring would need to track the impact of any changes as well as seek to identify, on an on-going basis, further amendments that could be made.</p>
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Factors for consideration

- Stimulating demand is deemed to be a high priority. Unless there is a clear market for energy efficiency measures and demand from consumers, industry is highly unlikely to invest in up-skilling and training. In turn, training providers and Awarding Organisations would be unlikely to develop and offer the most relevant training. All of these factors combine to undermine the UK’s ability to meet the EU 2020 energy efficiency targets.
- It is important to seek a collaborative approach to taking actions, avoiding too many fragmented pockets of activity that risks overlap and duplication.
- Given the current pressures of an uncertain economic climate, it may be that introducing council tax/VAT reductions as incentives could be unfeasible. However a change in stamp duty, linking into energy efficiency measures, may be a better approach as this could contribute to house sales (particularly pertinent as a concern raised about Green Deal is that the payment attached to the house could diminish saleability of homes). It is also important that incentives do not result in a culture of “feast and famine”.
- Consumers and industry employers need confidence that energy efficiency measures and systems will actually result in cost and energy savings - reliable data on the efficiency of energy systems is therefore vital and may require additional investment.
- At the moment the level of interest and potential uptake of the Green Deal is unknown. A sudden surge in demand could create the risk that

training is developed and delivered quickly - which would help to ensure the required capacity in the workforce on the one hand, however could also mean that training is not up to the standards necessary to safeguard quality of work.

- A number of industry employers have questioned whether it is actually known how much progress has been made against the 1990 levels – i.e. how far has the UK to go in order to meet the 2020 targets? This information could be useful in influencing behaviour change.
- Local Authorities and Housing Associations could play a major role by introducing retrofit programmes, but these organisations are also facing funding cuts and economic pressures, and may face obstacles in securing funding.
- Respondents have suggested that high-profile television programmes could play a part in influencing or changing behaviour and increasing awareness and understanding of energy efficiency measures (such as Grand Designs or soap operas).
- Much of the focus for the energy efficiency agenda is in relation to domestic properties, however in seeking to raise awareness and stimulate demand for energy efficiency measures, actions should take into consideration the potential of the non-domestic stock, which may offer substantial potential for on-site renewables.

Objective 2: Develop appropriate education, training and NOS/qualifications and update as new technologies emerge		
ACTIONS	RESOURCES & OTHER INPUTS	TIMING & MONITORING
<p>Carry out a mapping exercise to determine where gaps are in relation to skills and knowledge needs (as identified within the Status Quo research) in existing NOS and qualifications and consult with industry as necessary to update these and make changes as required. Ensure up-skilling is accessible, enables multi-skilling (where appropriate to meet industry needs²²) and is not cost-prohibitive for the sector.</p>	<p>It should be noted that the majority of respondents for this research do not believe that new qualifications are required and that amendments to existing ones is likely to be sufficient. The recommendation from industry is to broaden the priority knowledge aspects in regards to energy efficiency (as identified via the Status Quo research) within mainstream qualifications and training, spanning:</p> <ul style="list-style-type: none"> - Apprenticeships - Adult up-skilling - School curriculum - Supervisors and manager courses <p>The Status Quo research rated existing provision at an average of 6.03 out of 10 in relation to its suitability to support delivery of the 2020 energy targets, suggesting a need to update units and qualifications. It also indicated that training for solar PV and solar thermal are relatively well catered for, but that there is limited provision in relation to other emerging technologies, so if demand was there, these gaps would need to be filled.</p> <p>Estimated numbers requiring training are listed on pages 8 and 9. The level of investment will depend on the numbers of NOS and qualifications to be updated. Based on previous costs in the construction sector estimates</p>	<p>Short-term, with monitoring linked to numbers of individuals that achieve new or updated qualifications.</p> <p>SSCs and trade federations could engage with training providers/employers to gain feedback on the extent to which new or revised provision is meeting industry needs.</p> <p>SSCs will be required to monitor progress of NOS and qualifications development in association with other key actors such as Awarding Organisations.</p>

²² Taking into consideration the potential risks of multi-skilling as outlined on page 10

