

BUILD UP ITALY Factsheet	
BUILD UP skills activities of the country	
BUS Pillar I project title (contract number)	BUILD UP SKILLS ITALY IEE/11/BWI/456/SI2.604586
BUS Pillar II project title (contract number)	Italian Training qualification Workforce in building (BUILD UP Skills I-TOWN) IEE/13/BWI/721 Building Refurbishment with Increased Competence, Knowledge and Skills (BUILD UP Skills BRICKS) IEE/13/BWI/711
Horizon 2020 Construction skills project title (contract number)	Meeting of Energy professional Skills (MEoS) Project ID: 649773 PROF / TRAC (PROFessional multi-disciplinary TRaining and Continuing development in skills for nZEB principles) Project ID: 649473
BUILD UP Skills Pillar II BRICKS	
Project coordinator's full name	Anna Moreno
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Project Partners ¹	<ul style="list-style-type: none"> . Italian National agency for new technologies, Energy and sustainable economic development (ENEA) (<i>Consortium coordinator</i>) . CS Aziendale . General Association Italian Cooperatives . ITS Energy and Environment . Archimedes181 s.r.l . Italian Union of Chambers of commerce . Institute for the promotion of technology innovation . Italian Thermotechnical Committee Energy & Environment - CTI . ECUBA LTD . Lombardia Foundation for the Environment . SVIM - SVILUPPO MARCHE SPA . National Technological District for Energy . Italian network of local energy agencies . MESOS - innovation and training advice . CasaClima agency

¹ BUILD UP Skills BRICKS, Annex I - Description of action

Project website	http://www.bricks.enea.it/
Keywords	Workforce qualification, workforce certification, training the trainers, on the job training, e-learning for workers
Duration	Start date: 01/09/2014 End date: 28/02/2017
Budget ²	1,156,270 Euro (EU contribution %75)
Context	
Summary description	BUILD UP Skills BRICKS aims at developing tools and methodologies to set up training systems to increase the knowledge, skills and competences of workers in the field of buildings refurbishment in order to intensify the introduction of Renewable Energy Sources (RES) and improve Energy Efficiency (EE) in the old as well as in the new buildings to reach Almost Nearly Zero Building (ANZB) stocks by 2020. On the job training pilot activities have been tested.
Objectives ³	<ul style="list-style-type: none"> . To define national standards for the competences of building workers in order to have a unique reference in all the Italian Regions . To establish a validation system for non-formal and informal learning aligned with the NQF . To develop a reference model for “on the job training” to be promoted in all Italian Regions . To develop learning materials for basic and specific subjects . To disseminate such materials through the BUILD UP Skills BRICKS website . To promote the “BRICKS quality label” among the enterprises committed to employee certified workers . To search for endorsement (of main stakeholders - public and private) of the outputs of the BUILD UP Skills BRICKS project
Target skills/ professions	Energy efficiency, Renewable Energy Systems - RES
Project’s results and impact	
Results ⁴	<ul style="list-style-type: none"> . Engagement of the majority of the Regions, which are updating the regional profiles with competences concerning energy performance . Identification of knowledge, skills and competences necessary to certify non-formal and informal competences aligned with EQF . Guidelines for Assisted Training on the Job (ATOJ) for three professional profiles: building automation, building envelope and geothermal pump installers . Registration of the “BRICKS label” at European level to be used by

² file:///C:/Users/Extra%202016/Downloads/intelligent_energy_europe_-_building_refurbishment_with_increased_competence_knowledge_and_skills_-_2016-08-04.pdf

