BUILD UP SKILLS

ENERGY TRAINING FOR BUILDERS

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NATIONAL SKILLS ROADMAP FOR EMPLOYEES IN GERMANY'S BUILDING SECTOR

Developed in the context of the BUILD UP Skills Initiative

ZDH ZENTRALVERBAND DES DEUTSCHEN HANDWERKS

FBH

BIBB

HPI

dena Deutsche Energie-Agentur

ZENTRALVERBAND DEUTSCHES BAUGEWERBE

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0. Foreword

Working together to achieve the European climate objectives is all about taking over responsibility for maintaining the living conditions not just of current generations, but also of future generations. The intention of this *National Skills Roadmap for the Building Workforce in Germany* is to contribute to achieving the energy and climate targets in the building sector through ensuring that a workforce is available with the right skills and in sufficient numbers. The "building workforce" is defined as skilled blue collar workers employed in the identified occupations in the construction, finishing and building technology trades relevant in the energy-related refurbishment of buildings.

The Skills Roadmap for Germany was developed in dialogue with the principal stakeholders in Germany, with the following organisations belonging to the Steering Board (*Beirat*):

ZDH Zentralverband des Deutschen Handwerks	FBH *Forschungsinstitut für Berufsbildung im Handwerk an der Universität zu Köln*	HPI Heinz-Piest-Institut für Handwerkstechnik
BIBB Bundesinstitut für Berufsbildung	dena Deutsche Energie-Agentur	Zentralverband Deutsches Baugewerbe
Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit	Bundesministerium für Verkehr, Bau und Stadtentwicklung	Bundesministerium für Wirtschaft und Technologie
DGB Deutscher Gewerkschaftsbund	IG Metall Industriegewerkschaft Metall	Industriegewerkschaft Bauen-Agrar-Umwelt
DIHK Deutscher Industrie- und Handelskammertag	Handwerkskammer Münster HWK	Handwerkskammer für München und Oberbayern
Handwerkskammer Berlin	Handwerkskammer Hildesheim-Südniedersachsen	BDA Die Arbeitgeber Bundesvereinigung der Deutschen Arbeitgeberverbände
Zentralverband des Deutschen Dachdeckerhandwerks	Zentralverband der Deutschen Elektro- und Informationstechnischen Handwerke ZVEH	Zentralverband Sanitär Heizung Klima
GDI Gesamtverband Dämmstoffindustrie	VFF Verband Fenster und Fassade	Bundesarchitektenkammer
kfw Bankengruppe	Bundesagentur für Arbeit	

1. Executive Summary

To be in a position to achieve Germany's energy and climate targets in the building sector, additional investment is needed - on top of current activities - to the tune of EUR 23.6 billion per year between 2014 and 2020. The challenge here is to ensure that sufficient numbers of skilled blue-collar workers are available in the construction, finishing and building technology occupations. The status quo analysis for the building sector workforce[1] carried out in the context of the German BUILD UP Skills Project "Qualergy 2020" showed that Germany is well-positioned to take up this challenge:

- Despite the requisite increase in the size of the workforce, available figures show that - at least from a mathematical perspective - there should be no shortage of skilled building workers in Germany as a whole, though it can be expected that shortages will occur in certain regions and in certain occupations.
- The requisite skill sets are well-anchored in the apprenticeship frameworks and master craftsman examination frameworks of the occupations looked at, with the frameworks for the most part already covering the relevant technologies and processes. Existing gaps in the apprenticeship frameworks are closed by means of the master craftsman programmes. Moreover a comprehensive CVET system exists for building workers in Germany. Looking just at the fields of energy efficiency and renewable energy, 315 CVET offerings (not including the master craftsman programmes) were available in the skilled crafts and industrial sectors in 2011.

Nevertheless, the status quo analysis revealed certain quantitative and qualitative gaps, as well as a number of barriers:

- We can already see that there will be an increasing shortage of skilled workers in the German building sector after 2020, the result on the one hand of demand for energy-efficiency refurbishment measures continuing at a high level, and on the other hand of a progressive decline in the supply of skilled workers on account of demographic factors. Against this background, the need to ensure sufficient numbers of skilled blue collar workers at this early stage assumes major importance.
- The level of occupational skills available within the workforce is high and, generally speaking, work specific to each trade is performed properly. There are however deficits with regard to interfacing with other trades.
- In this context, one skill missing is the capability to think beyond one's own process, understanding the whole house/building as one integrated system.
- Existing early warning systems for skills are not used systematically and interlinked with each other, meaning that CVET courses often do not take into account steadily increasing requirements.
- The number of participants in CVET courses is generally low and has decreased continually over the last three years.

[1] Cf. Weiss/Rehbold (Eds.) 2012.

- These courses are often not clearly structured and/or not known to target groups not belonging to the respective chambers. Existing databases are not used as often or as intensively as possible, a situation possibly reflecting deficits in tailoring them to the needs of the target groups.

Despite the existing high skill level of the building workforce in Germany and the improvements made over the last few years, skill deficits remain. The intention of the "National Skills Roadmap for the Building Industry" is to come up with suggestions and measures capable of overcoming them. In doing so, the German BUILD UP Skills project "Qualergy2020" has continued the strategic process begun in 2011 and set up a 26-institution Steering Board. Alongside the actual consortium members, the Steering Board includes representatives from the most important stakeholder groups (ones with a multiplier effect) from the National Skills Platform (*Nationale Qualifikationsplattform*) as well as from industry.

The Steering Board met three times between September 2012 and January 2013. In the initial meeting the recognised quantitative and qualitative deficits were discussed, initial recommendations put forward and further gaps and barriers identified on the basis of the knowledge and experience of the experts. This led to a survey of Steering Board members, looking for initial ways of solving the problems and for suggestions for their institutional implementation. These steps have led to the crystallisation of three main focuses for which concrete measures and actions now need to be developed.

- Overcoming quantitative deficits - measures for ensuring an adequate supply of skilled blue collar workers
- Overcoming qualitative deficits - measures for upgrading the skills of skilled blue collar workers, and
- Overcoming the barriers.

In a second Steering Board meeting, parallel workshops (each with 8-10 participants) for each focus were held with the aim of coming up with concrete proposals for the National Skills Roadmap. The results constituted the basis for a first draft of the National Skills Roadmap, which was discussed, approved and further detailed in a third Steering Board meeting at the end of January.

In developing the National Skills Roadmap, attention was paid - right from the word "go" - to the measures

- having as wide an effect (reach) on the workforce situation as possible (quantitative effectiveness),
- having a long-term effect on the quantitative and qualitative workforce situation (qualitative effectiveness), and
- gaining wide acceptance and support from the stakeholders involved (acceptance and support).

In the context of this process, strategic objectives were defined for each of the three focuses and a total of 40 proposals for measures developed. These proposals were then prioritised according to the criteria listed above, i.e. with regard to their reach, their long-term effects and their acceptance.

Finally, the 40 proposed measures of the National Skills Roadmap were "poured" into 26 concrete actions, each with a list of planned steps, and institutions responsible for their implementation and a planned implementation timeframe. As individual actions are also dependent on external factors (such as funding options), the constraints are also listed. The actions contained in the overall action plan are divided into three blocks according to their implementation priorities:

- Measures and actions with a high implementation priority, for which implementation is foreseen under Pillar II of the BUILD UP Skills Initiative[2];
- Measures and actions with a high implementation priority, though not to be implemented under Pillar II;
- Measures and actions with a low to medium implementation priority.

Looking specifically at the situation in Germany, the focus is not so much on concrete skill measures, as Germany already has a well-functioning apprenticeship system, as well as a comprehensive offering of CVET courses. For this reason, BUILD UP Skills Pillar II actions are supposed to be designed in such a way that they strategically support and strengthen the existing systems, as well as addressing "actors with a multiplier role" within the system. The establishment of career development concepts for workers in SMEs in the building sector, the creation of an early warning system for skills, a CVET database targeting specific groups and reflecting market requirements and regional "train the trainer" network conferences are some of the instruments foreseen. Nevertheless they need to be flanked by measures aimed at solving the biggest problems associated with energy-related building refurbishment and construction in Germany: the interfaces between trades and the lack of understanding for a

[2] The groundwork already accomplished is to be continued in a second BUILD UP Skills project. This follow-up project involves the development of new or the further development of existing skill upgrade measures based on the deficits identified and the measures recommended in the National Skills Roadmap.

house/building as one integrated system. In this area, actions are proposed aimed at anchoring these aspects in apprenticeship frameworks and CVET offerings.

Turning to the implementation of this strategic approach, the established and well-oiled "National Skills Platform" is to be continued, with it being involved in the further development of the German VET system for the building sector.

2. Introductory questions

In this chapter we will be discussing the aim of this paper (Chapter 2.1) and presenting a few key figures on the building sector (Chapter 2.2) as a starting point for developing a Skills Roadmap. The results of the status quo analysis are presented in Chapter 3, and used as a base for developing a strategy (roadmap) for achieving the targets (Chapter 4) and specifying the concrete measures needed to implement the strategy (Chapter 5). Chapter 4 will also show how the Skills Roadmap has been developed from an organisational perspective. Chapter 6 then describes the concrete action plan for implementing the measures identified.

The "building workforce" is defined as skilled blue collar workers employed in the identified occupations in the construction, finishing and building technology trades relevant in the energy-related refurbishment of buildings.

2.1 The aim of the National Skills Roadmap

The aim of this National Skills Roadmap is to come up with and reach agreement on measures ensuring that sufficient numbers of skilled workers with the right skills are available in order to achieve the EU 20-20-20 energy and climate targets in the building sector. One of the main intentions of this paper is to gain the political support of as many relevant stakeholders as possible, thereby allowing the measures to be implemented effectively and efficiently and to achieve a broad and long-term effect throughout Germany.

2.2 National Skills Roadmap for the Building Industry: background data

The ambitious EU 2020 climate targets announced in 2007 constitute the starting point for this roadmap. These seek a 20% cut in greenhouse gas (GHG) emissions, a 20% improvement in energy efficiency and 20% share of renewables in EU energy consumption by 2020.

With buildings responsible for some 40% of total energy consumption and for about a third of all CO2 emissions in most EU Member States (including Germany), the building sector plays a decisive role for the achievement of the EU's 20-20-20 targets.

According to the BMWi's 2011 energy data, the energy-saving target in the field of primary energy involves reducing overall German consumption from its 2008 level of 14,000 PJ[3] to 11,200 PJ by 2020. After subtracting consumption and losses within the energy sector, statistical variances and non-energy-related consumption of primary energy, final energy consumption is around 9,100 PJ.

For buildings alone, final energy consumption in 2008 accounted for 3,517 PJ. Under the assumption that energy consumption is to be cut by the same proportion in all energy fields,

[3] In line with the international unit measurement system *Système Internationale d'unités*, energy is measured in joules. Dependent on the field of application, other units may also be used. In the field of buildings, a kilowatt hour (kWh) is a frequently used unit. One joule (J) corresponds to 2.78×10^{-7} kWh, i.e. 1 PJ = 0.278 TWh.

this means that buildings will need to consume 700 PJ of final energy less. Mapping final energy consumption to the individual "consumers" within a building (heating, hot water, ventilation and air-conditioning (VAC) and lighting), the following amounts (see Table 1) need to be saved by each 'consumer" area:

Table 1: Final energy consumption reduction targets

Residential buildings (housing)				
Area	Share of energy consumption	Share of final energy consumption[4]	Target (-20%)	Amount to be saved
Heating	82.68 %	1,832.5 PJ	1466.0 PJ	101.9 TWh
Hot water	15.33 %	339.8 PJ	271.9 PJ	18.9 TWh
VAC	0.00 %	0.0 PJ	0.0 PJ	0.0 TWh
Lighting	1.99 %	44.0 PJ	35.2 PJ	2.4 TWh
Total	100 %	2,216.4 PJ	1,773.1 PJ	123.2 TWh
Non-residential buildings				
Area	Share of energy consumption	Share of final energy consumption 4	Target (-20%)	Amount to be saved
Heating	70.90 %	922.2 PJ	737.7 PJ	51.3 TWh
Hot water	6.74 %	87.7 PJ	70.2 PJ	4.9 TWh
VAC	3.87 %	50.3 PJ	40.3 PJ	2.8 TWh
Lighting	18.49 %	240.4 PJ	192.3 PJ	13.4 TWh
Total	100 %	1,300.6 PJ	1,040.5 PJ	72.3 TWh

Source: BMWi 2011, own calculations.

Looking specifically at buildings, there is a potential of 123.2 TWh of energy savings in the residential sector (101.9 TWh of which is attributable to heating) and of 72.3 TWh for the non-residential sector (51.3 TWh of which is for heating).

2.2.1 Situation in the building trade

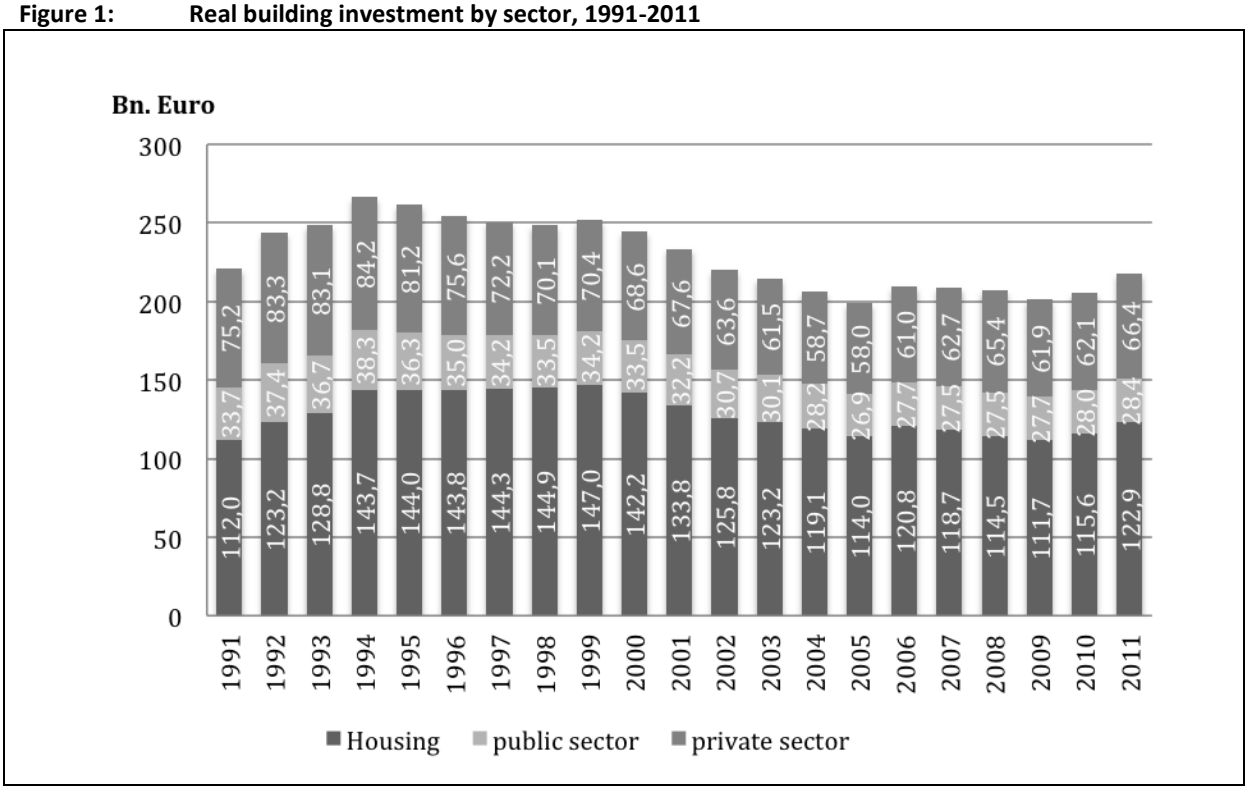
Whether with regard to its economic performance or to the size of its workforce, the building trade constitutes one of Germany's most important economic sectors, as illustrated by the following two indicators:

- In 2011 the sector employed 6% of the total German workforce.
- In 2011 8.9% of real GDP was attributable to investment in the building sector.

Moving on to look at which building subsectors account for the real building investment totalling EUR 217.5 billion in 2011 (cf. **Fehler! Verweisquelle konnte nicht gefunden werden.**), it quickly becomes clear that housing plays an important role.

[4] The shares of final energy consumptions were calculated on the basis of the 2008 figures.

Figure 1: Real building investment by sector, 1991-2011



Source: Destatis (2012), own calculations.

Complementing this picture of the amount of investment made over the last two decades, it is worthwhile looking at the status quo of the building stock in Germany in relation to the above-mentioned savings target.

Table 2 shows current energy consumption levels – by type of building – and verified factors for energy efficiency improvements through refurbishment measures.

Table 2: Building categories, assumptions regarding potential energy efficiency improvements and the resulting pre-refubishment final energy consumption

Type of building	Energy consumption [TWh]	Energy efficiency improvement [5]
Detached / semi-detached houses		
before 1949, not refurbished	84.7	0.806
before 1949, partially refurbished	16.5	0.611
before 1979, not refurbished	134.9	0.806
before 1979, partially refurbished	26.2	0.611
before 1996	34.9	0.563
before 2001	7.3	0.300
from 2001 onwards	5.1	0.000
Small blocks of flats		
before 1949, not refurbished	44.8	0.788
before 1949, partially refurbished	8.8	0.578
before 1979, not refurbished	71.2	0.788
before 1979, partially refurbished	13.9	0.578
before 1996	20.7	0.576
before 2001	4.2	0.300
from 2001 onwards	2.9	0.000
Large blocks of flats		
before 1949, not refurbished	8.9	0.781
before 1949, partially refurbished	1.7	0.563
before 1979, not refurbished	14.2	0.781
before 1979, partially refurbished	2.8	0.563
before 1996	4.1	0.563
before 2001	0.9	0.300
from 2001 onwards	0.6	0.000
Non-residential buildings		
before 1977	216.8	0.806
before 1984	20.6	0.750
before 1995	11.8	0.563
from 1995 onwards	7.2	0.000

Source: Own calculations taking BMVBS 2011 figures into account; Schröder et al. 2011; FGK 2011; dena 2010; dena 2011; Diefenbach et al. 2010; Wolff 2007; GDI 2006 and BMWi 2011.

A potential scenario was used in the project as a basis for calculating that additional annual investment to the tune of EUR 23.6 billion will be needed between 2014 and 2020 to achieve the EU targets.

[5] Efficiency is expressed as the relation between actual energy consumption and the 2020 target consumption of 35 kWh/a*m² (Diefenbach 2012). Correlations between demand and consumption parameters were not taken into account.

2.2.2 EU requirements

It is quite obvious that, in order to achieve the targets, sufficient numbers of workers with the right skills are needed in the building sector. The measures needed to build up the required skills in the building industry are primarily the responsibility of the individual EU Member States. Nevertheless, the European Union has several opportunities - including action plans and directives - at its disposal to influence national-level activities and to set certain skill requirements. In the past, it has made extensive use of these opportunities.

The EU Directive on the energy performance of buildings[6] for instance stipulates in its Article 17 that "Member States shall ensure that the energy performance certification of buildings and the inspection of heating systems and air-conditioning systems are carried out in an independent manner by qualified and/or accredited experts ...". Moreover, the EU Directive on the promotion of the use of energy from renewable sources[7] stipulates that "Member States shall ensure that certification schemes or equivalent qualification schemes become or are available by 31 December 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps." Last but not least, the EU's new Energy Efficiency Action Plan[8] accords skills and training a major role in achieving the energy efficiency targets in the building sector. This is one of the reasons behind the European Commission launching its BUILD UP Skills initiative in Europe "to support Member States in assessing training needs for the construction sector, developing strategies to meet them, and fostering effective training schemes."[9] The following section therefore looks at how Germany is reacting to these EU skill requirements and how they are being transposed into national legislation.