	<p>suggest a cost of £60,000 to develop 10 qualifications. Scope, content, accreditation and learning outcomes should all be linked to the findings from the Status Quo research.</p> <p>To create standalone units not linked to a particular qualification may meet industry needs, and quickly, however this task would not necessarily attract public funding and monies would need to come from other sources. The CITB-ConstructionSkills levy is one potential source of funding however it should be noted the other SSCs within the Build Up Skills alliance do not have a similar levy system.</p> <p>Key actors with responsibility for developing NOS are the SSCs, with input from employers and trade federations/associations/unions, training providers and Awarding Organisations. The latter should take responsibility for qualifications development. Governments may need to invest into this via the provision of public funding.</p> <p>Colleges and private training providers need to collaborate more closely with industry in order to develop fit for purpose training – in particular for HE and FE to canvass feedback from one cohort and use this to review market trends before enrolling the next.</p>	
<p>Develop and promote new NOS and qualifications where existing qualifications do not span all the necessary skills and knowledge needs.</p>	<p>Key actors and financial inputs as above. Qualifications may need to differentiate between nations depending on differences such as building regulations.</p>	<p>Short-term, with monitoring linked to numbers of individuals that achieve new or updated qualifications.</p>

<p>Develop and promote additional training courses or units to be embedded into existing qualifications, specifically in relation to energy efficiency measures for pre-1919 and hard to treat buildings.</p>	<p>Specific training courses relating to pre-1919 buildings already exist however respondent feedback suggests that the numbers of such courses are limited, and furthermore may not be widely known. Therefore it will be necessary to develop additional provision as required and ensure this is widely promoted.</p>	<p>Short-term, with monitoring linked to numbers of individuals that achieve new or updated qualifications.</p>
<p>Develop and promote 'bolt-ons' in relation to:</p> <ul style="list-style-type: none"> - awareness raising and selling the energy efficiency opportunity to consumers; - calculating and communicating likely energy savings for the consumer; - trigger points for selling energy efficiency systems to the consumer. 	<p>Key actors and financial inputs as previously stated.</p>	<p>Short-term, with monitoring linked to numbers of individuals that achieve new or updated qualifications.</p>
<p>Develop and promote training provision that can be offered in a more flexible manner, to better suit the needs of industry, such as transitional training models with options for 'bolt-on' units and modules.</p>	<p>Training providers will need to give consideration to developing a flexible offer - for example online modules that could be offered outside of working hours). Research also suggests a need for more blended and work-based learning, and a greater proportion of practical teaching as opposed to theory.</p> <p>Investment will be required in the form of time, resources and potentially up-dating of facilities. Level of investment will depend on the baseline position and the extent of change needed.</p>	<p>Short-term, with monitoring linked to the evaluation of revised provision based on industry feedback and levels of up-take.</p>
<p>Allocate appropriate levels of funding to improve training materials and facilities that will underpin a more flexible training offer (including the provision of blended and work-based learning, and on-site assessments).</p>	<p>Training providers will need to identify changes required to materials and facilities. SSCs and trade federations/associations also typically a role to play in supporting development of relevant materials for the sector. Typical costs (based on previous work in the construction</p>	<p>Short to medium-term, with monitoring linked to the evaluation of revised materials/facilities based on industry feedback and levels of up-take.</p>

	sector) are in the region of £20,000 per occupation for new or updated training materials.	
Review existing Train the Trainer provision and develop and promote additional Train the Trainer provision specific to energy efficiency where required (i.e. if gaps in the existing offer).	<p>SSCs and trade federations/associations/unions are in a position to influence and shape new or revised provision, working collaboratively with training providers and Awarding Organisations.</p> <p>The Status Quo research estimates at least 700 new trainers will be needed to deliver Green Deal provision alone – should there be sufficient consumer demand for the scheme. In addition employers consider that the quality of provision and knowledge/expertise of tutors can be inconsistent UK-wide, so Train the Trainer and CPD provision needs to focus on high quality, consistent training to be offered to industry.</p>	Short-term and subsequently on-going.
Develop and promote Continuing Professional Development (CPD) courses for tutors so that they maintain up-to-date awareness of new technologies as they develop.	As above.	Short-term and subsequently on-going.
Develop and promote CPD courses for employers so that they maintain up-to-date awareness of new technologies as they develop.	As above.	Short-term and subsequently on-going.
Ensure that energy efficiency modules within Apprenticeship Frameworks are mandatory rather than optional, and develop new units/modules as required to ensure new technologies are fully addressed.	As above.	Short-term and subsequently on-going.
Continue to develop and promote relevant NOS, qualifications, CPD and train the trainer provision	SSCs need to take responsibility for on-going monitoring of skills and knowledge needs in their	On-going, with monitoring linked to consultation with industry to ensure training provision is