³ BUILD UP Skills BRICKS, Annex I - Description of action

⁴ <https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-bricks>

	<p>companies whose employees are qualified/certified following the BRICKS scheme</p> <ul style="list-style-type: none"> . National draft standards for installers of both traditional and RES installers and any other building worker based on EQF schemes developed in other EU projects. . The standardisation processes are all in place and some standards will be published this year. . Production of the following qualification/certification models: <ul style="list-style-type: none"> - Building site trainer - Trainer in the energy field - Geothermal pump installer - Building automation installer - Solar thermal installer - Biomass plant installer - Photovoltaic installer - Chimney installer - Thermal heat installer - Energy auditor
<p>Lessons learnt/ Success factors⁵</p>	<ul style="list-style-type: none"> . Regions can be involved only through a long consensus process. It is very important that, in this process, besides the department of education and training, also the departments of energy and housing. This because the first knows the procedures and the second knows the requirements and the importance of competent workers while building or refurbishing houses. . Many regions use different “languages” and different procedures so each Region needs a specific adaptation an involvement of the right departments. . The labour market start to be interested to the opportunity of training the workers while in the building sites but the Regions are not yet ready to recognize qualification gained in this way. The qualification of training the on site trainers will be the first step.
<p>Barriers⁶</p>	<ul style="list-style-type: none"> . It is not yet in place a system to recognize the competences gained in non-formal and informal context. So workers trained in the building site cannot see their competences recognized. . The public administrations do not require the employment of qualified workers in public tender so companies do not feel motivated to qualify their own workers . The workers still see the qualification and/or certification only as an additional cost.

⁵ <https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-bricks>

⁶ Input from Anna Moreno, March 2017

Key needs ⁷	<p>Require public administration to link incentives for the energy performance to the employment of qualified people.</p> <p>A worker should be able to get a qualification on the building site but only after passing an examination intended to demonstrating the possess of knowledge, skill and competences for the job he is employed in.</p>		
Recommendations ⁸	<p>Regions should speed up the process of recognition of competences obtained through non-formal and informal processes.</p> <p>A part of SFE should be dedicated to promote on the job training and assessment criteria to qualify the workers.</p> <p>The Unions should negotiate with the building companies a way how to qualify all the workers in order to improve their performance and ensure the realization of more efficient buildings.</p>		
Replicability ⁹	<p>The “Assisted on the job training” is replicable in any context. The schemes, the e-learning materials, the self-assessment, the assessment and all the procedure to train the workers on the job are freely available in the website.</p>		
Project indicators			
Common performance indicators	Ex ante target ¹⁰	Final result	Target 2020 ¹¹
Number of training courses triggered by the action	<p>6 courses by BRICKS</p> <p>180 trainer courses by the Regions, Provinces and private bodies</p> <p>7,500 worker courses by the Regions, Provinces and private bodies</p>	<p>5 Courses by BRICKS</p> <p>1 Trainer course by the Regions</p> <p>No courses</p>	<p>80 trainer courses by BRICKS</p> <p>25,000 worker courses by the Regions, Provinces and private bodies</p>
Number of people that will be trained	<p>15 trainers by BRICKS</p> <p>45 workers by BRICKS</p> <p>2,600 trainers by the Regions, Provinces and private bodies</p> <p>113,000 workers by the Regions,</p>	<p>7 Trainers by BRICKS</p> <p>12 Workers by BRICKS</p> <p>10 Trainers by the Regions</p>	<p>1,250 trainers by the Regions, Provinces and private bodies</p> <p>368,000 workers by the Regions, Provinces and private bodies</p>

⁷ Input from Anna Moreno, March 2017

⁸ Input from Anna Moreno, March 2017

⁹ Input from Anna Moreno, March 2017

¹⁰ BUILD UP Skills BRICKS, Annex I - Description of action

¹¹ BUILD UP Skills BRICKS, Annex I - Description of action

	Provinces and private bodies	No worker	
Number of hours taught in the frame of the courses triggered	300 hours BRICKS including trainers and workers 310,000 hours including trainers and workers by the Regions, Provinces and private bodies	760 hours BRICKS 200 hours for trainers by the Regions	1,004,800 hours including trainers and workers by the Regions, Provinces and private bodies
Estimated specific cost to qualify each trainee	1,600 €/trainee	625€/trainee	1000 €/trainee
Renewable Energy production triggered (toe/year)	541,000 toe/year	N/A	2,303,000 toe/year
Primary energy savings compared to projections (toe/year)	418,900 toe/year	0.024 toe/year	1,783,000 toe/year
Reduction of greenhouse gas emissions (tCO2e/year)	631,700 tCO2e/year	0.030 tCO2e/year	2,689,000 tCO2e/year
BUILD UP Skills Pillar II I-TOWN			
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Project Partners	<ul style="list-style-type: none"> . National training provider for the Building Sector - FORMEDIL (<i>Consortium coordinator</i>) . Center for Vocational Education and Training, Research, Development and Innovation - SINERGIE . National Construction Association - ASSISTAL . Polytechnic University Turin - Politecnico di Torino . Local Energy Agencies Network - RENAEL . University of Naples - Industrial Engineering Department - UNINA 		