2.2.2.1 Transposition of the requirements deriving from the EU Directive on the energy performance of buildings

Even before the EU Directive on the energy performance of buildings[10] had actually been adopted, Germany had already gone ahead and revised its Energy Saving Regulation (EnEV) in 2007[11], setting the skill standards required of issuers of energy performance certificates. The EnEV now stipulates, in its Article 21, that only a specific group of people with the right skills are allowed to issue such certificates. As a first requirement, these issuers must either have at least a Bachelor degree in one of the following disciplines (architecture, construction engineering, building technology systems, physics, construction physics, mechanical engineering or electrical engineering) or a master craftsman qualification relating to a construction, finishing or building technology trade. A second requirement involves issuers' specific skills. Graduates must have specialised in energy-efficient construction or have at least two

6 Cf. EU 2010.
7 Cf. EU 2009.
8 Cf. EU 2011.
9 Ibd., p. 8.
10 Cf. EU 2010.
11 Cf. German Federal Government 2007.

years proven practical experience in a construction or building technology field. This second requirement can also be fulfilled by successful completion of a CVET course in the field of energy-efficient construction, independent of whether the person is a university graduate or a master craftsman in the construction, finishing or building technology trade. The contents of such a CVET course are defined in Annex 11 of EnEV 2007, although without stipulating a minimum duration (in hours) of the course. The second requirement is covered for instance by a course offered in nearly all skilled craft chamber districts, which teaches the skills needed for a person to become a certified energy performance consultant (*Gebäudeenergieberater*). Generally speaking, such consultants (certified by a craft chamber and thus entitled to issue energy performance certificates) have completed a 3-year apprenticeship in a construction, finishing or building technology trade, have then gained a master craftsman qualification (up to 1700 hours of instruction) and have, on top of this, taken a specific course on energy performance, in most cases involving a further 200 - 240 hours of instruction.

In Germany, the entitlement to issue energy performance certificates for existing buildings is the basis for recognition as a "specialist" for energy-efficient construction and refurbishment in many state-funded programmes. For instance in the KfW construction and refurbishment programmes related to energy efficiency the only people allowed to work as building assessors are those entitled to issue energy performance certificates under § 21 EnEV or certified consultants registered in the "local consultation programme" (the state-subsidised programme defined in the directives of the Federal Office of Economics and Export Control (BAFA)) of the Federal Ministry of Economics and Technology (BMWi). These are also the only people entitled to conduct the increasingly popular KfW-subsidised project supervision ("Baubegleitung") of state-subsidised energy-related refurbishment projects. With regard to the above-mentioned local consultation programme, the BMWi now requires (as of 1.1.2013) that building assessors must, alongside being certified to issue energy performance certificates under § 21 EnEV, also be able to prove that they have successfully completed a CVET course listed in the special CVET catalogue (Annex 3 of the regulations for local consultations).[12] In addition, local consultants must be independent and be able to prove that are not following any business interests when providing advice resulting in investment decisions.

As a way of gaining greater transparency with regard to who is qualified to perform energy efficiency consultancy work, a list of certified consultants, commissioned by the respective Federal ministries, is currently being compiled. Online since July 2012, this list provides a selection of specialists required under the state-funded programmes in the fields of:

- Energy consultancy for residential buildings
- Energy-related planning and supervision for highly energy-efficient construction and refurbishment projects, as well as for
- the energy-related refurbishment of heritage buildings.

[12] Cf. BMWi 2012.

All specialists listed here are at least qualified to issue energy performance certificates under §21 EnEV, as well as possessing a further qualification entitling them to perform consultancy work in such programmes as the BAFA "local consultation programme". This list of specialists has the purpose not just of introducing greater transparency but is also to be seen as a quality assurance measure. Before being listed, the qualifications of the specialists are checked. To stay listed, specialists must be able to prove (every two years) that they have taken part in skill-upgrade courses and must submit reports on the work conducted. Moreover random checks are carried out by neutral specialists, checking the work performed. For more information, see: www.energie-effizienz-experten.de.

2.2.2.2 Fulfilling the requirements found in the EU Directive on the promotion of the use of energy from renewable sources

Article 14.3 of the EU Directive on the promotion of the use of energy from renewable sources (EU Renewables Directive) stipulates that "Member States shall ensure that certification schemes or equivalent qualification schemes become or are available by 31 December 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps. Those schemes may take into account existing schemes and structures as appropriate, and shall be based on the criteria laid down in Annex IV."[13]

In this context, the question arises of the current skills status quo in Germany and what still needs to be done to implement the Directive. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety commissioned an external study specifically to look into this question.[14] The detailed study of the apprenticeship frameworks and other requirements relevant to implementation found that there was no explicit need for additional measures to implement the Directive. "Looking at the IVET and CVET system currently existing in Germany in the skilled craft sector and the current IVET requirements, we see no need for additional measures with regard to the certification and qualification schemes stipulated under Art. 14.3 of the EU Renewables Directive."[15] Craft sector installers already obtain the requisite skills for installing, maintaining and repairing renewable energy systems within their apprenticeships. The only recommendation put forward is that a voluntary skill upgrade programme for older installers be established, i.e. for workers too old to have benefited from the modern apprenticeship frameworks.

The study confirms that the German apprenticeship system ensures high skill levels not just for conventional technologies but also for recent and innovative ones.

Although no immediate measures are needed to fulfil the requirements of the EU Renewables Directive, the German Confederation of Skilled Crafts (ZDH) has nevertheless taken the decision to draw up a Federal CVET programme for training "certified specialists for renewa-

[13] Cf. EU 2009, p. 34.
[14] Cf. Kuhbier / Wuppertal Institut / WM Consultant 2011.
[15] Ibd., p. 386.

bles". This initiative saw representatives of the skilled crafts chambers and specialists from the directly concerned trade federations setting up a working group for the purpose of discussing the basic design of such a programme, the necessary examination requirements (under §42a of the Craft Code - HwO) and a national curriculum.

This all ended with the ZDH presenting its Germany-wide recommendation for a CVET programme for training "certified specialists for renewables" in December 2012. All skilled crafts chambers are now called on to adopt this recommendation in their respective districts. The examination regulations cover 5 specific training modules and one basics module. Candidates will be examined on their knowledge of the basics and in two of the five specific areas relating to different renewables. In doing so, account is taken of the need for programme participants to be able to increasingly cope in the future with aspects transcending their base trade. The CVET courses will involve some 200 hours of instruction, and will end with a state examination for certification as a renewables specialist ("*Geprüfte Fachkraft für Erneuerbare Energien*").

With this new Germany-wide CVET programme the skilled craft sector has created a forward-looking offering going beyond the requirements set forth in the Directive and guaranteeing a high skill standard for specialists in renewables energy systems in Germany.

3. The situation in Germany as the starting point for developing a national roadmap - findings of the status quo analysis

The status quo analysis for the building workforce in Germany[16] showed that a major boost to current investment levels will be needed to achieve the climate protection and energy-efficiency targets in the building sector. Between 2014 and 2020 EUR 23.6 billion a year of additional investment needs to flow into the refurbishment of residential and non-residential buildings in order to bring down the energy consumption of buildings by 20%. This has major consequences on the demand for skilled workers. To cope with this rise in investment levels, some 90,000 additional skilled blue collar workers will be needed in the occupations of relevance for carrying out energy-related refurbishment measures between 2014 and 2020.

Even so, the model calculations of the QuBE team[17] show that, despite the surge in demand, there will not be any nationwide shortage of skilled workers - at least on paper - and that even in 2020 the supply of skilled workers will still be slightly greater than demand. The forecast additional demand is expected to reduce the existing surplus of workers to - dependent on the model used - 150,000 workers (BIBB-DEMOS) or 50,000 (BIBB-FIT). This does not however mean that there will be no regional shortages of skilled building workers before 2020. Moreover, when looking at specific occupations, it can be seen that shortages of skilled labour can be expected with regard to electricians, metalworkers, engineers, installers and fitters. Even now shortages of skilled labour are being experienced in certain regions with regard to occupations related to energy and heating systems.

What can also be seen is that the skilled labour situation will deteriorate throughout Germany from 2021 onwards, when the "baby-boomers" start retiring, demographic change increasingly hits labour supply and when investment levels in energy-related refurbishment remain at a high level or even increase. The gap between a (demographically induced) sinking labour supply and a continuing high level of labour demand in the building sector is expected to continue to expand until 2030.

Against this background, measures need to be taken at an early date to ensure adequate numbers of skilled building workers. This is an important focus in the National Skills Roadmap. In tapping new labour sources, care needs to be taken that the requirements of this target groups are taken into account when designing new VET concepts. Also of decisive importance are incentives aimed at getting people to remain employed in the occupations they originally trained for.

The status quo analysis for the building workforce in Germany also showed that the necessary skill sets are already well-anchored in the apprenticeship frameworks and master

[16] Cf. Weiss/Rehbold (Eds.)
[17] Cf. ibd.

craftsman examination regulations of the occupations studied and that the relevant technologies and processes were basically covered[18]. Existing gaps in the apprenticeship frameworks are closed at a later stage in the context of gaining a master craftsman qualification, **meaning that the latter can be seen as playing a decisive role in training and quality assurance**.

In addition, Germany has a very comprehensive CVET system for the building workforce. Just looking at the field of energy efficiency and renewables, a 2011 survey of organisations in the crafts and building industry offering CVET programmes revealed 315 offerings (not including programmes for gaining a master craftsman qualification).[19] Within this very broad range of offerings, two focuses can be observed: On the one hand, a large number of short-length courses (5 - 50 hours of instruction) focus on skill updates or on providing information on new statutory requirements, while on the other hand there are a large number of longer-length courses (>200 hours) for acquiring new skills, for instance qualifying a person as a certified energy performance consultant. Looked at overall, these CVET offerings cover all relevant technologies and processes.

Nevertheless the status quo analysis has revealed a number of qualitative deficits and other barriers:

- Though workers have high skill levels and generally perform the work directly related to their trade well, there are often deficits in their "linkage" to other trades.
- In this context, one skill missing is the capability to think beyond one's own process, understanding the whole house/building as one integrated system.
- Existing early warning systems for skills are not used systematically and interlinked with each other, meaning that CVET courses often do not take into account steadily increasing requirements.
- The number of participants in CVET courses is generally low and has decreased continually over the last three years. The reason for this can be seen in the good economic situation of craft companies in the construction, finishing and building technology trades.
- These courses are often not clearly structured and/or not known to target groups not belonging to the respective chambers. Existing databases are not used as often or as intensively as possible, a situation possibly reflecting deficits in tailoring them to the needs of the target groups.

All these problems need to be tackled in order to ensure a continuing supply of workers with the right qualifications in the building industry.

[18] This is due to the fact that apprenticeship frameworks are worded without reference to specific technologies. This in turn means that, especially in the innovative "energy" field, apprenticeships can be constantly adapted to the latest technologies and processes.

[19] In addition, manufacturers offer a wide range of training courses for their products - an aspect not however looked at in the context of the study.

4. A strategic approach to eliminating the identified training deficits

On the basis of the findings of the first phase of the project (the status quo analysis), the next step involves first defining the fundamental considerations to be taken into account (Chapter 4.1) and subsequently the methodology to be used in developing the Skills Roadmap (Chapter 4.2).

4.1 Strategic considerations in developing the Skills Roadmap

With regard to tackling the identified problems (explained in the following chapter), the strategy involved focusing on the following objectives/success factors:

- Quantitative effectiveness: attempting to come up with measures having as wide an impact as possible on the skilled labour situation in Germany.
- Long-term effectiveness: attempting to come up with VET measures related to achieving the climate protection targets and having a long-term effect on the quantitative and qualitative skilled labour situation in Germany.
- Acceptance and support: attempting to come up with measures that will be accepted and supported by as wide a range of stakeholders as possible, thereby enabling the first two objectives to be better achieved. This success factor plays a decisive role in the design of the methodology to be used in defining the Skills Roadmap and in the associated communication processes.

4.2 Achieving the climate protection and energy efficiency targets: the methodology used in defining the National Skills Roadmap

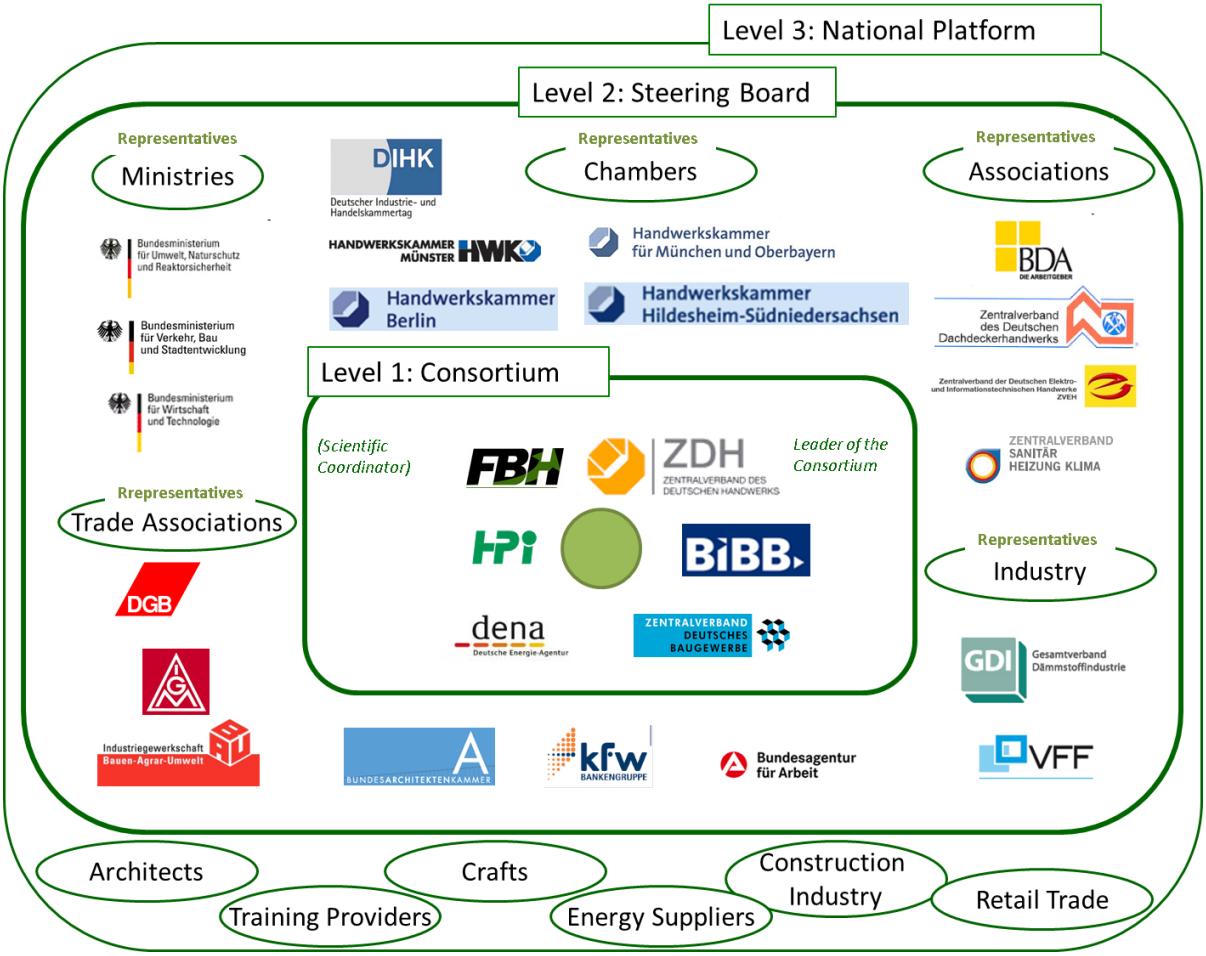
Despite the already high skill levels found in the building workforce in Germany and the work done over the last few years to further improve the situation, there still remain certain skill deficits needing to be overcome.

In this respect, the German BUILD UP Skills project "Qualergy2020" has initiated a process of defining a national strategy. The first step involved setting up a National Skills Platform (cf. Figure 2) uniting 56 stakeholders from the relevant fields. These were in turn informed at an early stage of the study findings.

In a second step and on the basis of the national status quo report and gap analysis, an Steering Board consisting of representatives from 26 different institutions was set up. Alongside the actual consortium members, the Steering Board includes representatives from the most important stakeholder groups (ones with a multiplier effect) from the national skills platform (*Qualifikationsplattform*). These include the competent Federal Ministries, the trade unions, important trade associations, chambers and institutions closely associated with energy-related refurbishment programmes and training. Further Steering Board members are representatives of important industry federations in the field of building insulation and windows (see Figure 2). Through limiting the number of Steering Board members, the

intention was to enable an in-depth discussion of all relevant issues of the National Skills Roadmap.