<p>as new technologies (and potentially new occupations) emerge over time.</p>	<p>sectors, with actions taken as required for identifying and addressing any issues.</p>	<p>suitable and sufficient.</p>
<p>Seek to streamline qualifications development as far as possible, so that new courses/units can be rolled out quickly (and do not go out of date as new technologies emerge).</p>	<p>Awarding Organisations need to commit to working closely with SSCs and industry to ensure qualifications are updated quickly and in line with the industry needs and changes in technologies.</p>	<p>On-going, with monitoring linked to feedback from industry about the speed by which new/updated qualifications that meet their needs are developed and made widely available.</p>
<p>Maintain on-going communications with employers so that they are kept informed where they can find appropriate training and what types of qualifications they will need.</p>	<p>The success of new or updated training and qualifications is reliant on promotion and effective channels of communication so that employers are aware of a) what training they require and b) how to find and fund it.</p> <p>SSCs, trade federations/associations/unions and training providers can all play a role in supplying accurate information to their sectors and in promoting relevant training provision (and any information on funding sources) to employers. The Status Quo research indicated a lack of comprehensive lists of energy efficiency training provision listed by provider/region available on SSC websites. National Skills Academy and other SSC-affiliated provision were listed, but with no links to other nationwide providers.</p> <p>Employers and stakeholders have strongly argued that the lack of relevant information about a) what type of training is required and b) where and how this can be accessed is a significant obstacle for the sector.</p>	<p>Short-term, with monitoring linked to numbers of individuals that achieve new or updated qualifications and industry feedback about ease of access/information about education and training.</p>
<p>Consider whether there is a need to develop professional level qualifications related to energy efficiency – for example for</p>	<p>It is unclear at present until a more detailed piece of research has been carried out into professional skills (see objective 3), whether new</p>	<p>Short to medium-term (likely to be subject to funding availability).</p>

<p>supervisors/designers/planners and/or those responsible for management of buildings e.g. commercial property managers.</p>	<p>(or updated) qualifications will be needed at Level 4 and above, and if so, what level of investment will be required.</p>	
<p>Factors for consideration</p>		
<ul style="list-style-type: none"> ▪ Development of new NOS, training and qualifications should address <u>all</u> emerging technologies in relation to the renewables sector and energy efficiency agenda – but should also take into consideration relevant processes and systems within the built environment sector that are currently in use – and those that may evolve/emerge in the future (for example Modern Methods of Construction (MMC), building system technologies, off-site manufacturing etc.) which have an impact for the blue collar workforce. ▪ Training providers and Awarding Organisations are unlikely to invest in developing a new or updated flexible training offer unless there is clear evidence of demand from employers. Again it is clear that stimulating demand is a vital priority. ▪ It may be a difficult task to streamline qualifications development; the process can be protracted, reliant as it is on a range of partner organisations working together. NOS suites vary in length, numbers and complexity; therefore it is not feasible to set one overarching limit in terms of timescales for updating existing qualifications. Furthermore updating existing qualifications – for example to add new units – can typically only be done when qualification is due for review. ▪ Shorter courses could be a way to enable the training offer to be more flexible (e.g. outside of working hours, e-tutor support etc.), and respondents strongly recommend courses are accredited otherwise there is the risk they are unregulated and not “policed” in relation to quality control. ▪ Feedback from the Status Quo research suggests there may be a need to design a ‘multi-skilled energy Apprenticeship Framework’. 		