	<ul style="list-style-type: none"> . Training provider for Arts and Crafts companies - CNA-ECIPA . National association for building constructors - ANCE
Project website	http://www.bus-itown.eu/
Keywords	Energy efficiency, training, sustainability, blue-collar, building
Duration	Start date: 01/09/2014 End date: 31/08/2017
Budget	1,148,186 Euro (EU contribution 75%)
Context	
Summary description	The main aim is to develop and validate the training curriculum, competences framework and training courses at EQF level 3 for building workers.
Objectives ¹²	<ul style="list-style-type: none"> . To develop qualification schemes based on the output of the Italian BUS Pillar I roadmap . Identify the strategy to remove the obstacles detected in the BUS roadmap to promote VET (Vocational & Educational Training) qualification schemes and certification criteria . Promote/implement local good practices at national level . Develop national standards for the different workers' profiles based on the EQF schemes . Set up the certification procedure with accredited bodies . Produce learning content to be shared among all the VET systems . Promote the training of trainers and their qualification . Promote pilot studies for training workers on the construction sites . Promote a quality label for the enterprises recruiting qualified workers . Promote the endorsement campaign and mutual recognition among the Italian regions and chambers of commerce . Promote mutual recognition with other European countries
Target skills/ professions	<ul style="list-style-type: none"> . Bricklayer with skills on thermal and acoustic insulation of opaque walls and floors, preparation of energy supplies from renewable and traditional integrated systems, installation of heating elements in floor and ceilings, elimination of thermal bridges. . Thermo-hydraulic operator, with expertise on heating systems, solar thermal systems, heat pumps, biomass, geothermal energy, ventilation systems, cogeneration and trigeneration. . Electricity Operator, with expertise in optimized electrical systems, photovoltaic systems, lighting systems, small wind turbines. . Electronics Operator, with skills related to monitoring systems and smart control systems of thermo-hydraulic and electrical systems

¹² <https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-i-town>

	<p>and home automation systems.</p> <ul style="list-style-type: none"> . Wood Operators, with skills on thermal and acoustic insulation, sealing windows, green buildings.
Project's results and impact	
Results ¹³	<ul style="list-style-type: none"> . Certification/qualification of craftsmen and other on-site workers (blue collars) in the field of sustainable building. During the project lifetime, a number of training schemes will be developed. It can be estimated that after the project lifetime, the training courses further implemented could qualify or certify a relevant number of building workers up to 2020. . Training of teachers, engineers, professors, which will further train building workers and disseminate the concept of the training courses: during the project, trainers will be trained through the "train the trainers" courses (also e-learning platform - learning management system may be realized). . Acceleration in adopting and promoting energy efficiency in buildings: the consortium has been defined in order to involve companies and project developers in the project realization. This cooperation will accelerate the deployment of energy efficient systems in new buildings and renovations.
Lessons learnt ¹⁴	<ul style="list-style-type: none"> . On the basis of 901 questionnaires filled in by Italian workers of the building sector, it has been found that there is a lack of competences on energy and environmental issues and that workers have the awareness on the importance of those skills and the necessity to acquire them. . Given the specificity of the building sector and the characteristics of workers, it has been defined that the trainer should ideally be around 35-60 with at least 15 years of experience at construction sites. He should have overt operational skills. Pedagogical skills can be acquired attending specific training courses as well as the specific new professional skills. . Referring to the qualifications, one of the suitable solutions seems to be to qualify the trainers with a professional qualification standard (e.g. 'construction site manager') and with a specific professional 'training' qualification. . It is necessary to create a training and qualification system based on public standards with a national recognition that does not impact workers and companies in economic terms.
Barriers ¹⁵	<p>On the basis of 901 questionnaires filled in by Italian workers of the building sector it has been found that there is a lack of competences</p>