Figure 2: BUILD UP Skills GERMANY / QUALERGY2020 – Steering Board and National Platform



The following institutions were represented:

Consortium:

- Zentralverband des Deutschen Handwerks e.V./ German Confederation of Skilled Crafts. (ZDH)
- Forschungsinstitut für Berufsbildung im Handwerk / Research Institute for Vocational Training in the Skilled Craft Sector (FBH)
- Heinz-Piest-Institut für Handwerkstechnik / Heinz Piest Institute for Craft Technology (HPI)
- Deutsche Energie-Agentur GmbH / German Energy Agency (dena)
- Bundesinstitut für Berufsbildung / Federal Institute for Vocational Education and Training (BIBB)
- Zentralverband des Deutschen Baugewerbes / German Building Industry Federation (ZDB)

Federal Ministries

- Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit / Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
- Bundesministerium für Verkehr, Bau und Stadtentwicklung / Federal Ministry for Transport, Building and Urban Development (BMVBS)
- Bundesministerium für Wirtschaft und Technologie / Federal Ministry of Economics and Technology (BMWi)

Trade unions:

- Deutscher Gewerkschaftsbund / German Trade Union Confederation (DGB)
- IG Bauen-Agrar-Umwelt (IG BAU) (Germany's main building union)
- IG Metall (IGM) (Germany's main metalworkers union)

Associations:

- Bundesvereinigung der Deutschen Arbeitgeberverbände / Federal Confederation of German Employer Associations (BDA)
- Zentralverband der Deutschen Elektro- und Informationstechnischen Handwerke / Confederation of German Electrical and IT Crafts (ZVEH)
- Zentralverband Sanitär Heizung Klima / HVAC Confederation (ZVSHK)
- Zentralverband des Deutschen Dachdeckerhandwerks / Roofers Confederation (ZVDH)

Chambers:

- Deutscher Industrie- und Handelskammertag e.V. / German Confederation of Industry and Commerce Chambers (DIHK)
- Skilled Crafts Chamber for Munich and Upper Bavaria
- Berlin Skilled Crafts Chamber
- Munster Skilled Crafts Chamber
- Hildesheim-Southern Lower Saxony Skilled Crafts Chamber

Institutions related to processes on the building site:

- KfW-Bankengruppe (KfW) (the state bank providing refurbishment grants and loans)
- Bundesarchitektenkammer / Federal Chamber of Architects (BAK)

Industry:

- Gesamtverband Dämmstoffindustrie / Confederation of Insulation Manufacturers (GDI)
- Verband Fenster und Fassade / Federation of Window and Facade Manufacturers (VFF)

Labour market institutions:

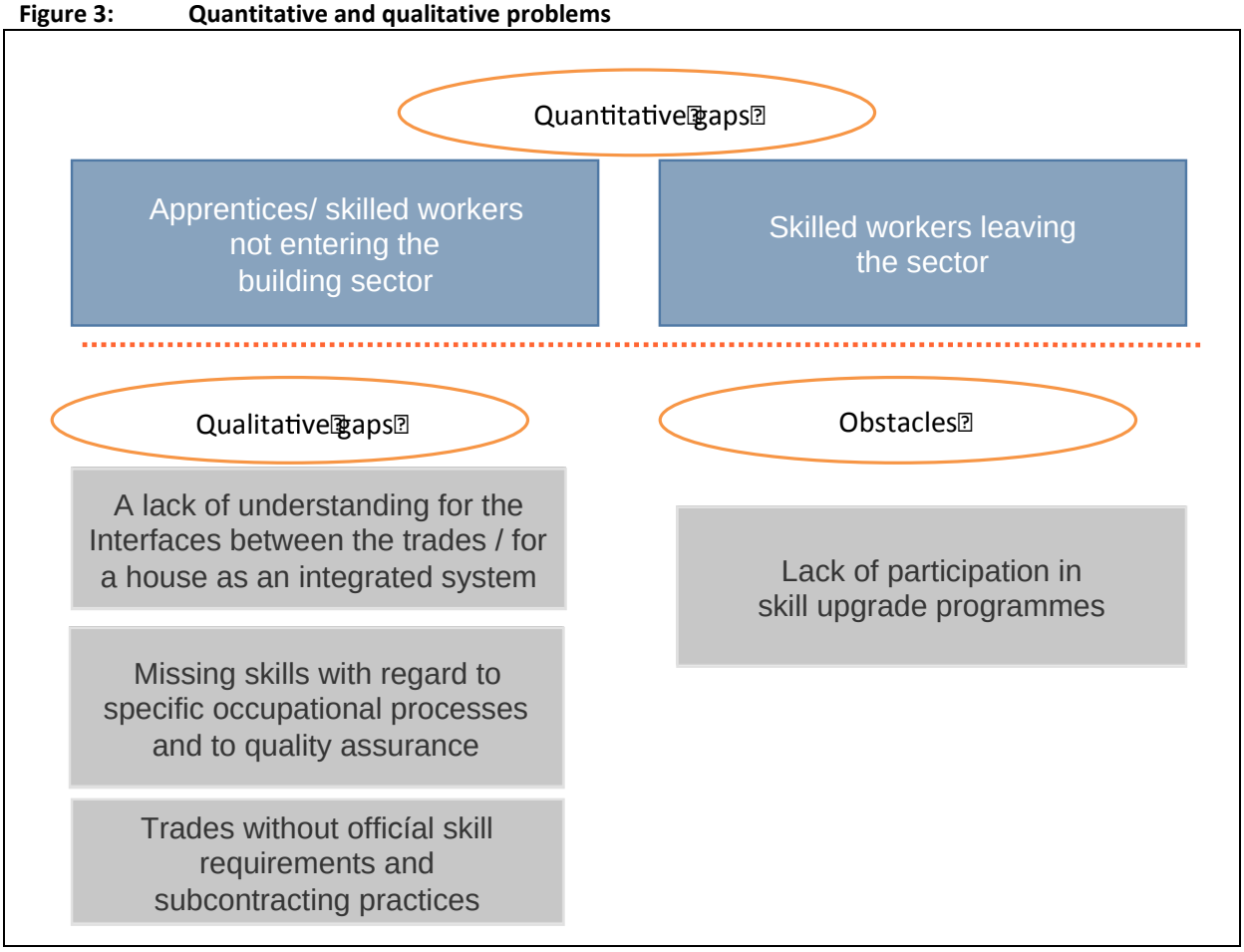
- Bundesagentur für Arbeit / Federal Labour Agency (BA)

To define the National Skills Roadmap, the Steering Board came together three times. Taking place on 10 September 2012, the first meeting was used by the consortium to present the identified quantitative and qualitative deficits, and to discuss these and initial recommendations, derived from the gap analysis, with Steering Board members. In doing so, the Steering Board members were able to gain a common background for their future work.

A round-table discussion was then used to identify any further qualitative gaps deriving from the many years of experience and knowledge in the field of building and refurbishment processes available to Steering Board members. The objective of the first meeting was to gain consensus on the core qualitative and quantitative problems of the building workforce and on the main issues needing to be taken into account when developing a National Skills Roadmap.

After the meeting a list of the main problems was compiled and broken down into sub-problems. Possible solutions were also outlined. An overview of the identified problems is to be found in Figure 3.

Figure 3: Quantitative and qualitative problems



This in turn was used as a basis for a survey conducted among Steering Board members in mid-September. They were asked to come up with concrete ideas for solutions to the identified problems and also to give details of which institutions could help implement the solution.

As a result of these two steps, three focal areas were identified, for which concrete solutions need to be provided in the further development of the Roadmap.

- **Overcoming quantitative deficits - measures for ensuring an adequate supply of skilled blue collar workers**,
- **Overcoming qualitative deficits - measures for upgrading the skills of skilled blue collar workers**, and
- **Overcoming the barriers**.

The three focal areas will be looked at in greater detail in Chapter 5, with the basic problem, the defined strategic objectives and the recommended measures being described.

In a second Steering Board meeting on 5 November 2012, all subject areas were first discussed. Steering Board members' knowledge on the three focal areas was then tapped in three parallel workshops, each with 8 - 10 participants. In these, concrete solutions were defined as input for the National Skills Roadmap. The workshops results were then presented and discussed in plenary session. They constitute the basis for the first draft of the National Skills Roadmap presented in Chapter 5. In a third Steering Board meeting in late January 2013 the National Skills Roadmap was finalised. Since then, everything is being done to enlist support for it.

5. Identification and prioritisation of measures needed to achieve the 20-20-20 targets

The results of the workshops and discussions of the three Steering Board meetings constitute the basis for the National Skills Roadmap presented in Chapter 5.1. Chapter 5.2 consolidates the identified measures in a catalogue, attaching to each an implementation priority.

5.1 Identification and description of necessary measures

5.1.1 Overcoming quantitative deficits - measures for ensuring an adequate supply of skilled blue collar workers

One of the main factors influencing the Federal Government's objective of achieving a carbon-neutral building stock by 2050 is the continued availability of sufficient numbers of skilled blue collar workers in the building sector. This applies especially to the post-2020 period. While energy-related refurbishment activities need to continue at a high rate after 2020, this dictating the continuing availability of a skilled workforce, the supply of building workers is expected to drop significantly on account of demographic factors.

Against this background the course needs to be set at as early a stage as possible to ensure sufficient numbers of skilled workers in the building sector. It needs also to be remembered that demographic change will fuel competition between economic sectors for the best workers in Germany. The Steering Board discussion led to four strategic areas being identified:

- Tapping unused potential
- Enhancing the attractiveness and image of the identified occupations
- Stopping skilled workers leaving the trade and improving retention rates
- Promoting mobility and integration

In these four areas, the following key questions need to be looked at:

- Which target groups are particularly relevant for ensuring an adequate supply of skilled workers in the building sector?
- How can the image and attractiveness of working in the building sector be further enhanced, especially for young people?
- What can be done to stop skilled workers who have been trained inter alia to perform energy-related refurbishment work leaving the trade?
- What can be done to encourage young people and skilled workers from abroad to take up work in the identified occupations in Germany?

It is also important to recognise that the four areas are closely linked, with the question of attractiveness and image playing a decisive role in all four. We continue by first defining and prioritising the main target groups, and then looking at the concrete fields of action.

5.1.1.1 Tapping unused potential - target group analysis

In a workshop dedicated to the question of ensuring a continued adequate supply of skilled workers, the relevant target groups needing to be addressed were discussed among Steering Board members and prioritised in accordance with their importance. The main groups identified were:

a. **School students** - whatever qualification level reached
b. **University dropouts** - those having studied construction or electrical engineering, or architecture
c. **Women**
d. **Older people** (55 +)

In addition there are also other target groups needing to be taken into account:

e. **Skilled workers and school-leavers from abroad**
   - **Young people who have dropped out of school and have no school-leaving certificate**
   - **Unemployed and low-skilled workers**

This "ranking" indicates that the main priority is attached to tapping domestic potential and that the target candidates should already be sufficiently qualified.

With regard in particular to these main target groups (a. - d.), one of the main focuses involves enhancing the attractiveness of the building sector as a whole, as well as boosting the image of specific occupations. If this is achieved, i.e. when the relevant occupations remain

outside the spotlight, it will not be possible to make greater inroads into the available potential. The measures to be taken in this field are described in greater detail in Chapter 5.1.1.2.

In addition, the following measures have been identified for the individual target groups:

a. School students

Alongside boosting attractiveness, the main thrust for this target group involves "winning over" school students for a career in the construction, finishing and building technology trades through information campaigns and vocational guidance. We are already seeing skilled craft organisations adopting a range of measures to direct students' attention towards craftsman careers. These activities need to be further enhanced, with a particular focus being put on construction, finishing and building technology occupations. Measures include getting kindergarten children to work with their hands, going into schools and promoting the building trade, compiling learning/teaching aids focused on the trade and increasing vocational guidance activities in VET centres. There are a number of innovative "best practices" available in this context.

- For instance, skilled crafts chambers in Saxony have been cooperating with the "Haus der kleinen Forscher" (House of the little researchers) Foundation since 2009, with the aim of fostering the enthusiasm of 3 - 6 year-olds for scientific and technical phenomena. This involves providing kindergarten staff with the necessary background knowledge. Staff take part in seminars where they are shown ways of fostering the interests and inclinations of 3 - 6 year-olds in the fields of science and technology through play. Creative experiments help to waken the curiosity of the children and to get them working with their hands.[20]
- A further good opportunity of getting kindergarten children interested in building are the Pixi books.[21]
- In its "SchulBaustelle Klima" (climate protection school building site), the Hamburg Skilled Crafts Chamber is leveraging the rebuilding / refurbishment of schools to underline their relevance for teaching. The basic idea is to leverage building projects, most of which have an energy-efficiency aspect, as places for learning more about construction, skilled crafts and climate protection. In cooperation with the Hamburg's teacher training institute, 15 project ideas and almost 50 learning modules have been developed, with which the building work in progress can be directly integrated into school lessons. The teaching proposals have been tried out in seven reference schools. Along with establishing links between practical examples and theoretical teaching requirements, a further focus is on explaining the importance the way a building is built and used has on climate protection and which technical options are available to save energy. In discussions with building sector employees, students also gain insights into various building occupations with good prospects for

[20] Cf. Dresden Skilled Craft Chamber 2009.

[21] Pixi books are small children's books. A whole series of Pixi books relates to the skilled craft sector, including (titles translated) "My brother is a carpenter", "One of my friends is a roofer", "One of my friends is a butcher", "One of my friends is a baker" or "Our car repair garage".

the future in the skilled crafts sector. A good example of "hands-on" vocational guidance[22], this initiative points the way towards expanding development of such practical learning material.

Along with increased information and awareness campaigns for construction, finishing and building technology occupations in kindergartens and schools, vocational guidance towards building trades must be stepped up. The first step here is to make the requirements for an apprenticeship in these occupations known to school students - i.e. students need to know what will be required of them to take up an apprenticeship in the building sector. Vocational guidance in VET centres needs to be stepped up, with a focus being put on trades of relevance to the energy-related refurbishment of buildings. This must be accompanied by increased offers of work placements, summer jobs and other opportunities of getting a taste for the work, enabling young people to get to know more about "their" building occupation. It is up to company owners to offer more such "get to know" opportunities and to thus get young people interested in the career perspectives offered in the building sector in general and in their company in particular.

The school students target group
1. Kindling children's interest for construction, finishing and building technology occupations from a very early (kindergarten) stage
2. Developing "hands-on" learning material for schools
3. Informing about the requirements needing to be fulfilled to take up an apprenticeship in the building sector
4. Expanding opportunities for students to do a work placement / summer job in a building company

b. University dropouts

An as yet widely ignored target group are students who have dropped out of university, and especially ones having previously studied construction or electrical engineering, or architecture. Insofar as they have no intention of completely changing their field, university dropouts are good candidates for the building sector workforce. Dependent on how far they have got in their studies before they dropped out, they already have knowledge which makes it easier for them to start a career in the construction and finishing sector. This might for instance allow them to take a short-length apprenticeship, possibly complemented by an overall career development plan charting a career path beyond the apprenticeship. Generally speaking, dropouts often bring with them a level of qualifications enabling them to take up managerial positions at a later stage in their careers.[23] The skilled craft sector offers for

[22] Cf. Hamburg Skilled Craft Chamber 2012.

[23] A similar approach is being used in the skilled craft career development programme (started in 2012), an initiative of the Unterfranken Skilled Craft Chamber in conjunction with the University of Würzburg. See www.karriereprogramm-handwerk.de. Here companies can post their apprenticeship offers. The main occupational fields involved are business, electronics and IT, precision engineering, metalworking and woodworking. As well as enjoying a 1-year reduction in the duration of their apprenticeship, university dropouts

instance the opportunity of gaining an "on-top" qualification alongside an apprenticeship. Various "on-top" qualifications (*Zusatzqualifikationen* or ZQ) exist, for instance as an assistant to the manager (*Betriebsassistent*) or as a certified technical management specialist (*Technischer Fachwirt*). Students with a successfully completed apprenticeship and such an "on-top" qualification can expect to move up the career ladder quicker, assuming positions of responsibility in management or production. In addition, certain "on-top" qualifications can be counted as part of a master craftsman training, as is for instance the case with certified technical management specialists in the Erfurt skilled crafts district.[24]

In order to tap the potential of university dropouts, the skilled crafts organisations (ZDH, chambers and guilds), the building industry and the universities need to cooperate closely with each other. The first step involves identifying the dropout rate of students in the relevant disciplines and how such students can best be approached. Further important steps involve analysing and assessing existing training offers and clarifying how existing qualifications can be taken into account. In this context, a pilot project of the Federal Employment Agency and the skilled crafts organisations is to be carried out, looking into ways of attracting university dropouts to the construction and finishing sector in selected regions. One focus here will be put on establishing close contacts with student unions in universities and polytechnics.

The university dropout target group
5. "A career in the building industry after dropping out of university" - a pilot project with the aim of gaining university dropouts in specific disciplines for a career in the construction and finishing sectors

This target group should not just encompass students who have dropped out of university but also students who have dropped out of their apprenticeship. The aim here is to keep them in the skilled craft sector, wherever possible encouraging them to take up an apprenticeship in a construction finishing or building technology trade. Already existing initiatives such as "Vera" need to be expanded. In the context of this initiative, apprenticeship counsellors have been available since 2010 to counsel young people encountering problems during their apprenticeship. The approach involves building a "tandem" between counsellor and apprentice. In this way apprentices receive support, for instance when they suffer from examination fears, have language deficits or conflicts with the company in which they are doing their apprenticeship. In this way, breaking off an apprenticeship can be avoided.[25]

can take the chamber examinations to gain the qualification of a Certified Technical Management Specialist (Technischer Fachwirt) and/or of a certified apprentice instructor.

[24] Cf. Erfurt Skilled Craft Chamber (no year).

[25] Cf. BMBF (no year).

c. Women

Even if a lot of building work is associated with heavy physical work, construction, finishing and building technology trades still offer a wide range of opportunities for employing more women. To kindle more interest for these fields, women need to be much better informed of the advantages and opportunities awaiting them in the building sector. The image campaign to be staged by the skilled crafts sector needs to also target women, on the one hand highlighting specific aspects and on the other hand giving women increased prominence. This can be done for instance by the simple use of photos, but also by presenting best practices underlining the success of women in the building sector. When addressing this target group, the training and career opportunities in the building sector open to women also need to be stressed.

Nevertheless, one pre-condition for mobilising this target group involves giving greater weight to the problem of reconciling family and work. A key aspect here is that the state - at whatever level – must offer an appropriate childcare infrastructure and that the companies in the construction, finishing and building technology sectors offer flexible employment opportunities.

The women target group
6. Giving greater prominence to women in image campaigns (also via best practice examples)

d. Older people (55+)

Older people are of twofold importance when looking at ways of ensuring sufficient numbers of skilled workers. On the one hand, the focus must be on retaining older building workers as long as possible in the companies where they work. This involves making available to older employees employment opportunities involving less heavy physical work. In this context it should be remembered that one of the main reasons for workers taking early retirement is the heavy physical work in certain occupations and the fact that at some stage they are no longer able to do such work. On the other hand, the aim must be to open company doors to older and physically fit people with experience in the building trade.

One way of retaining people in employment involves developing a CVET programme with the aim of training quality assurance officers ("Qualitätsbeauftragten am Bau"). Such a programme would give older workers the opportunity to expand the skills they have built up over years to include quality assurance processes, thereby allowing them to be retained by their companies and in the building sector. Such training could also offer permanently/temporarily disabled workers (as a result of a work-related accident or workers in a rehabilitation phase) the opportunity of continuing to work in their occupational field in a skilled capacity.

The 55+ target group
7. Checking the feasibility of setting up a CVET programme for training quality assurance officers in the building sector

5.1.1.2 Enhancing the attractiveness and image of building occupations

To ensure sufficient numbers of skilled building workers in the future and to get more people from the above-mentioned main target groups into the sector, a decisive factor is to enhance the attractiveness of the building sector in general and to improve the image of those occupations relevant for the energy-related refurbishment of buildings. In this context, it is necessary to:

- boost the image of the building sector, promoting the benefits, overcoming prejudices and underlining the prospects for the future;
- better visualise career paths, and
- offer more work placements, summer jobs and other "get to know" opportunities.

Image-boosting measures

Though building occupations actually offer a lot of benefits and advantages, these are not generally perceived and indeed hardly transmitted at all. They need to be more highlighted in the future, thereby helping to boost the image and attractiveness of building trades. **Advantages / benefits** include:

- High levels of technology – Many occupations in the construction, finishing and building technology trades have become very technology-oriented in recent years. This is especially true with regard to technologies for renewable energy, and occupations in this field require high technical competence and are characterised by continual innovation and change.
- Hands-on training – An apprenticeship involves a great amount of hands-on training, mainly in the company and on building sites. The focus is on comprehensive processes covering all aspects of the work.
- Visible results – As is the case in most skilled craft occupations, people working in energy-related refurbishment projects actually see the results of their work.
- Teamwork – Most work in this field is done in small teams, and nobody has to work by himself.
- Employment opportunities both locally and worldwide – A successfully completed apprenticeship in a building trade opens the door to jobs both in the home region and throughout the world. German building workers are welcome on building sites throughout the world on account of their comprehensive and specialist training.
- Good wages – It needs to be pointed out that earnings in the building sector are relatively good compared to workers in other trades with similar-level qualifications.

A further way of enhancing the attractiveness of construction, finishing and building technology occupations lies in accentuating their **future prospects**:

- Jobs with a future – Jobs in the construction, finishing and building technology trades are jobs with a future and offer high job security, especially as the objective of achieving a carbon-neutral building stock by 2050 requires an increasing rate of refurbishment work and the construction of new and increasingly energy-efficient buildings.
- Helping Germany achieve the "Energiewende" – Moreover it needs to be made clear to young people in particular that working in the building sector means being able to help shape Germany's "Energiewende", its shift to "clean" energy.