Objective 3: Address skills & knowledge gaps in the existing workforce		
ACTIONS	RESOURCES & OTHER INPUTS	TIMING & MONITORING
Ensure entry requirements for new or updated education and training are appropriate pre-requisite criteria so that there is a solid platform of skills and knowledge upon which to bolt on new energy efficiency awareness/technical ability.	SSCs need to influence development of appropriate training including ways to establish suitability of existing workers for up-skilling. An on-going focus needs to be maintained on ensuring the quality of existing skills and knowledge. Training providers have a role to play in establishing this suitability (for example via pre-qualifying questions).	Short-term – high priority. On-going monitoring should seek to ensure that qualifications remain fit for purpose and that appropriate numbers (for example see the estimates of those requiring training within the Status Quo research) are being up-skilled.
Consider providing grants for education and training and CPD relating to energy efficiency.	Nearly a third of employers interviewed for the Status Quo research stated that the biggest barrier to investing in training is that it is cost and time prohibitive. A lack of training costs and limited public funding were cited as the strongest barriers to accessing training. Respondents consider it is the primary responsibility of Governments to provide funding for training.	Short-term, with monitoring linked to numbers taking up offers of grants towards training.
Broaden the scope of the research to include the professional workforce.	The current scope is limited to the blue collar workforce but the consensus among respondents is that the professional occupations are of greater concern. High priority occupations for up-skilling include: - Green Deal Energy Assessor/Energy Assessor - Surveyor - Architect/designer - Site supervisor	Short-term – urgent priority.

	<p>SSCs need to seek additional funding to broaden the scope of this research in order to urgently identify skills and knowledge needs for the professional workforce (also see objective 6).</p> <p>Depending on the extent and scope of the research, quantifying professional skills and knowledge needs could require an investment of approximately £75,000 (estimated).</p>	
<p>Continue to monitor skills and knowledge levels in the workforce to identify and address any gaps or shortages that need to be filled in order to support achievement of the 2020 energy efficiency targets.</p>	<p>The SSCs in the UK hold responsibility for identifying skills gaps, driving investment into skills and the development of industry specific skills. Historically they have received public funding to fulfil this role, however since the impact of the recession, the core funding model has changed, and from April 2012, SSCs must seek contestable funding.</p> <p>A major concern among respondents to this research is that there will be insufficient funding and resources to produce accurate and regular labour market intelligence (LMI) – which to date has monitored sector employment trends and skills needs. This would have a knock-on effect on qualifications development, as Awarding Organisations could struggle to produce qualifications that are fit for purpose if they lack a relevant evidence base.</p> <p>Investment is therefore needed to provide relevant LMI on an on-going basis. Respondents suggest that Governments need to provide funding for this purpose.</p>	<p>On-going, with monitoring linked to review of the effectiveness of the role of SSCs in carrying this out.</p>

Factors for consideration

- Feedback from the Higher Education community has suggested that some HEIs are not currently well placed to train designers and engineers – partly because of a shortage of practical experience. There is also a concern that not enough degree programmes or Apprenticeship frameworks teach retrofit.
- There could be a risk to on-going monitoring and processes to ensure skills and knowledge are in place, if the SSC function is impacted by funding cuts or other constraints on resources.

