

### Appendix 3. List of specific measures in the vocational education and training system

*The project "Roadmap for Trainings to Develop Skills and Knowledge on Intelligent Energy Solutions in Buildings for Bulgaria until 2020" (BUILD UP Skills Bulgaria) is conducted by a consortium consisting of EnEffect (coordinator), National Agency for Vocational Education and Training and Bulgarian Construction Chamber.*

#### Specific measures in the vocational education and training system

No	Priority title	Description
1.	Measures for upgrading of the professional qualification	Shortage of specific knowledge and skills in the subject fields "Civil engineering and architecture", "Insulations in construction", "Door and window frames and glazing", related to the implementation of intelligent energy efficient solutions in the buildings
1.1.	Scope and contents of and outcomes from learning of the material under the proposed plans/programmes	<p>I. For the subject field "Civil engineering and architecture" under the currently enforced curricula it is possible to supplement the training programmes in the below listed subjects with new sections dealing with energy efficiency, specific themes and number of classes as follows: "Economics", "Building construction", "Building materials", "Building technology", "Architectural design", "Water supply and sewerage";</p> <p>II. For the subject field "Insulations in construction" under the currently enforced curricula it is possible to supplement the training programmes in the below listed subjects with new sections dealing with energy efficiency, specific themes and number of classes as follows: "Economics", "Building construction", "Building materials", "Building technology", "Architectural design", "Water supply and sewerage", "Technology of the subject field", "Building in-house systems", "Study practice in building technology", "Study practice in technology of the subject field";</p> <p>III. For the subject field "Door and window frames and glazing" under the currently enforced curricula it is possible to supplement the training programmes in the below listed subjects with new sections dealing with energy efficiency, specific themes and number of classes as follows: "Economics", "Building construction", "Building materials", "Building technology", "Technology of the subject field", "Building in-house systems", "Study practice in building technology", "Study practice in technology of the subject field";</p> <p>Outputs: Increase of the knowledge and skills of the pupils, craftsmen and workers in the building sector in the</p>

		<p>construction of buildings with nearly zero energy consumption. Attainment of the national objectives in the field of energy efficiency, renewable energy and climate change mitigation, as well as of the ambitious objectives of the EU, laid down in the EU Directive on energy performance of buildings and Directive 2009/28/EC on promotion of the use of RES. Attainment of the EU 2020 targets on energy consumption in buildings.</p>
1.2.	<p>Costs and benefits: Financing and administration</p>	<p>The costs will be connected with updating of the training programmes of the above listed subjects – themes and number of classes; preparation of teaching aids for teachers and pupils on the specific thematic related to energy efficiency;</p> <p>Benefits: for the training institutions – vocational schools, high schools and vocational training centres</p> <p>Financing: Ministry of Education, Youth and Science, NAVET, national and European programmes;</p> <p>Administration: Ministry of Education, Youth and Science and NAVET</p>
1.3.	<p>Requirements concerning admission, level of the acquired qualification and issue of certificates to the graduates</p>	<p>For pupils: application of the framework programmes “C” for vocational education for acquiring of professional qualification Grade II and Grade III;</p> <p>For trainees: application of the framework programmes “B” for acquiring elementary vocational education for professional qualification Grade II; “C” for vocational education for professional qualification Grade II and Grade III; “E” for elementary vocational education for acquiring qualification on part of the profession; “F” for continuing vocational education for updating or broadening of the acquired professional qualification, as well as for acquiring of professional qualification Grade I, II and III.</p>
1.4.	<p>Selection and accreditation of training providers and quality control</p>	<p>Providers of training related to EE are institutions and employers in compliances with Art. 9, Paragraph 1, Item 1.3 and Paragraphs 2 and 3 of the Vocational Education and Training Act, who have trained teachers or experts in the specific EE-related training and an established system for guaranteeing the quality of vocational education and training by the training institutions</p>
1.5.	<p>Rules and requirements concerning the issue of certificates to the companies and professionals</p>	<p>In compliance with the requirements of the Vocational Education and Training Act – Art. 33 and 34</p>
1.6.	<p>Incentives and drivers, such as, for instance, support schemes and requirements for obtaining a certificate</p>	<p>Requirements for investors performing new construction or implementation of measures for energy efficiency improvement of existing buildings for obtaining of certificate or diploma, evidencing the acquired knowledge and skills by craftsmen and workers on the implementation of intelligent energy efficient solutions in buildings</p>
1.7.	<p>Practical training: practical sessions in production, study practice, apprenticeship</p>	<p>Conducting of study and production practice in a specific thematic (EE) – in compliance with Art. 30 and 31 of the Vocational Education and Training Act</p>