¹³ <https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-i-town>

¹⁴ <https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-i-town>

¹⁵ Input from Giovanni Carapella, April 2017

	on energy and environmental issues and that workers have the awareness on the importance of those skills and the necessity to acquire them.			
Key needs ¹⁶	One suitable solution seems to qualify the trainers and workers with a professional qualification standard (e.g. 'worksite manager') and with a specific professional training (of 80-150 hours after the qualification). It is necessary to create a training and qualification system not impacting in economic term on workers and companies, based on public standards with a national recognition.			
Recommendations ¹⁷	Given the specificity of the building sector and the characteristics of workers, it has been defined that the trainer should be aged 35-60 with at least 15 years of experience at construction sites. He should have overt operational skills. Pedagogical skills can be acquired attending specific training courses as the specific new professional skills.			
Replicability ¹⁸	The training of trainers should not be only technical and operational. It is important to provide specific train on soft skills to trainers. They need to acquire the necessary traits to provide effective training to workers trained trainers can act as multipliers			
Project indicators				
Add indicators + their data	Ex ante target ¹⁹	Interim results	Final result	Target 2020 ²⁰
Number of training courses triggered by the action	10	8	ongoing	7500
Number of people that will be trained	10,000 workers	820	ongoing	150,000 workers
Number of hours taught in the frame of the courses triggered	7000 workers	2560	ongoing	105,000 workers
Estimated specific cost to qualify each trainee	280 €/trainee	280 €/trainee	280 €/trainee	280 €/trainee
Renewable Energy production triggered	31 toe/year	31 toe/year	ongoing	465 toe
Primary energy savings compared to projections	750.4 toe/year	750.4 toe/year	ongoing	11,256 toe
Reduction of greenhouse gas emissions	3,453.24 tCO2e/year	3,453.24 tCO2e/year	ongoing	51,839.9 tCO2e
Meeting of Energy professional Skills (MEoS)				
Country organisations involved	<ul style="list-style-type: none"> . ENERGIA-DA SRL (Project Coordinator) . Knowledge Transfer Network Limited (UK) . Aristotle University of Thessaloniki (EL) . Brunel University London (UK) . University of Cyprus (CY) 			

¹⁶ Input from Giovanni Carapella, April 2017

¹⁷ Input from Giovanni Carapella, April 2017

¹⁸ Input from Giovanni Carapella, April 2017

¹⁹ BUILD UP Skills I-TOWN, Annex I - Description of action

²⁰ BUILD UP Skills I-TOWN, Annex I - Description of action

	<ul style="list-style-type: none"> . Technical University of Cluj-Napoca (RO) . Dublin Institute of Technology (IE) . Energy Consulting Network APS (DK) . Radio-television belge de la Communaute francaise (BE) . Ss. Cyril and Methodius University in Scopje (MK) . Université Libre de Bruxelles (BE) . University of Kassel (DE) . Universitat Politecnica de Valencia (ES)
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Project's website	http://www.mens-nzeb.eu/en/
Keywords	Training with accreditation for building managers, architects and engineers; NZEB; women in building environment; employability; educational integrated approach
Duration	Start date: 01/03/2015 End date: 31/08/2017
Budget	1,478,160 Euro (EU contribution 100%)
Context	
Summary description ²¹	<p>The idea of MEnS is to provide and enhance the NZEB skills of building managers, engineers and architect through a series of accredited training activities developed by 9 universities and 3 market players. The strategic target is to accelerate the NZEB culture in existing professional and market experts, in order to reduce the gap in the current knowledge on the technical implementation of NZEB solutions in the existing building stock. MEnS project is to the forefront in tackling the implementation of the NZEB, covering the lack of professionals' expertise and helping the unemployed and women in the Built Environment. MENS is developed through 3 sets of training activities: national accreditation professional courses; e- learning and webinars; and case studies from across Europe.</p>
Objectives ²²	<ul style="list-style-type: none"> . To increase the knowledge and skills of at least 1800 building managers (engineers, architects) in NZEB design and construction, out of which 50% would be women or unemployed. . To create and implement a new education and training program for such professionals in 10 countries, under the European Qualifications Framework provisions and based on desired and common learning outcomes of Level 7. . To create and implement an innovative, interdisciplinary education and training program with an integrated approach,