Objective 4: Establish and maintain appropriate quality assurance underpinned by appropriate accreditation		
ACTIONS	RESOURCES & OTHER INPUTS	TIMING & MONITORING
<p>Ensure there is an appropriate accreditation scheme for energy efficiency which should be promoted to employers and consumers. Respondents suggest this scheme should become a recognised 'brand' such as GasSafe – i.e. a name that the public can have confidence in.</p>	<p>It will be vital that the scheme is fit for purpose and also promoted so that consumers understand and attach value to it – this process will require time, funding and resources and is likely to need a collaborative approach between SSCs, trade federations/associations/unions and Governments. These key actors will also need to accredit inspectors to scrutinise accreditation (this in turn may require development of NOS/qualifications for these people that would 'police' the industry).</p> <p>Making use of an existing scheme is likely to be a more efficient use of resources and also will avoid the risk of 'bombarding' the consumer with too many schemes.</p> <p>A register to list accredited workers may be the easiest means of promoting the scheme to consumers, and could utilise existing sources such as the Energy Saving Trust website, or similar.</p>	<p>Short-term and on-going. Monitoring should include a commitment to 'policing' the industry to achieve and maintain high quality standards, with evaluation of the effectiveness of the scheme and its fitness for purpose to meet industry needs.</p>
<p>Ensure on-going CPD is a requirement in order to retain accreditation.</p>	<p>SSCs should seek to influence an accreditation system that is underpinned by appropriate and on-going CPD – to be required in order to retain the accreditation.</p>	<p>Short-term and on-going, with monitoring linked to the numbers that achieve and retain accreditation.</p>

Factors for consideration

- The new Green Deal Quality Mark (England) will indicate who is authorised and is intended to protect consumers – there is a risk that this could overlap with other forms of accreditation/quality assurance. However not all employers will sign up to offer Green Deal yet many will still offer this type of work – i.e. some workers could ‘slip through the net’.
- Some respondents suggested that one option would be to expand the Microgeneration Certification Scheme (MCS), which is an industry-led scheme which certifies microgeneration products and installation companies and is currently being updated to fall into line with NOS. However the consensus from industry suggests that MCS would not be fit for purpose.
- Using the CSCS card could be an option to indicate energy efficiency skills/knowledge for the non-domestic built environment sector (this could be incorporated into cards using smartcard technology so easy to update/verify). It seems unlikely that this route would work in the domestic sector – at least in the short-term – given that as a general rule, the average consumer is unfamiliar with the CSCS card.

Objective 5: Seek to influence Government so that their energy efficiency policies and legislation offer reassurance of longevity to the sector		
ACTIONS	RESOURCES & OTHER INPUTS	TIMING & MONITORING
Engage with Governments and lobby as necessary to seek continuity within the energy efficiency agenda - notably to ensure that policies are for the long-term and not short-lived schemes.	<p>Governments have an overarching responsibility to maintain continuity and investment into the energy efficiency agenda.</p> <p>All key actors have a potential role to play in continuing to lobby Governments' so that policies for the energy efficiency agenda in all UK nations are maintained to give the industry reassurance they are committed to driving this forward.</p>	Short-term – urgent priority and on-going. All actors engaged with industry should continue to seek and act upon feedback on Governments' actions.
Factors for consideration		
<ul style="list-style-type: none"> Despite recent DECC proposals and announcements committing more money to the energy efficiency agenda, there is still a great deal of uncertainty about the Governments' stance among industry employers and stakeholders which may take a long time to overcome. Confidence has been badly dented and there is a strong sense that financial commitment (for example in the form of money for training, consumer/employer incentives and marketing) is the only way that will give industry reassurance and confidence to invest in training. The economic climate inevitably has to be taken into consideration when thinking about monies that can be feasibly allocated to this agenda – however one question to consider is whether the UK is subject to financial penalties if the EU 2020 targets are not met. 		

Objective 6: Harness appropriate sources of funding to support achievement of the targets e.g. for training		
ACTIONS	RESOURCES & OTHER INPUTS	TIMING & MONITORING
<p>Harness appropriate sources of funding in order to a) access money for training; b) encourage collaboration between industry and the likes of federations, unions etc.; and c) encourage employers to invest in the energy efficiency agenda.</p>	<p>SSCs should seek to fully utilise all appropriate sources of funding to encourage employer investment into up-skilling and training as well as develop education and qualifications that are necessary.</p> <p>It is important not to rely heavily on any one source of funding, particularly where there may be a 'shelf life'; SSCs need to consider a) how to identify and utilise the widest possible range of funding sources; and b) ensure financial sustainability after the lifetime for the funding. A database of funding sources should be developed for internal use of BUSUK as well as for potentially communicating sources of funding to employers seeking to up-skill their workforce (e.g. grants).</p> <p>In addition to public funding from UK Governments, SSCs should consider seeking ESF funding to support the energy efficiency agenda.</p> <p>Training providers, notably FE and HE, can also tap into existing sources of funding in order to develop relevant training.</p>	<p>Short-term and on-going, with monitoring linked to effective identification and use of funding sources.</p>
Factors for consideration		
<ul style="list-style-type: none"> As already stated, the use of the CITB-ConstructionSkills levy is one route to provide funding for training – however this only applies to the construction sector footprint, leaving a potential gap to be filled in other areas. 		