Putting across these benefits, overcoming prejudices, and highlighting the future prospects for jobs in the building sector belong to the main tasks of the skilled craft organisations in the building sector and the building industry itself. The sector's image campaign launched two years ago needs to be extended, promoting the attractiveness of working in the building sector. The campaign has already led to a much greater public awareness of the skilled craft sector, with young people in particular now more aware of what the sector has to offer. Moreover the sector's social standing has improved. The campaign also highlights the role played by the skilled craft sector in Germany's "Energiewende" (see Figure 4).

Figure 4: Examples from the sector's image campaign, focusing on green technologies

The campaign also has a special feature targeting young people (the "SuperKönner"). This includes videos spotlighting ten different apprenticed occupations, as well as tutorials about innovative young craftsmen. Moreover, young people tell stories of their first steps in employment.[26]

One recommendation for the future is that this successful campaign focuses - wherever possible - on construction, finishing and building technology occupations, underlining their modern and forward-looking orientation, as well as their numerous positive aspects. There are three organisational levels with responsibility for this campaign. At the top, the ZDH is responsible for the overall campaign without any particular focus on any specific occupations. In the middle, the building trade associations focus on specific aspects, while at the

[26] Cf. DHKT 2012.

lowest level the individual companies also do their bit. We are already seeing numerous trade associations in the skilled craft sector tailoring the campaign to their specific needs, as witnessed by the ZDB's "Profis am Bau" initiative. Two industry confederations - the German Confederation of Roofers and the German HVAC Confederation - are making extensive use of the campaign as a way of gaining skilled workers. These activities need to be stepped up. At the same time companies in the construction, finishing and building technology sectors need to be motivated to fill the campaign with life and thereby to also help enhance attractiveness. Companies need to increasingly assume the role of "ambassadors". This saw the ZDH conducting a survey in the third quarter of 2012 on the subject of "the importance of promotional activities in skilled craft companies". One intention of the survey was to find out which quality and performance features were important for companies in the way they saw themselves and in their own promotional activities, which online channels they used for advertising and public relations, and which advertising templates they judged to be most beneficial. The results are expected to help better tailor the campaign to company requirements.

When trying to reach young people, all new channels - including the social media and YouTube - need to be used.

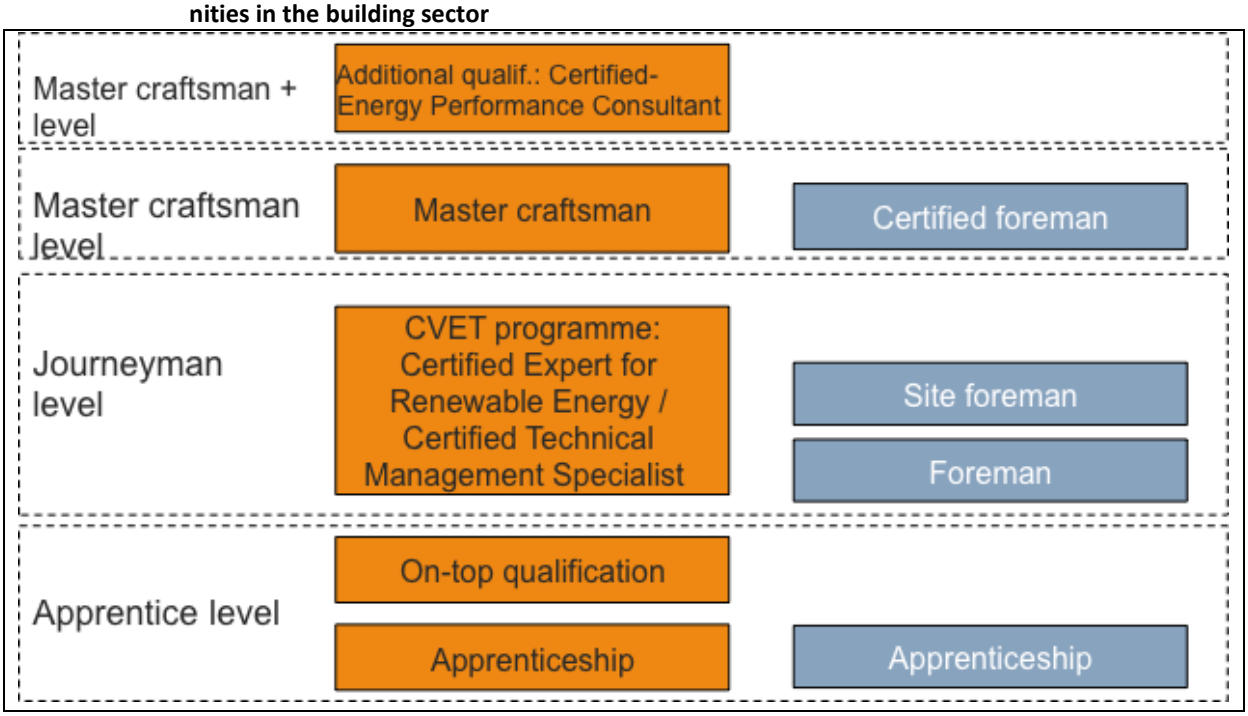
Improving the image and attractiveness of building occupations
8. Recommendation to upgrade the craft sector's image campaign to promote the positive aspects and the modern and forward-looking orientation of construction, finishing and building technology occupations

Highlighting career opportunities more

Alongside promoting the above-mentioned positive aspects, the career opportunities open to building workers need to be highlighted more. The occupations in question - as with all other occupations in the skilled craft sector - display a high degree of career permeability. Starting with an apprenticeship (with or without an "on-top" qualification), journeymen have several career options open to them, independent of whether they have studied at university or not. Moving up the career ladder via the system of career development courses in the building industry, one can advance to become a foreman or (certified) site manager. On the other hand there are many skill upgrade courses available for journeymen, all built on the knowledge gained as an apprentice. Gaining a master craftsman qualification in a specific trade offers a different route up the career ladder, enabling people to become self-employed and start up their own business (or take over an existing one). Such a qualification also opens the door to university, allowing people to pursue an academic path based on their practical knowledge. Even staying with the skilled craft sector, gaining a master craftsman qualification also opens the door to becoming a business economist (*Betriebswirt*) under the Skilled Crafts Code or a certified energy performance consultant (*Gebäudeenergieberater* (HWK). Figure 5 charts the career opportunities open to workers in the building

sector (the left-hand column shows the standard career development path in the skilled craft sector).

Figure 5: Standard career development path in the skilled craft sector / career development opportunities in the building sector



This standard career development path in the skilled craft sector needs to be further developed to accommodate the requirements of specific occupations, allowing concrete career planning and development (see Chapter 5.1.3). Showing which career opportunities are available is first and foremost the responsibility of the ZDH and the trade associations involved in energy-related refurbishment work. It needs to be done using as far as possible real-life examples from the trade. The recently launched series "Handwerk ist mein Leben"('Crafts are my life'), in which the careers of young master craftsmen are shown in exciting video clips is exemplary and needs to be further developed.[27]

Increased promotion of career opportunities in the building sector must not be solely the responsibility of the skilled craft sector, but must also be taken up by the Federal Employment Agency and the respective ministries. IVET counsellors in job centres are in daily contact with young people and therefore in a position to inform them on the attractiveness of occupations in the construction, finishing and building technology sectors, as well as on the career opportunities open to them here. To keep job centre staff abreast of the changing job profiles, more information sessions need to be held for them by the skilled crafts chambers and relevant trade associations.

Similarly, ministries also need to put more effort into promoting the career opportunities in the building sector in the context of their employment initiatives. One such initiative is the

[27] Cf. DHKT 2012.

joint action of the BMWi and BMBF, "Praktisch unschlagbar" (practically unbeatable), which promotes the ´benefits of an apprenticeship[28] and which could be supplemented by a specific segment targeting construction, finishing and building technology occupations.

Whether promoting the sector's attractiveness or the career opportunities offered by the sector, one decisive factor will be to get the message across in schools. To achieve this, partnerships between schools and building companies (but also between trade associations and schools) need to be intensified, with appropriate promotional material being made available.

Highlighting career opportunities in the building sector more
9. Leveraging the skilled craft sector's image campaign and propagating successful career stories
10. Informing potential candidates about the attractiveness and career opportunities of occupations related to the energy-related refurbishment of buildings / more vocational guidance events.
11. In addition: Information sessions for job centre staff for updating their knowledge of the relevant building occupations
12. Leveraging existing initiatives (such as "Praktisch unschlagbar") to promote the career opportunities available in the building sector

Providing more opportunities to get a taste of the work (work placements, summer jobs)

A further possibility of getting young people in particular interested in the relevant occupations involves enabling them to get a taste of the work through work placements, summer jobs, etc. in companies belonging to the construction, finishing or building technology trades. More such openings need to be offered by the companies in question - short-term employment opportunities are often sought by school students, especially during school holidays. The same is true for work placements. These are also an opportunity for the companies to present themselves and what they do, and thus to get the students interested in working there. Whether on a work placement or a summer job, students should be adequately remunerated, thus providing an incentive for them to come back and to think about taking up an apprenticeship in one of the relevant occupations.

Regional job centres and local VET centres should also help bring companies and young people (including women) together, for example through organising local or regional work placement / summer job markets. One possibility in this area is to make use of the structures of existing "apprenticeship markets" (*Lehrstellenbörsen*).

[28] Cf. BMBF/BMWi 2013.

Providing more opportunities to get a taste for the work (work placements, summer jobs, etc.)
13. More work placements and summer jobs
14. Introduction or further development of local or regional work placement / summer job "markets"

Increasing apprenticeship remuneration / wages in general

In the view of the trade unions, there is a need to bring apprenticeship remuneration in the skilled craft sector up to the same levels found in the commercial and industrial sectors. This is seen as a major factor influencing the attractiveness of apprenticeships in the construction, finishing and building technology trades. In addition, more attractive wages and collective agreements are seen as necessary to retain employees in the building sector. It is undisputed that the levels of apprenticeship remuneration and wages place a major role in determining the attractiveness of apprenticeships and jobs in the building sector. The responsibility for setting apprenticeship remuneration and wage levels is in the hands of the social partners.

5.1.1.3 Increasing the retention rate

To ensure the future availability of sufficient numbers of workers skilled in energy-related building technologies, those already having the requisite skills in the construction, finishing and building technology trades need to be retained in the sector. In this context, the focus must be put on establishing appropriate staff development policies within companies, analysing factors motivating people to remain in (and to enter) the identified occupations, and establishing ways of allowing employees to keep on working when they get older.

- **Staff development policy:** Alongside a high degree of employment security and attractive wages, the availability of career development opportunities plays a decisive role in binding skilled employees to a company and thus retaining them in the building sector. To achieve this, suitable young candidates need to be shown - wherever possible during the apprenticeship - by the company owner what career development opportunities are open to them. This should be backed up by a corresponding career development plan including the courses needed to climb the career ladder and achieve the set career goals. Turning to older employees, CVET courses play a key role in retaining them in the company. Such staff development policies are however rare in building companies, mainly because most companies in the construction, finishing and building technology trades are very small and because the daily workload hardly allows the time to compile and implement such strategic plans. What is needed here are guidelines for a staff development policy. These would help small and medium-sized companies to establish a strategic staff development policy and conduct career planning. The employment of older workers also needs to be taken into account.

- In this context, CVET courses for employees working in the field of energy-related refurbishment should take place much more than is currently the case in the winter months, thereby using periods of short-time working for upgrading skills (see Chapter 5.1.3).
- Moreover, there is relatively little data available on the reasons why people enter the construction, finishing and building technology trades and why they stay in the trade after completing their apprenticeships. More recent surveys of young people's decision-making behaviour with regard to a job either in the skilled craft sector or in industry show that wage levels are less important than assumed in many quarters. It would therefore seem to be a good idea to focus more on non-monetary factors, such as working conditions and career perspectives (e.g. opportunities to upgrade skills).[29] In this respect, the factors motivating people not just to enter the skilled craft sector but also to stay there need to be studied in greater depth as a basis for defining strategies for retaining skilled workers in the building trade.
- To help older skilled workers to stay longer in a company, the feasibility of developing specific CVET courses for this cohort needs to be studied. On account of their long years of practical work on building sites, these workers have a wealth of experience that can be utilised in the field of quality assurance, with a particular focus on interface problems (between trades). As described above, one way of retaining such skilled workers is to compile a CVET programme enabling them to become "building QA officers" (Qualitätsbeauftragte am Bau). With the pension age set to be raised, ways of adapting work to the capabilities of older people need to be introduced. One focus here involves improving the infrastructure of building sites with the aim of taking greater account of waning physical capabilities. Examples include the provision of warm-up rooms in winter months, the increased use of lifting and moving equipment, and better building materials.
- Moreover, the trade unions and other Steering Board memebers deem it necessary to ensure more attractive collective agreements for the building sector, making the sector more competitive vis-à-vis other sectors and thus improving the retention rate. Attractive wage structures are indisputably an important instrument for tying skilled workers to a company. Nevertheless, many workshop participants and Steering Board members deemed this to be the domain of collective bargaining between the social partners. The trade unions are also proposing so-called "demographic collective agreements" for older workers. There are however certain reservations against them and they need to be collectively bargained. They are therefore not listed as a measure to be implemented.[30]

[29] Cf. Wolf 2012

[30] The union proposals provide for financial support (€300 a month over 24 months) for older workers participating in a CVET programme while continuing to work in an employment matching their qualification.

Increasing the retention rate
15. Developing staff development concepts for SMEs in the construction, finishing and building technology trades
16. 16. Concentrating CVET courses in the winter months, thus utilising periods of short-time working to upgrade skills
17. Analysing the factors motivating people to stay in the construction, finishing and building technology trades

5.1.1.4 Promoting mobility and integration

Against the background of increasing competition for skilled workers within Germany and the decreasing size of the overall German workforce, possibilities for gaining young people and skilled workers from abroad for employment in the construction, finishing and building technology trades need to be looked into. In this context, the current status of labour supply and demand varies greatly within the European Economic Area, with a number of European countries currently facing historic unemployment peaks as a result of the economic and financial crisis. In Greece and Spain, youth (under-24) unemployment now exceeds 50%. In a number of countries, the high unemployment rate is the result of bursting real estate bubbles and has resulted in large numbers of building workers being laid off. Against this background, increased migration would be a boon for both giving and taking countries.

In this context, the German Federal Government has adopted a special programme (MobiPro-EU) aimed at promoting the occupational mobility of young people interested in an apprenticeship in Germany and of young unemployed workers from other European countries. Established as a 2-year programme, MobiPro-EU started in January 2013 and targets people from EU countries in the 18 - 35 age range. EUR 40 million a year are earmarked for funding language courses in the country of origin, partially financing travel expenses for job interviews, or reimbursing costs for recognition procedures and courses.[31] The programme is funded by the Federal Ministry for Employment and Social Affairs and implemented by the Federal Employment Agency in conjunction with in conjunction with the Agency's Professional Placement Service (ZAV). The German Confederation of Industry and Commerce Chambers (DIHK) and the German Confederation of Skilled Crafts (ZDH) were involved in the implementation planning.

However, with regard to young people, but also to older workers, the mistakes made in the past must not be repeated.[32] A strategic approach needs to be adopted, including an analysis of the chances of getting more people to come to Germany and to stay here, and taking into account the necessary additional qualifications needed. This means that the following questions need to be answered:

[31] Cf. Bundesagentur für Arbeit / Federal Employment Agency 2012.

[32] Criticism is voiced here with regard to the fact that no institutional support is foreseen under the MobiPro-EU programme. This means that skilled crafts chambers receive no financial support when wanting to support young people all skilled workers coming from abroad.

- Under what conditions would (young) people be prepared to come to Germany? Which factors are most important for them?
- Which factors lead them to stay in Germany? What needs to be done to ensure their successful social integration?
- Are the (young) unemployed and older workers sufficiently qualified? Do qualifications/skills need to be upgraded?

For the first two blocks the proposal is made to conduct an on-the-spot survey of (young) people in conjunction with foreign partners participating in the BUILD UP Skills initiative. The objective of the survey would be to find out under which conditions (young) people would be prepared to leave their home towns and emigrate to Germany. A further focus of the survey would be to investigate their expectations associated with a move to Germany, and to living and working there. The stories of young people and skilled workers who have already moved to Germany could be helpful here, and they should thus also be covered by the survey. Answers to and appraisals of these questions can help the responsible institutions to better cater for the young people and to shape - in conjunction with the host companies - social integration in such a way that they become willing to remain in Germany. The planned support in the context of the MobiPro-EU programme with regard to language training is an important instrument - though not only the one - in this respect. Further measures encouraging young people to stay in Germany could involve specific support for them during their apprenticeships, linkages to staff development and skill upgrade measures, as well as a positive career outlook. Generally speaking the focus must be on making the young people feel that they are welcome in Germany - an aspect that Germany needs to put a lot more effort into. This is also a task of the trade associations, and can take the form of campaigns promoting the work-related integration of immigrants and the elimination of possible negative opinions in the companies.

Even so, the immigration of young (unemployed) people and skilled workers from abroad should not be a one-way street. Complementing the above-mentioned survey, a further survey could investigate the conditions under which young Germans or skilled workers would be prepared to work abroad. The BUILD UP Skills partners should thus conduct a joint survey of the relevant groups in the selected countries.

With regard to the question of whether qualifications will need upgrading, at least a country-by-country analysis will be necessary. What is however more probable is that each case will have to be looked at individually. The insights gained in the context of transposing the EU Directive on the recognition of professional qualifications (2005/36/EC)[33] into the corresponding German law (Anerkennungsgesetz) could be of use here.

[33] Cf. EU 2005.

Promoting mobility and integration
18. Conducting a survey in individual EU Member States on conditions encouraging young people to come to Germany and to remain there

5.1.2 Overcoming qualitative deficits - measures for upgrading the skills of skilled workers

The gap analysis has shown that the skill sets necessary for achieving the 20-20-20 targets by 2020 are already taught in Germany within the country's IVET and CVET system. This finding was based mainly on an analysis of the statutory provisions relating to the identified process steps and technologies.[34] Nevertheless, further problem areas were identified in discussions with a number of experts, especially those belonging to the National Qualification Platform and the Steering Board. These all need to be looked at, with possible solutions including the development of further training measures. In the field of qualitative gaps, the following problem areas are seen:

1. "A lack of understanding for the interfaces between trades / not understanding a house/building as an integrated system",
2. "Missing qualifications of skilled workers with regard to individual occupational processes",
3. "Missing qualifications in specific groups of people" and
4. "Certain trades without statutory skill requirements, as well as the whole aspect of subcontracting".

In the following section, the first three problem areas are looked at, with possible solutions and the associated measures being presented. The section summarises the results of the discussions, survey and workshop focused on the qualitative problem areas. With regard to the fourth problem area, no immediately implementable solutions were put forward, meaning that only the problem is described in the text.

5.1.2.1 Gaining a better understanding for the interfaces between trades and understanding a house/building as an integrated system

The discussions have shown that not all people performing energy-related building work have sufficient understanding of the interfaces between the various trades involved (in particular communication and cooperation aspects), or of the consequences of their own work in connection with an understanding of a house/building as an integrated system (in particular aspects related to building physics). Both these areas are however of major relevance for ensuring high-quality energy-related refurbishment and are therefore very closely interlinked.