²¹ http://cordis.europa.eu/project/rcn/194619_en.html

²² http://cordis.europa.eu/project/rcn/194619_en.html

	<p>focusing on real case studies</p> <ul style="list-style-type: none"> . To accredit courses using the formal procedure in each country and assign ECTS credits. . To enhance and support the development of a professional network in Europe specifically focused on retrofitting of housing stocks towards NZEB. A connection with over 250,000 stakeholders and market players. . To provide working opportunities to unemployed professionals, by bringing them closer to possible employers and improving their qualifications, at a percentage of 30% of those attending. . To continue the education and training courses for at least 5 years after the end of the project based on concrete sustainability plans agreed by University partners. . To result in energy savings and/or increased use of renewables of at least 28,96 GWh/year.
Target skills/ professions	building managers, engineers and architects
PROF/TRAC	
Project Coordinator ²³	Huygen Installatie Adviseurs (NL)
Participants ²⁴	<ul style="list-style-type: none"> . Federatie van Verenigingen voor Verwarming en Luchtbehandeling in Europa (NL) . CAE Services GEIE (BE) . Conseil des architectes d'Europe (BE) . Comité Européen de coordination de l'habitat social AISBL (BE) . Stichting Instituut voor Studie en Stimulering van Onderzoek op het Gebied van Gebouwinstallaties (NL) . Instituto Valenciano de la Edificación (ES) . České vysoké učení technické v Praze (CZ) . Aalborg Universitet (DK) . Danvak APS (DK) . Hrvatska komora inženjera strojarstva (HR) . Fundatecyr (ES) . Nederlandse Technische Vereniging voor Installaties in Gebouwen TVVL (NL) . Ceska komora autorizovanych inzeyru a techniku (CZ) . Zbornica za arhitekturo in prostor Slovenije (SL) . Consiglio Nazionale degli Architetti, Pianificatori, Paesaggisti e Conservatori (IT)
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Project's website	http://proftrac.eu/open-training-platform-for-nzeb-professionals.html

²³ http://cordis.europa.eu/project/rcn/194585_en.html

²⁴ http://cordis.europa.eu/project/rcn/194585_en.html

Keywords	Skills, training, white-collar, energy-efficiency, nZEB
Duration	Start date: 2015/03/01 . End date: 2018/02/28
Budget ²⁵	EUR 1 499 871.25 (EU contribution 100%)
Summary description	<p>PROF-TRAC has developed a skills mapping methodology (creating inventories of professionals, existing qualifications, available education programmes, accreditation and certification structures and so on) through which estimates of the number of professionals required can be made. One of the results is a implementation of the results in a mobile application that facilitates actors in the construction sector find a suitable training. PROF-TRAC has also resulted in an online database (http://proftrac.eu/training-materials.html) that lists and categorises training projects (e.g. according to target / involved groups, building phase).</p> <p>PROF-TRAC is building upon previous IEE projects (BuildUpSkills, IDES-EDU etc.) and is initiated by the largest European associations for the sector (REHVA, ACE, CECODHAS).</p>
Context	
Objectives ²⁶	<ul style="list-style-type: none"> . Mapping of the required skills and current skills gap of professionals in NZEB . Development of an open training platform including methods for a systematic and sustainable access to knowledge. . Development and testing of a Train the Trainers programme for the developed curriculum and/or qualification scheme . Development of a repository of the training material for use in education and post-initial education.
Target skills/ professions ²⁷	<ul style="list-style-type: none"> . Architects . Engineers . Building managers . Other building professionals

²⁵ http://cordis.europa.eu/project/rcn/194585_en.html

²⁶ http://cordis.europa.eu/project/rcn/194585_en.html

²⁷ http://cordis.europa.eu/project/rcn/194585_en.html