Objective 7: Seek to embed the green agenda fully by seeking cultural and behavioural change		
ACTIONS	RESOURCES & OTHER INPUTS	TIMING & MONITORING
Seek to educate consumers in the domestic and non-domestic sectors about energy efficiency in order to embed behavioural change.	This links to the raising awareness action within objective 1.	On-going, with monitoring linked to evaluations of behaviour change and how these are contributing or otherwise to the EU 2020 targets.
Consider making changes to the Energy Performance Certificate (EPC) in order to help to educate consumers – for example kw hours and the financial impact of energy saving behaviours.	<p>Feedback from industry stakeholders recommends a review of EPCs as information may not be as meaningful as it could be for consumers – messages could be stronger to promote behavioural change, for example.</p> <p>Funding would be needed – likely from Governments - to undertake the review however it appears that changes in the long-term would make this investment worthwhile.</p>	Medium-term, with monitoring linked to evaluation of consumer attitudes and behaviour changes.
Schools and colleges should teach the sustainability/energy efficiency agenda. Consider whether there is a need to develop a specific qualification for 14-19 year olds.	<p>To stimulate demand, knowledge and understanding of the low carbon agenda needs to be substantially improved. Achieving this cultural/behavioural shift relies on embedding knowledge across all sectors and occupation types as well as the 14-19 curricula.</p> <p>SSCs in the built environment could seek to influence curriculum change, working in collaboration with industry and schools, colleges and training providers. Cost of qualification development as previously stated as well as time for consultation would be the main financial inputs needed.</p>	Short to medium-term, with monitoring linked to numbers of relevant 14-19 units or qualifications developed.
Maintain peer review with EU to identify and share best practice and lessons learned.	The SSCs comprising Build Up Skills UK should maintain relationships with the EU member	On-going, with monitoring via regular meetings of the SSC network.

	states to continue sharing best practice and utilising lessons learned to best effect. This will require a time and resource commitment.	
Clearly define 'green' terms, notably low and zero carbon.	This issue appears to be widespread across the whole of the UK, meaning that it could be difficult to ascertain when 'zero carbon' is actually achieved and how. SSCs may be in a position to influence debate and a commitment to determining these definitions. However respondents feel it is Governments' primary responsibility to agree upon and disseminate these definitions.	Short-term – high priority with monitoring linked to levels of understanding of 'green' terminology.
Seek to influence changes to procurement policies that could help to stimulate demand for energy efficiency measures. Skills and knowledge requirements built into procurement processes could help to make it clear what is expected of industry and thus help influence change.	<p>Commitment to energy efficiency is already starting to feature more strongly – for example within tender documentation.</p> <p>Stakeholders have suggested that updating Local Authority procurement practices could help ensure suppliers are compliant with sustainable 'green' business practices – this is likely to require training for key Local Authority departments e.g. planning and building regulations teams should have an understanding of carbon emission targets and objectives to underpin strategic and operational decision-making.</p>	Short to medium-term, with monitoring linked to numbers of Local Authorities embedding changes to procurement policies.

Factors for consideration

- It is likely to be a lengthy process to embed changes into school curricula and across qualifications/NOS in sectors outside of the built environment – however progress has already been made in Scottish and Welsh schools (e.g. Eco-School Awards) and lessons could be learned from their approach.
- Procurement changes require commitment from Local Authorities so there could be an impact on time/resource required to engage with and influence key personnel.
- To fully implement and embed cultural and behavioural change, it is important that an Action Plan of this nature is widely understood, accepted and endorsed by the industry and its stakeholders so that there is wide-ranging commitment and a sense of a shared responsibility for making the required changes.



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