Successful cooperation between individual trades requires a system-based approach taking into account the work of other trades on a building as an overall system, an understanding

[34] Cf. Weiss/Rehbold (Eds.) 2012, Chapter 9.

of how individual work processes are interlinked and the importance of good communications between the trades. An understanding for a house/building as an integrated system is necessary in order to be able to assess and perform one's own work in an overall context.
The following measures are proposed as ways of improving this understanding.

a. Including the basic principles of a system-based approach in the apprenticeship frameworks

The two-tier apprenticeship scheme in the building sector already takes account of the interface problems between individual building occupations.[35] However more account needs to be taken of the interfaces between building and building technology occupations. This means that the technical knowledge (in particular relating to building physics) regarding the interfaces between a building's envelope and its system technology (HVAC systems, electrics, energy production and supply) needs to be taken into greater account in training. On account of the major importance of such an understanding for executing high-quality energy-related refurbishment projects, a greater focus on this topic during an apprenticeship is required. Nevertheless it should not be forgotten that the primary objective of any apprenticeship is to make sure that an apprentice has a good command of his own trade. To avoid overloading an apprenticeship, all that should be done at this stage is to heighten an apprentice's awareness of the interface problems and his understanding of a house/building as an integrated system. The interface problem is already playing a major role in the realignment of occupations in the building and building technology sectors. Those involved in the realignment (Ministries, social partners, Bundesländer) will also be paying special attention to the interface problem in future realignment processes focusing on the journeyman and skilled worker level.

In this context, the possibility of executing cross-trade projects as part of the inter-company apprentice instruction programme (*Überbetriebliche Lehrlingsunterweisung*) was discussed. Apprentices from different trades could carry out a joint project in which their attention would be drawn to the interfaces with other trades and to understanding a house/building as an integrated system. Representatives from the trade associations have however pointed out that inter-company apprentice instruction programmes are for the most part drawn up by the Heinz Piest Institute in conjunction with the trade association responsible for the respective occupation. This procedure makes it more difficult to draw up cross-trade inter-company instruction programmes and generally limits the flexibility of such programmes. A further problem involves the difficulties associated with organising such a measure. In this respect, the trade associations have pointed out that there is a danger of overloading an apprenticeship and of overburdening apprentices. The aim of an apprenticeship should be to let an apprentice gain full knowledge of his chosen occupation and acquire the necessary skills for executing the work specific to the occupation in a safe and skilled manner. Nevertheless, both the BIBB and the HPI are of the opinion that the possibility and extent of cross-

[35] Building occupations in this context are occupations coming under the Building Industry IVET Regulation (Verordnung über die Berufsausbildung in der Bauwirtschaft).

trade cooperation during an apprenticeship needs to be looked into in the context of VET college curricula and inter-company apprentice instruction programmes. Reference is made here to a successful model already practiced in schools, where a teaching programme has been developed for dealing with cross-trade teaching/learning situations in building and finishing occupations.

Inclusion in apprenticeship programmes
19. Including the basic principels of a system-based approach in the apprenticeship frameworks
19. (a) Checking the feasibility of a Germany-wide inclusion of model-tested cross-trade learning situations in building sector apprenticeship programmes

b. Compilation of a cross-trade CVET programme covering "interfaces between trades / an understanding of a house / building as an integrated system"

Apprenticeship frameworks are defined without reference to any specific technology and with a process focus. This in turn means that, especially in the innovative "energy" field, apprenticeships can be regularly adapted to the latest technologies and processes. Apprenticeship frameworks therefore do not have to be continually amended to take account of new technologies and their influence on associated processes. This means however that including the basic principles of a system-based approach in the various apprenticeship frameworks will be a time-consuming affair. As a way of addressing this topic in the short term and in sufficient depth, an appropriate CVET programme targeting the journeyman level needs to be established.

In the context of such a programme, the technical skills relating to the interfaces between a building's envelope and its technical facilities (HVAC systems, electrics, energy production and supply) and to an understanding of a house/building as an integrated system need to be taught. A further aspect involves teaching ways of improving communication between those involved in an energy-related refurbishment project.

The discussions showed that certain training measures possibly meeting these skill requirements already exist in this field. Examples include the CVET programmes training people to become a “certified passive house worker”[36], a "European building energy expert" or an "execution expert for energy-saving buildings" (programme currently under development as part of the "InnoQua"[37] project).

The second-mentioned programme was developed by 7 European VET institutions in the context of a project commissioned by the European Commission. Its objective is to teach

[36] The course leading to a qualification as a “certified passive house worker“ was developed by the Allgäu Energy and Environment Centre and is offered in conjunction with various members of the Federal Association of German Energy and Climate Protection Agencies (eaD). For more information, see www.ead-bildung.de. For concrete course details, see www.passivhaus-handwerker.de.

[37] Cf. ZDH 2012b.

participating journeymen the basic principles of building physics and interfaces between the trades, thereby enabling them to implement in practice the wide range of requirements emanating from building energy counselling.[38]

In the context of a further project involving a CVET programme to become an "execution expert for energy-saving buildings" (under §42.a HwO), a first step has been taken in this direction. Its aim is to provide journeymen with the skills enabling them to fulfil the future requirements of people commissioning their services independently and with the right set of skills. Through practice-oriented knowledge of the interfaces between the different trades, journeymen are expected to develop a cross-trade feeling for the work they do in the context of an energy-related construction project. Improved communication between the different trades on a building site is a further objective of this cross-trade CVET programme.[39]

Against the background of already existing training measures with this focus and the wish to develop a CVET environment displaying the greatest possible transparency, existing or planned programmes need to be looked at, checking what they have to offer in the field of interfaces between the trades and an understanding of a house/building as an integrated system. Should the assumption be confirmed that suitable training measures (such as the ones mentioned above) covering these requirements already exist, the latter should be made use of in the development of a new CVET programme.

Inclusion in a cross-trade CVET programme
20. Including the topics "interfaces between trades" and "understanding a house/building as an integrated system" in a cross-trade CVET programme

c. Giving greater weight to the CVET programme leading to recognition as a "certified energy performance consultant" (for master craftsmen)

One cross-trade CVET programme already existing in Germany and focusing on providing a comprehensive understanding of a house/building as an integrated system is the CVET programme leading to recognition as a "certified energy performance consultant". In the context of this programme, master craftsmen gain the qualification to carry out comprehensive building energy advisory work. Within the programme they learn how inspect and assess a building from different perspectives - whether building physics, technology status, compliance with building regulations, or ecological or economic considerations - and to develop concepts aimed at improving the building's energy balance in the long term. They perform consultancy work, supervise the resulting energy-related building measures and issue energy

[38] The CVET programme for training "European building energy expert" covers a total of 15 modules. Apart from Germany, it is also available in Spain, France, Great Britain, Ireland and Denmark. The objective of this training programme is to raise and standardise the skill levels of European building sector workers, with a specific focus on the energy-related refurbishment of buildings. Cf. Kompetenz Zentrum Holzbau & Ausbau, "Ausbildung zum Europäischen Gebäude-Energie-Werker jetzt zertifiziert", Kompetenz Zentrum Holzbau & Ausbau 2011 (no year).

[39] Cf. Dresden Skilled Craft Chamber 2012.

performance certificates in accordance with statutory requirements. Since 1997, more than 20,000 people have already taken part in the programme, gaining the title of a certified energy performance consultant. This programme, which ends with an examination set by the responsible chamber under §42a" HwO in a skilled crafts chamber, needs to be given greater weight, thereby ensuring that more people participate in it not just now but also in the future.

Giving greater weight to the CVET programme training people to become a certified energy performance consultant (HWK)
21. Giving greater weight to/developing the CVET programme training master craftsmen to become a certified energy performance consultant (HWK)

d. Checking the feasibility of a CVET programme for "one-stop-shop" for refurbishment services

Increased availability of "one-stop-shop" refurbishment services could serve as a solution to the lack of interaction between trades. "One-stop-shop" services would not just be a concession to home-owners calling for innovative services (such as a "one-stop-shop") to put a stop to them having to spend a lot of time looking for and coordinating different companies working in different trades. They are also to be seen as accommodating the meaningful (from an energy policy perspective) call for greater coordination of the different trades and greater supervision of the interfaces between the trades. This necessitates however energy-related competences going far beyond those required in one's own trade. Moreover, offering "one-stop-shop" services is in practice a field sown with barriers. These include legal issues such as the liability for individual lots (associated with a specific trade) and warranty aspects, but also business issues.

The CVET programme for training certified energy performance consultants could be a suitable first step towards offering "one-stop-shop" refurbishment services in the field of energy-related refurbishment, as it is specifically designed to provide the participating master craftsmen with a comprehensive understanding of a house/building as an integrated system, taking into account the interaction between the different trades.

Offering "one-stop-shop" refurbishment services however requires further competences, in particular in the fields of legal and business-related issues. In certain skilled craft chambers discussions have already started on setting up appropriate CVET programmes. The recommendation here is to take a look at existing offerings and to check whether a Germany-wide CVET programme training people - on the basis of already existing CVET programmes such as for certified energy performance consultants - to be in a position to offer "one-stop-shop" refurbishment services needs to be established. The first question needing to be answered in this respect is to what extent such a CVET programme would have a realistic chance of mar-

ket success. The German Federal Chamber of Architects holds a dissenting opinion in this matter.[40]

Checking the feasibility of a CVET programme for "one-stop-shop" refurbishment **services**
22. Checking the feasibility of a CVET programme for "one-stop-shop" refurbishment services. A first possible step: identifying and categorising existing offerings. Second step: development of a new / adaptation of an existing programme

e. Increasing the awareness of training staff for the topics of "interfaces between trades" and "an understanding of a house/building as an integrated system": design and implementation of a CVET concept as well as the development of information material

In Germany, apprentices can only receive training from people with the requisite personal and professional competences. Professional competence exists when the instructor has a professional and teaching qualification entitling him to provide instruction in the apprenticeship subjects. In a skilled craft subject to registration, a master craftsman title in the respective or a related trade is generally required.[41] These professional requirements demanded from instructors are one of the main factors behind the high quality of Germany's apprenticeship system.

In order to give greater weight to the topics "interfaces between trades" and "an understanding of a house/building as an integrated system" in apprenticeships in the construction, finishing and building technology trades, instructors and teachers providing inter-company apprentice instruction need to have a greater awareness of these topics. To achieve this, a CVET programme needs to be developed, focused on bringing together the relevant stakeholders (e.g. different trades, instructors from different trades, architects, etc.) and discussing such interface problems. This concept needs to be designed in such a way that it can be rolled out in different regions of Germany and thus multiplied.

In addition, information material needs to be compiled, again with the focus of increasing the awareness of training staff (wherever they work) for these topics.

Raising the awareness of training staff
23. Designing and implementing a CVET concept as well as developing information material

5.1.2.2 Overcoming skill deficits related to individual processes

Looking at Germany's VET system as a whole, the skill sets needed for energy-related refurbishment measures are already available. Nevertheless, on examining specific apprenticeship frameworks certain skill deficits were identified, raising the question of whether these

[40] In the opinion of the Federal Chamber of Architects, there is no need to check a CVET offering for "one-stop-shop" refurbishment services. The measures should instead focus on improving the execution of building work on a building site. It would be a great help to have planners (architects, engineers) networking more with those responsible for executing the work.

[41] Cf. ZDH 2012a.

were actually gaps or whether the deficits were related to tasks that can only be carried out by master craftsmen. The main deficit areas involved skills sets related to occupation-specific processes, such as journeymen identifying refurbishment needs or providing advice. Quality assurance in the execution phase is a further topic dealt with in this section.

a. Taking greater account of the "maintenance" process (including identifying refurbishment needs)

The topic "identifying refurbishment needs" and the associated "triggering consultancy work" was the subject of controversial discussions. On the one hand it was argued that giving greater weight to the topics of "interfaces between trades" and "an understanding of a house/building as an integrated system" would also help journeymen gain a greater awareness for identifying refurbishment needs. On the other hand it was pointed out that this topic was already dealt with in the course of an apprenticeship, even if it had not yet been explicitly included in the official apprenticeship frameworks. As a solution to this problem, it was agreed that, when updating such frameworks, this process should be explicitly included.

Inclusion in apprenticeship frameworks
24. Including the processes "maintenance"/"identification of refurbishment needs" in the apprenticeship frameworks and framework curricula

As the identification of refurbishment needs is deemed to be a very relevant task in the scope of tasks done by a journeyman, this deficit identified in the study needs to be further looked into, clarifying whether this topic needs to be explicitly included in an existing CVET programme or whether a specific CVET programme needs to be developed.

Checking whether greater account of this process needs to be taken in CVET offerings
25. Studying the need to take greater account of the process "maintenance" / "identification of refurbishment needs" in CVET offerings

b. Identification of the necessary skill sets for an advisory competence – development of a CVET programme

The process step "provision of advice" (including noting customer wishes and providing customers with information after work has been completed) was similarly identified as a gap at journeyman level.[42] This was the subject of a controversial discussion as to whether sufficient capabilities, knowledge and skills regarding this topic were taught during an apprenticeship. What is involved here is however solely the noting of customer wishes and the informing of customers after work has been completed. The order-related provision of advice to a (potential) customer is (and will continue to be) a service performed exclusively by a master craftsman. The discussions showed that customer orientation is already a feature of all modern apprenticeship frameworks, and should also be taken into account when updating older frameworks. On the other hand, an improvement of customer communica-

[42] Cf. Weiss/Rehbold (Eds.) 2012, Chap. 9.

tion / advice was seen as an important topic. Greater weight needed to be attached to it in the context of CVET programmes. One important target group for such a programme were high-performing journeymen. One prerequisite for such a programme was however that the requirements that journeymen needed to meet when advising customers would have to be ascertained in an intensive dialogue with the trade associations. Without this, no final assessment could be made as to whether an additional CVET programme for high-performing journeymen needed to be developed. In this context, a study was needed, looking into whether CVET programmes addressing this topic already existed, and how such a CVET programme could be integrated into the career development concept of the skilled craft sector.

Taking greater account of the process step "noting customer wishes"; checking whether a CVET programme is needed for the provision of advice process
26. Giving greater weight to the topic "customer orientation" in apprenticeship frameworks
27. Identifying the necessary skill sets needed by a journeyman to provide high-quality advice. If needed, development of an appropriate CVET programme

c. Setting execution quality standards and “branding” the existing CVET programme for "certified renewable energy experts”

In the context of developing the Skills Roadmap, a further item discussed was how quality standards in the execution of energy-related refurbishment projects could be improved. It transpired that, as part of various projects (including ones in which the German Energy Agency (dena) had participated) checklists for building supervisors had been drawn up. These were however currently not often used. This already existing material was to be examined as to whether it could be used generally. If this was the case, and after possible adaptations, it was to be disseminated for more general use.

Making greater use of existing quality assurance material
28. Examining existing quality assurance material (e.g. checklists). If proved to be generally useable, disseminating it for more general use, possible after adaptation

A further finding at journeyman level was that apprentices were not given any training in quality assurance and customer acceptance processes on completion of work[43]. These processes were however the responsibility of the master craftsman who had been taught the necessary capabilities, skills and knowledge during his master craftsman training. The quality assurance and customer acceptance processes carried out by a master craftsman are to be seen as a guarantee for high quality and should therefore remain in the hands of a master craftsman.

In this context, the discussions also focused on the installation of renewable energy systems. As already stated in Chapter 2.2.2.2, a survey has confirmed that the German apprenticeship

[43] Cf. Weiss/Rehbold (Eds.) 2012, Chap. 9.

system similarly ensures a high quality standard for these modern and innovative technologies. The fitters trained under the new apprenticeship frameworks thus fulfil the requirements demanded for installing renewable energy systems. However, the creation of a voluntary skill upgrade programme for older fitters was recommended. Against this background, the DHKT issued a recommendation in December 2012 to all skilled crafts chambers to adopt the CVET examination regulation for "certified renewable energy experts" under §42a HwO. Older journeymen taking part in this CVET programme are to be trained to install, commission and maintain renewable energy systems in accordance with customer wishes, using the necessary equipment and tools, calling on the services of any required partners and observing accident-prevention regulations. They should also participate in the associated planning process. This CVET programme explicitly targets renewable energy systems, dealing with such subjects as the selection, planning and sizing of the systems, their installation as well as the execution of certain maintenance procedures. In doing so, a contribution is made to ensuring quality in the “execution” process. Everything should be done to support the establishment of this new programme, especially for older journeymen, in line with the federal-level recommendation.

Alongside the use of renewable energy, a further key task involves the optimal insulation of a building's envelope, thereby minimising overall energy needs. A further requirement is therefore to take account of recent developments in the field of thermal insulation and insulation technology. Nevertheless no additional training measures are (as yet) deemed necessary. The existing occupational profiles already cover the necessary knowledge and skills, whether at apprentice level or up to master craftsman level. In addition, a wide range of CVET courses exists in this field[44]. As the examination regulations in these field have neither been standardised throughout Germany nor recommended by the DHKT, they can only be promoted regionally by CVET providers.

Branding the "certified renewable energy expert" qualification
29. Branding the CVET programme leading to a "certified renewable energy expert" qualification

5.1.2.3. Training for certain groups of people

a. Analysis of the initial programmes for training immigrants

Insofar as the demand for skilled workers is also to be met by workers from abroad, the issue of which qualifications these people bring with them and whether any specific training measures are necessary needs to be looked at. In the context of the discussions on tapping unused potential, skilled workers and school-leavers from abroad are seen as an important, though not top-priority group. The primary focus should be on activating the potential of the domestic population. Nevertheless the subject of apprentice and skilled worker mobility

[44] Cf. Weiss/Rehbold (Eds.) 2012, Chap. 7.4.

within the European Economic Area is playing an increasingly important role[45] , and with it, the issue of which training measures are needed by people who have not received their vocational training and education in Germany in order to be able to work in Germany.

As national VET systems and cultures differ greatly even within Europe, there is no point in developing one single training / skill upgrade measure for all immigrants, whatever their country of origin. Each individual case needs to be looked at separately.

Before deciding on whether a training / skill upgrade measure is necessary, sufficient information about the target group - such as country of origin, skills acquired there or the personal situation (e.g. the motivation for migrating to Germany[46]) needs to be gathered. Dependent on the target group, individual training / skill upgrade measures need to be planned. With regard to assessing qualifications gained in the country of origin, procedures used in assessing foreign professional qualifications in the context of the Federal Act on the Recognition of Foreign Professional Qualifications could in future act as a starting point.[47]

When drawing up a skill upgrade programme for immigrants, great importance should be attached to a person's capability to communicate with others when executing an energy-related refurbishment project. This applies especially to technical terms, and it is important that all people using such terms have the same understanding of what they mean. The discussions showed that projects focusing on training immigrants already exist. These therefore need to be identified and analysed with regards to the results achieved. Moreover experience gained in the context of the Federal Act on the Recognition of Foreign Professional Qualifications can also be leveraged.

Analysing initial experience on training immigrants / upgrading their skills
30. Identifying projects involving training immigrants / upgrading their skills and analysing the results

b. Developing labour demand and training concepts for building companies targeting the low-skilled

The issue of whether workers have sufficient skill levels also applies to the cohort of "low-skilled workers". Of major importance in this area is the establishment of staff development concepts within companies. SMEs in particular need greater support in staff development and need to be informed about opportunities for training their staff. The development of

[45] Cf. Chapter 5.1.1.4.

[46] Cf. Chapter 5.1.1.4.