1.8.	Acquiring of multi-disciplinary knowledge and skills	Training connected with the implementation of intelligent energy efficient solutions in buildings for the subject fields “Civil engineering and architecture”, “Insulations in construction”, “Door and window frames and glazing” is a prerequisite for acquiring of multi-disciplinary knowledge and skills
1.9.	General course on EE	Mandatory for trainers, for persons attending a course for continuous vocational training for updating or broadening of the acquired professional qualification under the framework programme “F” and for persons attending a course for elementary vocational training in part of a profession under the framework programme “E”;  Under the form of a section of the subject “Building construction” – for pupils and trainees acquiring professional qualification grade in the above listed subject fields
1.10.	National registries: the respective law. Registry of the certified professionals.	The Ministry of Education, Youth and Science, NAVET and the Bulgarian Construction Chamber
1.11.	Opportunities for institutionalization of the proposed measures	The Ministry of Education, Youth and Science, NAVET and the Bulgarian Construction Chamber
2.	Training of trainers: new and upgraded measures for qualification and re-qualification	For teachers performing training on subjects related to the implementation of intelligent energy efficient solutions in buildings in the subject fields “Civil engineering and architecture”, “Insulations in construction”, “Door and window frames and glazing” additional qualification supplementing their basic professional qualification is required
2.1.	Scope, contents and outputs of the training under the proposed schemes	The training for acquiring additional qualification shall mandatory comprise a general course in EE, as well as the acquiring of specific knowledge and skills related to the different measures for implementation of intelligent energy efficient solutions in buildings
2.2.	Costs and benefits; financing and administration	The cost will be connected with: conducting of additional training, preparing of teaching aids for trainers specifically on the EE thematic;  Benefits: for the training institutions – vocational schools, high schools and vocational training centres;  Financing: the budget of the training institutions, self-financing and funding from national and European programmes;  Administration: the training institutions, the Ministry of Education, Youth and Science and NAVET
	Required resources for introduction of the schemes. Anticipated benefits from the point of view of improvement of the qualification of trainers.	Trained trainers, who will perform the training of trainers;  Adequate material and technical stock for performing practical training of teachers;
	Practical training	The practical training of teachers is a mandatory portion of the contents of the course for acquiring of additional qualification in the implementation of intelligent energy efficient solutions in buildings

	Multi-disciplinary knowledge and skills – introduction of EE as part of the training under all the schemes	The training, related to the implementation of intelligent energy efficient solutions in buildings is a precondition for acquiring multi-disciplinary knowledge and skills
	National registries	The Ministry of Education, Youth and Science and NAVET
3.	Upgrading of the material stock	The training, related to the implementation of intelligent energy efficient solutions in buildings requires mandatory updating of the material and technical stock of the study workshops for acquiring of elementary skills
	Justification of the demand. Directions and specifications.	In every study workshop in the subject fields “Insulations in construction” and “Door and window frames and glazing” it is necessary, depending on the thematic of the training, to renovate the respective machine tools, tools, devices and inventory.  Availability of the appropriate samples of the utilized building materials, models and teaching aids for teachers and pupils is required.
	Costs and benefits	Improvement of the quality of training related to EE
	Required resources for improvement of the material stock. Potential sources of financing. Anticipated benefits from the point of view of the upgrading of the training process and improvement of the qualification level.	Financing: budget of the training institutions, donation by companies, from national and European programmes
	Utilization modalities. Administration.	Administration: the training institutions