[47] The objective of this Act, which came into force on 01.04.2012, is to facilitate the recognition of professional qualifications gained abroad. Under it the (partial) equivalency of the foreign qualification is ascertained through comparison with a German reference qualification. The idea behind the Act is to facilitate the integration of migrants living in Germany. A further intention of the Act is to provide incentives for skilled workers from other countries to come to Germany. Cf. BIBB (no year).

such a concept, focused primarily on the needs of SMEs, is seen as a relevant aspect. The importance of such a concept was also discussed with regard to recruiting skilled workers and overcoming barriers and is looked at in greater detail in Chapter 5.1.3.

Training low-skilled workers
31. Drawing up labour demand and development concepts for building companies

5.1.2.4 The problem of certain trades without statutory skill requirements, as well as the whole aspect of subcontracting

In the context of the survey of Steering Board members and in the Steering Board discussions, the competition through subcontractors and competitors without the right qualifications and the resultant downward pressure on prices were identified as a major problem. In many cases, such competitors do not comply with training and quality standards and can therefore put pressure on established companies.

Three problem levels can be distinguished here. The first refers to the 2004 revision of the Skilled Crafts Code, in which 53 trades are now listed in the new Annex B1 as no longer requiring official approval to set up a company. These come on top of the trades previously listed in Annex B2. These trades include a number of building and finishing trades where previously a master craftsman (or same-level) qualification was needed to set up a company. This revision has led to a wave of new companies, especially in such trades as tilers, screed layers and parquet layers. In most cases, the companies are one-person businesses.

Secondly, the May 2004 EU accession wave saw 8 countries from Central and Easter Europe (as well as Cyprus and Malta) joining the European Union. In this context, so-called "small family businesses" became able to enter the market. The result is that, since the May 2004 accession wave, there has been a major increase in the number of craft companies set up by nationals from these accession countries. The foreign owners are making use of the easier access to the skilled craft sector opened up by the revision of the Skilled Crafts Code, and registering companies in Annex B1 trades where there are no longer (as of 1.1.2004) any statutory qualification requirements.

A further problem is that larger companies often make use of "subcontractor chains". In many cases this often means that it becomes very difficult to ascertain who is responsible for performing which service and whether those performing the work have the right skills.

With its revision of the Skilled Crafts Code and the abolishment of the qualification requirements, the legislator has set the wrong signal, leading to (possible) negative consequences for the quality of work on building sites in Germany. With regard to the increasing demand for energy-related refurbishment work and the construction of new energy-efficient homes, the focus should be on strengthening the importance of having a master craftsman qualification and not on weakening it - as is now the case.

As the shaping of these statutory qualification requirements is however solely in the hands of politicians, all that can be done in the context of this project is to point to the acknowledged aberration.

5.1.3 Overcoming barriers

The current problem of too low / increasingly lower participation in CVET programmes is attributable to two factors. With reference to the barriers presented in the Interim Report[48], these can be described as follows:

(1) The influence of a company's business situation on CVET participation
With the skilled craft sector dominated by small companies, participation in CVET courses is to a great extent dependent on the business situation of individual companies. When order-books are full, all available resources are needed to fulfil the orders, leaving staff very little time to attend courses. Conversely, when order-books are not so full, there are often not sufficient financial resources available to pay for staff training.

(2) *The influence on attendance figures of not having an overview of CVET offerings*
The survey of CVET offerings in the fields of renewable energy and energy efficiency carried out in the context of the status quo analysis has clearly shown that the CVET market has a wide-ranging and multi-facetted programme of courses on offer, but also that, on account of this plethora of offerings and the way they are structured, it is difficult to gain an overview of what is available[49]. The training measures offered by the different providers (chambers, industry and trade associations, VET centres, and manufacturers of building products and elements) are in no way coordinated. Instead they often have different names and lead to similar-sounding qualifications under various examination regulations (examination under § 42 / 42a HwO, certificates, certificates of attendance). This makes it difficult for company owners and staff to find the courses they need.

Based on the findings of the written surveys of the Steering Board, the discussions in the *CVET course uptake and transparency* workshop and the discussions between consortium members and with other experts in the course of the project, three strategic objectives for overcoming the barriers described above can be defined. These objectives are to be achieved through the implementation of concrete measures.

5.1.3.1 Offering incentives and creating opportunities allowing more people to take part in CVET programmes

With small skilled craft companies not having any specific HR structure, company owners need support in systematic career planning and development for their staff. The skilled craft sector already has its own "career concept" (Berufslaufbahnkonzept). Up to now this has been mainly used a template for systemising vocational training, with a few trade associa-

[48] Cf. Weiss/Rehbold (Eds.) 2012, Chap. 10.
[49] Cf. Weiss/Rehbold (Eds.) 2012, Chap. 7.4.

tions including in it specific CVET courses and career paths. Through the further development of this already existing tool and its adaptation to the needs of small companies, together with the compilation of guidelines for its use, the systematic career development of skilled workers can be improved. This is also seen as a way of tying workers to the company they work for.

In addition, such a systematic discussion of career paths and the acknowledgment of the necessity to provide career perspectives for the different target groups will have a positive effect on recruiting youn workers.

32. Further developing the career concept as an instrument for career planning and development in skilledcraft companies

Although grants and subsidies are available for allowing staff to take part in CVET courses, experience has shown that these are not always fully taken up. What is needed to increase uptake is a consolidation, systemisation and understandable presentation of the currently existing support measures. Similarly, discussions need to take place on developing new/alternative forms of funding or on adapting existing programmes to allow financial contributions to be put into a training fund. This would enable employees to take CVET courses when order-books are not so full.

33. Systemising, consolidating and constantly updating the support instruments for funding training

As the willingness to send employees on CVET courses is dependent on the order-book status, one possibility for increasing uptake would be to include a training entitlement in employment contracts. This could be achieved via company agreements or collective VET agreements and a binding VET law (DGB). As this suggestion is only being pursued by the trade unions, no concrete measures are presented here.

The building sector is subject to seasonal fluctuations with regard to orders and workload. This means that employees are not available for CVET courses in months when workloads are high. CVET providers are therefore looking into whether they can get more people to attend courses by scheduling the CVET courses more in the winter months.

34. Contracting CVET offerings in the winter months

5.1.3.2 Ensuring transparency in the existing range of offers on the CVET market

On account of the wide range of CVET courses offered by different providers, there is a need to register all existing offerings, compare them and then structure them. Dependent on their current reach and comprehensiveness, they should then, whenever deemed meaningful, be standardised.

Three forms of standardisation are seen as possible:

- Germany-wide standardisation in accordance with § 42 HwO,
- a chamber regulation under § 42a HwO on the basis of a recommendation issued by the DHKT/ZDH, or
- a standardisation of the titles and possibly the contents of similar courses at regional level.

Standardisation has the advantage of enabling standardised course titles and curricula (skills taught, contents, duration, organisation). In doing so, CVET in general will gain the status of a recognisable and well-known quality signal. When checking standardisation possibilities, recourse can be had to the existing criteria found in the CVET Agreement (*Vereinbarung zur Beruflichen Fortbildung*) concluded between the DGB and the business umbrella organisations belonging to the German VET coordinating body, the Kuratorium der Deutschen Wirtschaft für Berufsbildung. Any possibly needed definition of rules can then be built to the agreed standard.

The DHKT recommendation (adopted in 2012) regarding certified renewable energy experts can serve as an example for activities already taking place in this direction. With its partially harmonised course titles, the CVET programme for certified energy performance consultants is a further programme worthy of consolidation under a single "umbrella brand".

Parallel to this standardisation of CVET courses, it is intended to encourage a certain "course branding" in the skilled craft sector, thus encouraging the long-term development of high-quality CVET courses. The focus here is on courses with a duration of 200 hours or more and which end with an examination under statutory regulations by the responsible chamber.

35. Standardising training measures on the CVET market

As a way of regularly informing both employees and companies of existing CVET offerings, appropriate media material needs to be developed and implemented to make courses better known. This would involve the compilation of long-term regional marketing strategies drawing attention to CVET opportunities. This could be done via television and radio advertising spots, the distribution of flyers on building sites or via information sessions conducted by local skilled crafts chambers and/or trade associations. In all events, the objective must be to attract as much attention as possible.

36. Increased "branding", together with the development and distribution of promotional material making the range of CVET offerings better known

On account of its popularity, a key role is attached to Internet. A database tailored to the needs of companies and their employees is seen as a way of facilitating the distribution of information. The Internet allows permanent access to the data / information material, while at the same time allowing the database to be promoted via other websites.

Decisive importance is attached to campaigns highlighting specific courses of special relevance for upgrading employees' skills and to including these in career development concepts.
In designing a centrally coordinated database tailored to the needs of different target groups, the aim is to allow all companies and their staff to gain access to existing offerings quickly and in line with their needs. What is important here is finding the right relation between regionality and centrality with regard to access and data availability.

In addition, through aligning such a database with the career development concept, it can be used to support employee career planning and development in SMEs in the skilled craft sector.

37. Creating a CVET database tailored to the needs of specific target groups and the market, and taking career development concepts into account

As a way of increasing transparency, such databases can play an important role. At the same time it should be remembered that they are no substitute for face-to-face career development meetings. What is needed in this field is qualified CVET guidance. In this context, a CVET guidance concept needs to be developed. This would interact with the database and with the proposed career development concepts to provide holistic and comprehensive support in individual career development.

37. (a) Creating a CVET database tailored to the needs of specific target groups and the market, and taking career development concepts into account

5.1.3.3 Making sure that current and future training requirements are taken into account

Technological, economic, ecological, socio-cultural and statutory changes can affect skill requirements. They therefore need to be identified at an early stage, allowing an assessment to be made of how they can be taken into account in the overall IVET and CVET system.

Various VET actors related to the building sector already have at their disposal instruments for identifying new training needs at an early stage. However, these are currently not sufficiently interlinked and, with specific regard to the building sector, not fully and permanently

implemented. Provided that sufficient funding is available, this will soon be done. The intention is to examine the available instruments with regard to their application, where necessary to further develop them and combine them in such a way that future training requirements in the building sector can be continually identified at an early stage.

38. Setting up a skills early warning system as a cooperation project between the ZDH, HPI, FBH and BIBB

5.2 Prioritising and developing concrete implementation proposals

The results of the discussions and workshops show that certain measures are repeated (on account of different starting points), and that they might therefore be of special relevance for overcoming deficits and barriers. In our opinion, simply listing measures is not sufficient. What are needed are a consolidation of the different measures and an appraisal of their relevance and effects. Such a basis is needed to prioritise them. As already described in Chapter 4.1, the measures are to be appraised with regard to their reach, long-term effects and acceptance. Moreover, each measure is to be given an implementation priority, taking into account all the above-mentioned assessments and the extent to which they can be influenced by the stakeholders. This additional appraisal is necessary in order to put a focus on particularly relevant and implementable measures.

Table 3: Priorisation of the measures (++ = high priority; + = medium; 0 = low priority)

	Measure	Assessment with regard to **reach**	Assessment with regard to **long-term effects**	Assessment with regard to **acceptance**	**Implementation priority**
1	**Kindling children's interest for construction, finishing and building technology occupations from a very early (kindergarten) stage**	+	+	++	+
2	**Developing "hands-on" learning material for schools**	+	+	++	+
3	**Informing about the requirements needing to be fulfilled to take up an apprenticeship in the building sector**	+	+	+	+
4	**Expanding opportunities for students to do a work placement / summer job in a building company**	+	++	++	+
5	**"A career in the building industry after dropping out of university" - a pilot project with the aim of gaining university dropouts in specific disciplines for a career in the construction, finishing and building technology sectors**	+	+	++	++
6	**Giving greater prominence to women in image campaigns (also via best practice examples**	+	+	++	+
7	**Checking the feasibility of setting up a CVET programme for training quality assurance officers in the building sector**	0	+	+	0

	Measure	Assessment with regard to **reach**	Assessment with regard to **long-term effects**	Assessment with regard to **acceptance**	**Implementation priority**
8	Recommendation to upgrade the craft sector's image campaign to promote the positive aspects and the modern and forward-looking orientation of construction, finishing and building technology occupations.	++	++	+	++
9	Highlighting career opportunities in the building sector more - leveraging the skilled craft sector's image campaign and propagating successful career stories	++	++	+	++
10	Informing potential candidates about the attractive-ness and career opportunities of occupations related to the energy-related refurbishment of buildings / more vocational guidance events	+	+	++	+
11	Information sessions for job centre staff for updating their knowledge of the relevant building occupations	++	++	++	++
12	Leveraging existing initiatives (such as "Praktisch unschlagbar") to promote the career opportunities available in the building sector	++	++	+	+
13	Providing more work placements and summer jobs	++	+	++	+
14	Introduction or further development of local or regional work placement / summer job "markets"	++	+	++	+

	Measure	Assessment with regard to **reach**	Assessment with regard to **long-term effects**	Assessment with regard to **acceptance**	**Implementation priority**
15	**Developing staff development concepts for SMEs in the construction, finishing and building technology trades**	+	++	++	++
16	**Concentrating CVET courses in the winter months, thus utilising periods of short-time working to upgrade skills**	+	0	0	0
17	**Analysing the factors motivating people to stay in the building trade**	+	++	++	++
18	**Conducting a survey in individual EU Member States on conditions encouraging young people to come to Germany and to remain there.**	+	++	+	++
19	**Including the basic principles of a system-based approach in the apprenticeship frameworks**	++	++	++	++
19.a	**Checking the feasibility of a Germany-wide inclusion of model-tested cross-trade learning situations in building sector apprenticeship programmes.**	++	++	+	++

	Measure	Assessment with regard to **reach**	Assessment with regard to **long-term effects**	Assessment with regard to **acceptance**	**Implementation priority**
20	**Including the topics "interfaces between trades" and "understanding a house/building as an integrated system" in a cross-trade CVET programme**	++	++	++	++
21	**Giving greater weight to the CVET programme training master craftsmen to become a certified energy performance consultant (HWK)**	++	++	++	++
22	**Checking the feasibility of a CVET programme for "one-stop-shop" refurbishment services**	+	+	++	+
23	**Increasing the awareness of training staff for the topics of "interfaces between trades" and "an understanding of a house/building as an integrated system": design and implementation of a CVET concept as well as the development of information material**	++	++	++	++
24	**Including the processes "maintenance" / "identification of refurbishment needs" in the apprenticeship frameworks and framework curricula**	++	++	++	++

	Measure	Assessment with regard to **reach**	Assessment with regard to **long-term effects**	Assessment with regard to **acceptance**	**Implementation priority**
25	**Studying the need to take greater account of the process "maintenance" / "identification of refurbishment needs" in CVET offerings.**	+	++	+	++
26	**Giving greater weight to the topic "customer orientation" in apprenticeship frameworks**	++	++	++	++
27	**Identifying the necessary skill sets needed by a journeyman to provide high-quality advice. If needed, development of an appropriate CVET programme**	+	++	+	++
28	**Examining existing quality assurance material (e.g. checklists). If proved to be generally useable, disseminating it for more general use, possible after adaptation.**	+	+	+	+
29	**Branding the CVET programme leading to a "certified renewable energy expert" qualification**	+	+	+	+
30	**Identifying projects involving training immigrants / upgrading their skills and analysing the results**	+	+	+	+

	Measure	Assessment with regard to **reach**	Assessment with regard to **long-term effects**	Assessment with regard to **acceptance**	**Implementation priority**
31	**Drawing up labour demand and development concepts for building companies.**	+	++	++	++
32	**Further developing the career concept as an instrument for career planning and development in skilled craft companies**	+	++	++	++
33	**Systemising, consolidating and constantly updating the support instruments for funding training**	+	+	+	+
34	**Concentrating CVET offerings in the winter months**	+	0	0	0
35	**Standardising training measures on the CVET market**	+	+	++	+
36	**Increased "branding", together with the development and distribution of promotional material making the range of CVET offerings better known**	+	+	++	+
37	**Creating a CVET database tailored to the needs of specific target groups and the market, and taking career development concepts into account**	++	++	+	++
37.a	Developing a CVET advisory concept	+	++	++	++
38	**Setting up a skills early warning system as a cooperation project between the ZDH, HPI, FBH and BIBB**	+	++	+	++

6. Defining an action plan for implementing the measures

In this section, the various roadmap elements are given a concrete shape, with actions and timetables being defined and assigned to specific stakeholders. By doing so, the activities become verifiable with regard to their implementation. At the same time, certain sub-plans are dependent on such external factors as funding availability. Any such constraints are also listed here. It is planned to involve National Skills Platform actors in the implementation of the measures.

To facilitate reading, the action plan is presented as a table.

6.1 Action plan

Table 4: Roadmap action plan

a) Measures and actions to be applied for under "Pillar II" of BUILD UP Skills

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
1. Development of staff development concepts for SMEs in the building sector, taking into account the career development concept (BLK) of the skilled craft sector and age considerations **AS WELL AS** **Analysing the factors motivating people to stay in the building trade** **AS WELL AS** **Increased "branding", together with the development and distribution of promotional material making the range of CVET offerings better known**	• Project application in the context of Pillar II • Analysing the factors motivating people to stay in the skilled craft sector • Further developing the career concept as an instrument for career planning and development in skilled craft companies • Developing staff development concepts for SMEs in the construction, finishing and building technology trades	ZDH, FBH, trade associations	Project application: April 2013 Project duration: 3 years; project begin: November 2013	Possible proposal for a follow-up project under BUS	15 31 32 17 36
2. Study of the requirements and conditions encouraging young people and skilled workers from individual EU Member States to come to Germany and to remain there	Project application in the context of Pillar II	ZDH, FBH	Project application: April 2013. Project duration: 3 years; project begin: November 2013	Possible proposal for a follow-up project under BUS	18

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
3. Creating a database tailored to the needs of specific target groups and the market, and taking career development concepts into account **AS WELL AS** **Standardising training measures on the CVET market** **AS WELL AS** **Increased "branding", together with the development and distribution of promotional material making the range of CVET offerings better known** **AS WELL AS** **Developing a CVET advisory concept**	• Project application in the context of Pillar II • Identification of target groups • Survey of skilled craft companies • Creation of a database • Entering the available CVET courses • Establishing a long-term system for updating the system (by regional and trade organisations)	FBH, ZDH	Project application: April 2013 Project duration: 3 years; project begin: November 2013	Possible proposal for a follow-up project under BUS	37 35 36 37.a
4. Setting up an early warning system for qualifications	• Project application in Pillar II • Identification and interlinking of existing early warning systems for qualifications • Developing and implementing a system for the building sector, with the principal focus on energy efficiency and renewable energy	ZDH, FBH, HPI, BIBB	Project application: April 2013 Project duration: 3 years; project begin: November 2013	Possible proposal for a follow-up project under BUS	38

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
5. Checking whether a model-tested teaching method for cross-trade learning situations can be implemented throughout Germany in the construction and finishing trades.	• Development of exemplary cross-trade teaching/learning arrangements suitable for application in the IVET structures in the construction and finishing trades throughout Germany • Assessment of the experience gained in the building trade VET centre Pädagogisches Bauzentrum) in Hennef • Exploratory talks with the Competence Network for Building and Energy (KOMZET Bau) with the aim of supporting the Germany-wide introduction of cross-trade inter-company instruction in the building sector	BIBB, HPI, Ministries	Project application: April 2013 Project duration: 3 years; project begin: November 2013	Collaboration with the state education ministries, KMK and KOMZET Bau	19.a
6. Including the topics "interfaces between trades" and "understanding a house/building as an integrated system" in a cross-trade CVET programme	• Presentation of the planned measures in the appropriate ZDH bodies • Project application in the context of Pillar II • Identification and verification of existing offerings • Development of a CVET programme and a framework curriculum • Compilation of suitable promotional material • Promotion and PR activities	ZDH FBH Relevant trade associations Chambers of Skilled Crafts	Project application: April 2013. Project duration: 3 years; project begin: November 2013	Possible proposal for a follow-up project under BUS	20

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
7. Raising the awareness of training staff for "interface problems": design of a CVET concept, conduct of a workshop, as well as the development of information material **AS WELL AS** **Examining existing materials (e.g. checklists) with a view to improving quality standards in the building sector, where necessary adapting them, and finally disseminating them**	• Project application in the context of Pillar II • Design of a CVET concept, to be discussed in a workshop and to be implemented on a regional basis • Testing the CVET concept through a pilot project (workshop) involving different trades, instructors and people from the field. Focus: "interface problems" • Compilation of information material (making use of the workshop results) for the purpose of supporting a multiplication of such workshops • Promotional and PR activities promoting the take-up of such workshops	ZDH, ZWH, FBH, Dena Relevant trade associations Instructors Further people from the field (e.g. architects, engineers)	Project application: April 2013 Project duration: 3 years; project begin: November 2013	Collaboration with the skilled craft sector, chambers of architects and engineers	23 28
8. Monitoring (project evaluation)	• Checking and monitoring the implementation status of the proposed measures • Only possible in the form of an interim assessment, as the measures have long-term effects	ZDH	Project application: April 2013 Project duration: 2013 years; project begin: November 2013	Possible proposal for a follow-up project under BUS	

b) Measures and actions with a high implementation priority, though not to be implemented under Pillar II

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
9. **"A career in the building industry after dropping out of university" - a pilot project with the aim of gaining university dropouts in specific disciplines for a career in the building sector**	• Checking the feasibility of a pilot project • Analysing and assessing existing training offerings • Clarifying mutual recognition issues	ZDH, skilled crafts chambers, trade associations, Federal Employment Agency, possibly other craft institutions	Possible DKI project application in June 2013, with project beginning in 2014	Collaboration with the Federal Employment Agency, universities	5
10. **Further development of the craft sector's image campaign to promote the positive aspects and the modern and forward-looking orientation of occupations in the building sector.** **AS WELL AS** **Highlighting career opportunities more – leveraging the skilled craft sector's image campaign and propagating successful career stories** **AS WELL AS** **Giving greater prominence to women in image campaigns (also via best practice examples**	Presentation in the campaign's steering committee and in the decision-making bodies	ZDH , skilled crafts chambers, trade associations, companies	Immediately	Taking this aspect into account in activities already taking place	8 9 6

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
11. Information sessions for job centre staff for updating their knowledge of the relevant building occupations <u>AS WELL AS</u> Informing about the requirements needing to be fulfilled to take up an apprenticeship in the building sector	• Checking the feasibility of a pilot project • Developing a concept for information sessions • Compilation and development of information material for vocational guidance	Possibly ZWH/DHI, skilled crafts chambers (inter-company VET centres); relevant trade associations; Federal Employment Agency		Collaboration with the Federal Employment Agency	11 3
12. Including the basic principles of a system-based approach in the apprenticeship frameworks	• Occupation-specific inclusion of this topic (a house as an integrated system) in the relevant apprenticeship frameworks and framework curricula	Those involved in the revision of the relevant apprenticeship frameworks	**Immediately**	Taking this aspect into account in the context of activities already taking place; no separate project; collaboration with the KMK	19

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
13. Giving greater weight to the CVET programme training master craftsmen to become a certified energy performance consultant. • Checking the feasibility of a standard Germany-wide regulation. if feasible, then implementation • Marketing **AS WELL AS** **Increased "branding", together with the development and distribution of promotional material making the range of CVET offerings better known**	• Discussions on the issue of a Germany-wide regulation in the appropriate ZDH bodies (PG CVET, UDH discussion group) • Initialisation and realisation of the revision procedure • Compilation of promotional material • Promotional and PR activities	ZDH BVB Those involved in the revision procedure	Immediately	Taking this aspect into account in activities already taking place; no separate project	21 35
14. Checking the feasibility of a CVET programme for "one-stop-shop" refurbishment services	• Discussion of this issue and further steps in the appropriate ZDH bodies (e.g. PG CVET) • Checking funding possibilities • Possible inclusion in Pillar II	FBH, ZDH	*Immediately*	*Taking this aspect into account in activities already taking place*	*22*

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
15. Studying the need to take greater account of the process "maintenance" / "identification of refurbishment needs" in CVET offerings. AS WELL AS Identifying the necessary skill sets needed by a journeyman to provide high-quality advice. If needed, development of an appropriate CVET programme	• Discussion of this issue and further steps in the appropriate ZDH bodies (e.g. PG CVET) • Checking state support possibilities	FBH, ZDH	**Immediately**	**Taking this aspect into account in activities already taking place**	25 27
16. Giving greater weight to the topic "customer orientation" in apprenticeship frameworks AS WELL AS Including the processes "maintenance"/"identification of refurbishment needs" in the apprenticeship frameworks and framework curricula	Occupation-specific inclusion of this topic in the forthcoming revision procedure	Those involved in the respective revision procedures	Immediately	Taking this aspect into account in activities already taking place; no separate project, collaboration with the KMK	26 24

c) Measures and actions without any high implementation priority

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
17. Kindling children's interest for construction, finishing and building technology occupations from a very early (kindergarten) stage	• **Initiate a survey of current activities, thereby creating greater transparency** • **Proposal for inclusion of this aspect in a framework support programme of the next ESF programming period**	**Skilled craft trade associations, skilled crafts chambers ZDH**	**Possible from 2013 onwards**		1
18. Developing "hands-on" learning material for schools	• Initiate an exchange of experience between associations • Proposal for inclusion of this aspect in a framework support programme of the next ESF programming period	Skilled craft / building sector trade associations, ministries, possibly ZWH, ZDH	Possible from 2013 onwards	Collaboration with the KMK	2
19. Expanding opportunities for students to do a work placement / summer job in a building company **AS WELL AS** **Providing more work placements and summer jobs** **AS WELL AS** **Introduction or further development of local or regional work placement / summer job "markets"**	Having skilled craft trade associations promote this aspect in companies • Trade journals / media • Mailings • • Excitation to implement apprenticeship and work placement "markets" (such as an apprenticeship radar) • Greater marketing and publicity within the skilled craft organisations	Companies, skilled crafts chambers, skilled craft trade associations ZDH, VET centres belonging to skilled crafts chambers, regional employment agencies	2013 / 2014		4 13 14

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
20. Checking the feasibility of setting up a CVET programme for training quality assurance officers in the building sector	• Presentation and discussion of the proposal in the ZDH CVET planning group, together with the realisation of possible further steps • Checking the feasibility of gaining access to the working groups developing the Federal Government's demographics strategy	ZDH , skilled crafts chambers, trade associations	2013		7
21. Informing potential candidates about the attractiveness and career opportunities of occupations related to the energy-related refurbishment of buildings / more vocational guidance events	• Conduct a survey of activities already taking place, thereby creating greater transparency • Develop information material for companies	Trade associations, skilled crafts chambers, companies. Federal Employment Agency	2013 / 2014		10
22. Leveraging existing initiatives (such as "Praktisch unschlagbar") to promote the career opportunities available in the building sector.	Checking the feasibility of a separate strand for building occupations	BMWi / BMBF	2013		12
23. Branding the CVET programme leading to a "certified renewable energy expert" qualification **AS WELL AS** **Increased "branding", together with the development and distribution of promotional material making the range of CVET offerings better known)**	Compilation of a flyer promoting the new CVET programme	ZDH , skilled crafts chambers, trade associations ZDB: "European building energy worker"	2013		29 36

Roadmap item	Next steps	Responsible Partner	Timeframe	Possibly existing preconditions or resource requirements	No. of measures in the Skills Roadmap
24. Identifying projects involving training immigrants / upgrading their skills and analysing the results	• Determining initial experience with the Recognition of Professional Qualifications Act (Berufsanerkennungsgesetz) (in conjunction with the key chambers) • Exchange of experience with institutions that have already found jobs for immigrants and helped in their integration	ZDH , skilled crafts chambers	Not before 2014	Funding Inclusion of organisations catering for immigrants	30
25. Systemising, consolidating and constantly updating the support instruments for funding further training	Proposal for inclusion of this aspect in a framework support programme of the next ESF programming period	Ministries, skilled craft chambers, ZDH	2013/ 2014	Linking into the database (Pillar II)	33
26. Concentrating CVET offerings in the winter months **AS WELL AS** **Concentrating CVET offerings in the building sector in the winter months, thereby making the most of seasonal short-time working**	Provide written information to the skilled craft trade associations and in particular to the VET centres	ZDH, VET centres, trade associations	2013, in the context of a circular communicating the results		34 16

6.2 Monitoring

Once a time schedule has been defined, progress monitoring is possible. We suggest including an item for assessing the implemented measures in the context of a Pillar II work package.

7. Conclusions relating to further implementation work

Last but not least, the success factors allowing the measures to be as effective as possible from a quantitative perspective and in the required long term are summarised:

- **The involvement of the established actors in the skilled craft sector in compiling and implementing actions for achieving the 20-20-20 targets is of crucial importance!** One of the pillars of the German economy is the system of consensus and participation and involving the interweaving of organisations with specific expertise and experience. This strength, derived from the interaction of government ministries (BMWi, BMBF, state ministries, etc.), ZDH, trade associations, trade unions, chambers with their own VET centres and flanked by the research findings of the institutes brought together under the umbrella of the German Skilled Craft Institute e.V. (consortium members: FBH, HPI) and actively participating in various bodies, as well as those of BIBB and dena, offers the requisite potential for providing broad-based support, underpinning the effectiveness of the measures initiated in the skilled craft sector. This applies similarly to the industrial sector in the shape of the Confederation of German Industry (BDI), as the counterpart to the ZDH. Regional and local networks, as for instance set up by the German energy agency under the control of the Federal association (eaD), can also help in continually improving the skill levels of building workers.
- Looking specifically at the situation in Germany, the future focus is not so much on concrete skill measures, as Germany already has a well-functioning apprenticeship system, as well as a comprehensive offering of CVET courses in the field of energy efficiency and renewable energy. For this reason, BUILD UP Skills Pillar II actions should be designed in such a way that they strategically support and strengthen the existing systems, as well as addressing actors with a multiplier effect within the system. The establishment of career development concepts for workers in SMEs in the building sector, the creation of an early warning system for skills, a CVET database targeting specific groups and reflecting market requirements, and regional "train the trainer" symposiums are some of the instruments foreseen. Nevertheless they need to be flanked by measures aimed at solving the biggest problems associated with energy-related building refurbishment and construction in Germany: inter-trade interfaces and the lack of understanding for a house/building as an integrated system.
- Turning to the implementation of this strategic approach, the established and well-oiled "national skills platform" is to be continued, with it being involved in the further development of the German VET system for the building sector.

8. Letter of Endorsement

All participating organisations are given the opportunity of signing a "letter of endorsement" (LOE) declaring their approval of the agreed steps and their intention to conduct further support measures over and above those jointly agreed.

There follows a sample letter of endorsement Attached to this report are all LOEs of the partners received up to now.

Declaration

We, --- name of organization --- herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to be involved in the following measures / activities:

- _____
- _____
- _____

Berlin, XX. XX. 2013

_____

Signature

9. Authors and others involved

All representatives of the institutions making up the Steering Board (including the consortium representatives) and contributing to the compilation of the Roadmap are listed here. We would like to extend our thanks to all involved for their commitment and their active participation.

Name, forename	**Organisation (function)**
Angelus, Dr. Siegfried	Bundesministerium für Wirtschaft und Technologie / Federal Ministry of Economics and Technology, member of the Steering Board
Bensmann, Katharina	dena, member of the Steering Board
Bruch, Christian	Gesamtverband Dämmstoffindustrie / Confederation of Insulation Manufacturers, member of the Steering Board
Dechert, Dipl.-Ing. Bernd	Zentralverband der Deutschen Elektro- und Informationstechnischen Handwerke / Confederation of German Electrical and IT Crafts, member of the Steering Board
Discher, Henning	dena, member of the Steering Board
Dittke, Helmut	Deutscher Gewerkschaftsbund / Confederation of German Trade Unions, member of the Steering Board
Göbel, Friedrich-Wilhelm	Zentralverband Sanitär Heizung Klima / HVAC Confederation, member of the Steering Board
Grunwald, Dr. Jorg-Günther	Bundesinstitut für Berufsbildung / Federal Institute for Vocational Education and Training, member of the Steering Board
Heinecke, Dipl.-Ing. Christian	Heinz-Piest-Institut für Handwerkstechnik / Heinz Piest Institute for craft technology, University of Hannover, member of the Steering Board
Hennies, Robert	Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit / Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, member of the Steering Board
Hils, Dieter	Bundesverband Metall / Metalworking Confederation, member of the Steering Board
Kramer, Bernd	Verband Fenster und Fassade / Federation of Window and Facade Manufacturers, member of the Steering Board
Kuhlenkamp, Dipl.-Ing. (FH) Dieter	Zentralverband des Deutschen Handwerks / German Confederation of Skilled Crafts, member of the Steering Board
Landrath, Dr. Klaus-Dieter	Handwerkskammer Münster / Munster Skilled Crafts Chamber, member of the Steering Board
Majewski, Elisa	Zentralverband des Deutschen Handwerks / German Confederation of Skilled Crafts, co-author and workshop moderator
Mathes, Martin	IG Bauen-Agrar-Umwelt (IG BAU) (Germany's main building union), member of the Steering Board
Müller, Susanne	Bundesvereinigung der Deutschen Arbeitgeberverbände / Confederation of German Employer Associations, member of the Steering Board
Pfündner, Dipl.-Phil. Karl	BIW Das Bildungswerk BAU Hessen-Thüringen / Buidling sector

Heinz	VET centre for Hesse-Thuringia, member of the Steering Board
Rasch, Katrin	Forschungsinstitut für Berufsbildung im Handwerk an der Universität zu Köln / Research Institute for Vocational Training in the Skilled Craft Sector, co-author and workshop moderator
Rathert, MR Peter	Bundesministerium für Verkehr, Bau und Stadtentwicklung / Federal Ministry for Transport, Building and Urban Development, member of the Steering Board
Rehbold, Rolf Richard	Forschungsinstitut für Berufsbildung im Handwerk an der Universität zu Köln / Research Institute for Vocational Training in the Skilled Craft Sector, co-author
Reinecke, Jochen	Deutscher Industrie- und Handelskammertag e.V. / German Confederation of Industry and Commerce Chambers, member of the Steering Board
Rolfsmeier, Thorsten	Bundesagentur für Arbeit / Federal Employment Agency, member of the Steering Board
Schlesinger, Dipl.-Ing. Barbara Chr.	Bundesarchitektenkammer, Federal Chamber of Architects, member of the Steering Board
Schulte, Karl-Sebastian	Zentralverband des Deutschen Handwerks / German Confederation of Skilled Crafts, member of the Steering Board
Schütte, Anne	Hildesheim-Southern Lower Saxony Skilled Crafts Chamber, member of the Steering Board
Stadler, Max	Skilled Crafts Chamber for Munich and Upper Bavaria
Touchè, Dr. Burkhard	KfW-Bankengruppe (KfW) (the state bank providing refurbishment grants and loans), member of the Steering Board
Weber, Herbert	Industriegewerkschaft Metall (the metalworkers' union), member of the Steering Board
Weiss, Dr. Peter	Zentralverband des Deutschen Handwerks / German Confederation of Skilled Crafts, coordinator responsible for compiling the roadmap, co-author and workshop moderator
Welzbacher, Dr. Christian Robert	Heinz-Piest-Institut für Handwerkstechnik / Heinz Piest Institute for craft technology, member of the Steering Board
Wiegand, Ulrich	Berlin Skilled Crafts Chamber, member of the Steering Board
Wierschem, Artur	Zentralverband des Deutschen Dachdeckerhandwerks / German Roofers Confederation, member of the Steering Board

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11. Glossar

Apprenticeship framework	A Germany-wide standard for an apprenticeship in a certain occupation under Germany's apprenticeship system ("dual system"). Such frameworks provide details on the workplace (“on-the-job”) content of the apprenticeship and its different phases.
CVET career development	The objective of this aspect of CVET is to maintain, update and possibly extend occupational skills acquired during an apprenticeship and to help skilled workers climb the career ladder.
CVET skill development	Skill development is a generic term applying not just to training courses taking place within a statutory framework (cf. CVET career development), but also to courses outside this framework offered by a range of CVET providers and manufacturers.
Vocational Training Act	The Act provides a formal framework for VET in Germany
Blue collar workers	Employees of (skilled craft) companies working - in the context of this report - in the building trade.
Apprenticeship system	Initial vocational education and training (IVET) taking place at school/college and on the job in a company. In Germany also referred to as the "dual system".
Skilled craft occupations	Occupations regulated under §25 ff. of the German Skilled Crafts Code (*Handwerksordnung*) and assigned to the skilled craft sector with regard to IVET (cf. ZDH 2012a)).
Skilled Crafts Chamber (Handwerkskammer or HWK)	The skilled crafts chambers are public sector organisations with the statutory task of representing all skilled craft companies within a certain region, for whom membership is mandatory. There are a total of 53 such chambers in Germany. They promote skilled crafts in general and balance interests between individual skilled craft trades and occupations. At state/*Bundesland* level, skilled crafts chambers are represented in Regional Skilled Crafts Councils (*Handwerkskammertage*) and State Skilled Craft Associations (*Landeshandwerksvertretungen*), while at Federal level, they all come under the umbrella of the German Skilled Crafts Council (*Deutscher Handwerkskammertag*) (cf. ZDH 2013b).
Skilled Crafts Code (Handwerksordnung or HwO)	The Code provides an official framework for the skilled crafts sector. It can be seen as the sector's "Constitution". Under it, the skilled crafts are free to organise themselves as they see fit. The Code regulates for instance the authorisation to set up one's own skilled craft company, IVET and CVET in the skilled crafts sector and how the sector is organised. (ZDH 2012a)

Industrial occupations

Occupations regulated by §23.1 Vocational Training Act in combination with §25.2.1 and assigned to the industry and commerce IVET sector (cf. Vocational Training Act).

Competence centre

Competence centres are demand-driven VET providers. They drive innovation through creating and implementing training and consultancy services. The conversion of VET centres into competence centres is being promoted by the BMWi (BAFA 2010).

Inter-company training centres / inter-company apprentice instruction

Inter-company apprentice instruction is an extension of on-the-job training (within the apprenticeship system) and ensures the acquisition of qualifications going beyond those offered by/found in individual companies. By compensating for any IVET deficits in individual companies, it plays a decisive role in ensuring the overall quality of an apprenticeship. (ZDH 2013d).

German Confederation of Skilled Crafts

The German Confederation of Skilled Crafts (ZDH) represents the interests of the skilled crafts sector vis-à-vis the German Parliament (*Bundestag*), the Federal Government and other institutions, the European Union and other international organisations. 53 skilled crafts chambers, 36 trade associations as well as business and research institutions belong to the ZDH (ZDH 2013a).

Early Warning System for Skills

Tools allowing skill needs to be recognised at an early stage. They are used to identify technological, economic, ecological, socio-cultural and statutory changes/trends and their consequences on skill profiles, with a view to covering them in the IVET and CVET system.

Career development concept

A framework for analysing and systemising career development paths for skilled craft occupations via a structured presentation of CVET opportunities (from beginners to experts) in a certain skilled craft occupation.

Image campaign for the skilled craft sector

The image campaign for the skilled craft sector dates back to 2010. Its aim is to boost the underestimated - both in business and society - importance of the sector through the implementation of the following objectives:

1. Firmly anchoring the importance of the skilled craft sector in society
2. Drawing attention to the modern dimension, the many different aspects and the attractiveness of the sector
3. Awakening and visualising pride in working as a skilled craftsman

(cf. ZDH 2013c)

12. Annex

Institution:

Confederation of German Employers' Associations
Breite Straße 29
10178 Berlin
Germany

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, the Confederation of German Employers' Associations, consider the proposed measures suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

Berlin, 01. 03. 2013

Dr. Barbara Dorn

Frauke Klein

BDA | DIE ARBEITGEBER
Bundesvereinigung der
Deutschen Arbeitgeberverbände
Breite Straße 29 | 10178 Berlin

BFW BAU SACHSEN

Zentralverband des Deutschen Handwerks (ZDH)
Abteilung Wirtschafts- und Umweltpolitik
Mohrenstraße 20/21
10117 Berlin

Erklärung

(Letter of Endorsement)

Wir, **das BFW Bau Sachsen e. V.**, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Leipzig, 27.02.2013

BFW Bau Sachsen e.V.
Überbetriebliches Ausbildungszentrum Glauchau
Lungwitzer Straße 52 · 08371 Glauchau
Tel.: 03763 5005-0 · Fax: 03763 5005-21

Unterschrift und Stempel der Institution

27-02-'13 10:16 VON- BMVBS B12 B14 +49-30-183001973 T-280 P002/002 F-738

Institution: Abteilungsleiter Bauwesen,
Bauwirtschaft und Bundesbauten
Bundesministerium für Verkehr,
Bau und Stadtentwicklung
Krausenstraße 17 - 20
10117 Berlin

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, --- *name of organization* --- herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

27. 02.
City, XX. XX. 2013

J. Hoffmann

Signature / stamp of the institution

27-02-'13 10:16 VON- BMVBS B12 B14 +49-30-183001973 T-280 P001/002 F-738

MDir Günther Hoffmann
Abteilungsleiter Bauwesen,
Bauwirtschaft und Bundesbauten
Bundesministerium für Verkehr,
Institution: Bau und Stadtentwicklung
Krausenstraße 17 - 20
10117 Berlin

BUILD UP Skills - Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien

Erklärung
(Letter of Endorsement)

Wir, --- *Name der Organisation* ---, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

27. 02.
Ort, XX. XX. 2013

Unterschrift und Stempel der Institution

Institution:

Bundesagentur für Arbeit
Regensburger Straße 104
90478 Nürnberg

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, --- *Bundesagentur für Arbeit* --- herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- _____
- _____
- _____

Nürnberg, 14.03. 2013

Signature / stamp of the institution

Institution:
Federal Chamber of German Architects

Askanischer Platz 4

D - 10963 Berlin

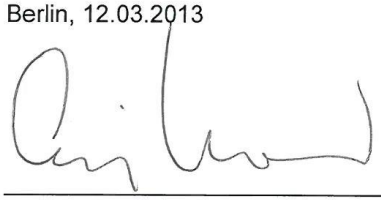
BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, --- Federal Chamber of German Architects --- herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

Berlin, 12.03.2013



BUNDESARCHITEKTENKAMMER
www.bak.de
Askanischer Platz 4
10963 Berlin
Postfach 61 03 28
10925 Berlin
Fon 030.26 39 44 - 0
Fax 030.26 39 44-90

Sigurd Trommer
President

Federal Chamber of German Architects

Institution:

Bundesverband Flachglas e. V.
Mülheimer Str. 1
53840 Troisdorf

BUILD UP Skills - Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien

Erklärung
(Letter of Endorsement)

Wir, der Bundesverband Flachglas e. V. (BF), identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Darüber hinaus wollen wir uns im Hinblick auf die folgenden Aktivitäten engagieren:

- Angebot von Fachseminaren zu Flachglasprodukten und –anwendungen in elektronischer Form (Webinare)

Troisdorf, 12.03.2013

BF Bundesverband Flachglas e.V.
Mülheimer Straße 1 • D-53840 Troisdorf
Tel.: +49 (0) 22 41 / 87 27-0 • Fax: 87 27-10
e-Mail: info@bundesverband-flachglas.de
Internet: www.bundesverband-flachglas.de

Unterschrift und Stempel der Institution

Institution:

BUNDESVERBAND METALL
Vereinigung Deutscher Metallhandwerke
Ruhrallee 12
45138 Essen

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, --- *name of organization* --- herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- _____
- _____
- _____

City, XX. XX. 2013

Essen, 12.03.13

BUNDESVERBAND METALL
Vereinigung Deutscher Metallhandwerke
Ruhrallee 12
45138 Essen

Signature / stamp of the institution

Institution:

Forschungsinstitut
für Berufsbildung im Handwerk (FBH)
an der Universität zu Köln
Venloer Str. 151-153 / Patrizia Tower Köln
50672 Köln

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, the Research Institute for Vocational Education and Training in the Crafts Sector at the University of Cologne, herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- Consideration of status quo-analysis results within the process of renewing frameworks for the master craftsmen programmes.

Cologne, 2013-02-28

Forschungsinstitut
für Berufsbildung im Handwerk (FBH)
an der Universität zu Köln
Venloer Str. 151-153 / Patrizia Tower Köln
50672 Köln

(Rolf R. Rehbold, Deputy Director)

Signature / stamp of the institution

Institution:

Gütegemeinschaft Fenster und Haustüren e.V.

Walter Kolb-Straße 1-7

60594 Frankfurt / Germany

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, Gütegemeinschaft Fenster und Haustüren e.V. (quality association for windows and front doors), herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- professional education and post-graduate training by installation seminares with practical relevance
- qualification as quality controller
- qualification as installation responsible

Frankfurt (Germany), February 26th, 2013

signature / stamp of the institution

Institution:

Timber Construction Germany - Academy

Kronenstraße 55 – 58

10117 Berlin

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, Timber Construction Germany – Academy, herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- In further education and training in the field of complete modernisation and revewable energie

Berlin, 06. März 2013

Holzbau Deutschland - Akademie e.V.
Kronenstraße 55 - 58
10117 Berlin

Signature / stamp of the institution

Institution:
Handwerkskammer Berlin
Blücherstr. 58
D-10961 Berlin

BUILD UP Skills - Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien

Erklärung
(Letter of Endorsement)

Wir, die **Handwerkskammer Berlin**, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Darüber hinaus wollen wir uns im Hinblick auf die folgenden Aktivitäten engagieren:

- Mitarbeit bei der Beantragung und Durchführung des Projektvorhabens im Rahmen von Pillar II, insbesondere Mitwirkung bei den Punkten 1 - 4, 6, 7 sowie 9 - 16 des Aktionsplans.
- Mitwirkung bei den Punkten 19, 21 des Aktionsplans
- Mitarbeit bei der Entwicklung einer Fortbildung zur „Geprüften Fachkraft für Erneuerbare Energien" (siehe Punkt 23 des Aktionsplans).

Berlin, 4. März 2013

Ulrich Wiegand
Geschäftsführer

Institution:

Akademie des Handwerks
Handwerkskammer Cottbus
Altmarkt 17
03048 Cottbus

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, --- *Akademie des Handwerks der Handwerkskammer Cottbus* --- herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- _____
- _____
- _____

Cottbus, 12. 03. 2013

Handwerkskammer Cottbus
Altmarkt 17 • 03048 Cottbus
Telefon 0355 7935 - 0
Telefax 0355/79 35 - 286

Oliver Huschga

Leiter Akademie des Handwerks

Signature / stamp of the institution

Handwerkskammer
für Unterfranken

Rennweger Ring 3
97070 Würzburg
Germany

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, Chamber of handicrafts of lower frankonia, herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

Würzburg, 5. March 2018

Chamber of handicrafts of lower frankonia

Hugo Neugebauer
president

Dipl.-Kfm. Rolf Lauer
head manager

Institution:

Handwerkskammer Hildesheim-Südniedersachsen

Braunschweiger Straße 53

31134 Hildesheim

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, Handwerkskammer Hildesheim-Südniedersachsen, herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- Support of regional climate protection plans: qualification for energetic improvement of frame houses
- Participation in the project „ecoprofit"; gained insights will broaden schooling

Hildesheim, 02/26/ 2013

Handwerkskammer
Hildesheim-Südniedersachsen

Ina-Maria Heidmann
Chief Executive

Handwerkskammer Koblenz

Handwerkskammer Koblenz · 56063 Koblenz

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, the Koblenz Chamber of Handwerk (skilled crafts and SME), herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- Interdisciplinary vocational and technical education of the building and construction trades with other related professions
- Flexible vocational training and education opportunities for talented young people in the building and construction trades (additional qualifications, permeability of vocational and academic education)

Koblenz, February 22nd, 2013

Alexander Baden
Chief Executive Officer

Handwerkskammer Koblenz
Friedrich-Ebert-Ring 33, 56068 Koblenz
Telefon 0261/398-0, hwk-koblenz.de

Handwerkskammer Koblenz
Friedrich-Ebert-Ring 33
56068 Koblenz
www.hwk-koblenz.de

Telefon 0261/398-0
Telefax 0261/398-898
hwk@hwk-koblenz.de

Sparkasse Koblenz
IBAN-Nr. DE78 5705 0120 0030 0043 09
SWIFT-BIC: MALADE51KOB

Volksbank Koblenz Mittelrhein eG
IBAN-Nr. DE10 5709 0000 1559 9500 00
SWIFT-BIC: GENODE51KO1

Handwerkskammer Lübeck

Handwerkskammer Lübeck
Breite Straße 10/12
23552 Lübeck

BUILD UP Skills - Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien

Erklärung
(Letter of Endorsement)

Wir, die Handwerkskammer Lübeck, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Lübeck, 27. Februar 2013

Handwerkskammer Lübeck

Andreas Katschke
Hauptgeschäftsführer

Handwerkskammer
für München und Oberbayern

Handwerkskammer für München und Oberbayern
Abt. GB 4 Postfach 34 01 38 80098 München

Zentralverband des Deutschen Handwerks
Abteilung Wirtschafts-, Energie- und Umweltpolitik
Mohrenstraße 20/21
10117 Berlin

BUILD UP Skills – „Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien"
Letter of endorsement

1. März 2013

Ihr Zeichen:
Unser Zeichen: DV-cju

Ansprechpartner
Dieter Vierbeck
Telefon 089 5119-485
Telefax 089 5119-381
dieter.vierbeck@hwk-muenchen.de

Handwerkskammer
für München und Oberbayern
Max-Josef-Straße 4
80333 München

info@hwk-muenchen.de
www.hwk-muenchen.de

Präsident:
Heinrich Traublinger, MdL a. D.

Hauptgeschäftsführer:
Dr. Lothar Semper

Münchner Bank
BLZ 701 900 00
Konto 0 500 102 270
IBAN DE35 7019 0000 0 500 102 270
BIC (Swift-Code) GENODEF1M01

Sehr geehrte Damen und Herren,

wir, als Handwerkskammer für München und Oberbayern, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Darüber hinaus wollen wir uns im Hinblick auf die folgenden Aktivitäten engagieren:

- Qualifikationsführerkennungssystem einrichten
- Verankerung der „Schnittstellen zwischen den Gewerken" (Gebäude als System einer Querschnittsfortbildung)
- Projekte zur Entwicklung von Fortbildungsangeboten für den Bau-Bereich

Mit freundlichen Grüßen

Dieter Vierbeck
Geschäftsführer

+++ Besuchen Sie uns auf der IHM vom 6. bis 12. März 2013 in Halle B3 Stand 703 und in den Sonderschauen in Halle B1 +++

DAS HANDWERK

Institution:

Handwerkskammer für Schwaben
Siebentischstraße 52-58
86161 Augsburg

BUILD UP Skills - Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien

Erklärung
(Letter of Endorsement)

Wir, Handwerkskammer für Schwaben, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Darüber hinaus wollen wir uns im Hinblick auf die folgenden Aktivitäten engagieren:

- _____
- _____
- _____

Augsburg, 26.02.2013

Handwerkskammer für Schwaben
Siebentischstr. 52 - 58
86161 Augsburg

Unterschrift und Stempel der Institution

Handwerkskammer
Trier

Handwerkskammer Trier • Postfach 43 70 • 54233 Trier

Institution:

Handwerkskammer Trier
Loebstraße 18
54292 Trier

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, --- *die Handwerkskammer Trier* --- herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- _____
- _____
- _____

Trier, 12.03. 2013

Signature / stamp of the institution

DAS HANDWERK
DIE WIRTSCHAFTSMACHT VON NEBENAN

Institution:

Industriegewerkschaft Bauen-Agrar-Umwelt
Bundesvorstand
Olof-Palme-str. 19
60439 Frankfurt am Main

BUILD UP Skills - Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien

Erklärung
(Letter of Endorsement)

Wir, die Industriegewerkschaft Bauen-Agrar-Umwelt, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Frankfurt am Main, 27. Februar 2013

Dietmar Schäfers
Stellvertretender Bundesvorsitzender

Institution:

German Association of Consulting Engineers
(Verband Beratender Ingenieure – VBI)

Budapester Straße 31

10787 Berlin
Germany

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, the German Association of Consulting Engineers herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- Advanced training across the trades/professions: "links between trades/professions" and "the building as a system"
- Information for employment services on trades/professions in the construction sector
- Implementing the the training as „Certified Expert for Renewable Energies' as a brand
- Fostering mobility and integration of foreign workers/experts

Berlin, 11.03.2013

VERBAND BERATENDER INGENIEURE
BUDAPESTER STR. 31
10787 BERLIN
TEL. 0 30/ 25 62 0, FAX 0 30/ 25 62 100
WWW.VBI.DE E-MAIL VBI@VBI.DE

Signature / stamp of the institution

Institution:

Verband Fenster + Fassade
Walter-Kolb-Str. 1-7
60594 Frankfurt am Main

BUILD UP Skills - Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien

Erklärung
(Letter of Endorsement)

Wir, der Verband Fenster + Fassade, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Darüber hinaus wollen wir uns im Hinblick auf die folgenden Aktivitäten engagieren:

- Weiterbildung über Fachtagungen zu Verkauf/Vertrieb/Marketing, Gebäudeautomation, VOB und Recht, Normung/Technik
- _____
- _____

Frankfurt, 26.02.2013

VFF
Verband Fenster + Fassade
Walter-Kolb-Straße 1-7
60594 Frankfurt am Main
Telefon: +49 69 95505-0
Fax: +49 69 95505-411

Unterschrift und Stempel der Institution

Institution:

Zentralverband des Deutschen Baugewerbes

Kronenstraße 55 - 58

10117 Berlin

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, Zentralverband des Deutschen Baugewerbes, herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- Concept of occupational advancement and human recources development
- Learning across the trader in ...with "haus as system"
- In further education and training in the field of complete modernisation and revewable energie

Berlin, 04. März 2013

Signature / stamp of the institution

ZENTRALVERBAND DES DEUTSCHEN HANDWERKS

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, the German Confederation of Skilled Crafts, herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- Implementation of numerous measures from the national qualification roadmap

Berlin, March, 15th 2013

Holger Schwannecke, Secretary General

Stamp of institution

Mohrenstraße 20/21 · 10117 Berlin · Postfach 11 04 72 · 10834 Berlin
Telefon: (0 30) 2 06 19-101 · Telefax: (0 30) 2 06 19-104 · E-Mail: info@zdh.de · Internet: www.zdh.de

Institution:

Zentralverband der Deutschen
Elektro- und Informationstechnischen Handwerke
Lilienthalallee 4
60487 Frankfurt

BUILD UP Skills - Initiative zur Ausbildung und Qualifizierung von Arbeitskräften im Bausektor in den Bereichen Energieeffizienz und Erneuerbare Energien

Erklärung
(Letter of Endorsement)

Wir, — *Zentralverband der Deutschen Elektro- und Informationstechnischen Handwerke –ZVEH* - ---, identifizieren uns mit den vorgeschlagenen Maßnahmen und halten diese für geeignet, zur Steigerung der Qualifikation der am Bau Beschäftigten und zur Sicherung einer ausreichenden Anzahl von Fachkräften im Hinblick auf die Erreichung der energie- und klimapolitischen Ziele im Gebäudebereich beizutragen.

Wir werden im Rahmen unserer Möglichkeiten an der Umsetzung der im Aktionsplan vorgeschlagenen Maßnahmen mitwirken.

Darüber hinaus wollen wir uns im Hinblick auf die folgenden Aktivitäten engagieren:

- _____
- _____
- _____

Frankfurt, 25. Februar 2013

Walter Tschischka
Präsident

Ingolf Jakobi
Hauptgeschäftsführer

ZENTRALVERBAND DER DEUTSCHEN
ELEKTRO- UND INFORMATIONSTECHNISCHEN
HANDWERKE
Lilienthalallee 4 - 60487 Frankfurt am Main
Postfach 9003 70 - 60443 Frankfurt am Main
Telefon 069 / 24 77 47 - 0

Institution:

Central Association of
Plumbing Heating and Air Conditioning
Rathausallee 6
53757 Sankt Augustin
Germany

BUILD UP Skills – The European Sustainable Building Workforce Initiative

Letter of Endorsement

We, the German Central Association of Plumbing Heating and Air Conditioning, herewith declare our identification with the proposed measures. We consider them suitable for enhancing the skills of building workers and ensuring that sufficient numbers of skilled workers are available to achieve the energy and climate policy targets in the building sector.

We will contribute to the best of our ability to implementing the measures proposed in the Action Plan.

In addition, we would like to become involved in the following measures / activities:

- Information for the plumbing and heating companies on renewable energies
- Training for the plumbing and heating companies perform
- Energy effiency for buildings perform

Sankt Augustin, 2013.05.03

Elmar Esser, General Manager

BUILD UP Skills

The EU Sustainable Building Workforce Initiative in the field of energy efficiency and renewable energy

BUILD UP Skills is a strategic initiative under the Intelligent Energy Europe (IEE) programme to boost continuing or further education and training of craftsmen and other on-site construction workers and systems installers in the building sector. The final aim is to increase the number of qualified workers across Europe to deliver renovations offering a high energy performance as well as new, nearly zero-energy buildings. The initiative addresses skills in relation to energy efficiency and renewable energy in all types of buildings.

BUILD UP Skills has two phases:

I. First, the objective is to set up national qualification platforms and roadmaps to successfully train the building workforce in order to meet the targets for 2020 and beyond.

II. Based on these roadmaps, the second step is to facilitate the introduction of new and/or the upgrading of existing qualification and training schemes.

Throughout the whole duration of the initiative, regular exchange activities are organised at EU level to underline the European dimension of this important initiative and to foster the learning among countries.

The BUILD UP Skills Initiative contributes to the objectives of two flagship initiatives of the Commission's 'Europe 2020' strategy — 'Resource-efficient Europe' and 'An Agenda for new skills and jobs'. It is part of the Commission's Energy Efficiency Action Plan 2011. It will also enhance interactions with the existing structures and funding instruments like the European Social Fund (ESF) and the Lifelong Learning Programme and will be based on the European Qualification Framework (EQF) and its learning outcome approach.