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 (MEnS)
  - 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
- Contact person’s name
  - Anna Moreno
- Contact person’s phone
  - +390630486474
- Contact person’s email
  - anna.moreno@enea.it

**Project Partners**

- Italian National agency for new technologies, Energy and sustainable economic development (ENEA) *(Consortium coordinator)*
- 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

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¹ BUILD UP Skills BRICKS, Annex I - Description of action
<table>
<thead>
<tr>
<th><strong>Project website</strong></th>
<th><a href="http://www.bricks.enea.it/">http://www.bricks.enea.it/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Keywords</strong></td>
<td>Workforce qualification, workforce certification, training the trainers, on the job training, e-learning for workers</td>
</tr>
</tbody>
</table>
| **Duration**        | Start date: 01/09/2014  
End date: 28/02/2017 |
| **Budget**<sup>2</sup> | 1,156,270 Euro (EU contribution %75) |

### Context

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.

### Summary description

- 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

- 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 public and private enterprises committed to employee certified workers

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<sup>2</sup> [file:///C:/Users/Extra%202016/Downloads/intelligent_energy_europe_-_building_refurbishment_with_increased_competence_knowledge_and_skills_-_2016-08-04.pdf](file:///C:/Users/Extra%202016/Downloads/intelligent_energy_europe_-_building_refurbishment_with_increased_competence_knowledge_and_skills_-_2016-08-04.pdf)

companies whose employees are qualified/certified following the BRICKS scheme

- 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:
  - 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

Lessons learnt/ Success factors

- 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.

Barriers

- 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.

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6 Input from Anna Moreno, March 2017
**Key needs**

Require public administration to link incentives for the energy performance to the employment of qualified people.
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.

**Recommendations**

Regions should speed up the process of recognition of competences obtained through non-formal and informal processes.
A part of SFE should be dedicated to promote on the job training and assessment criteria to qualify the workers.
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.

**Replicability**

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.

**Project indicators**

<table>
<thead>
<tr>
<th>Common performance indicators</th>
<th>Ex ante target</th>
<th>Final result</th>
<th>Target 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of training courses triggered by the action</strong></td>
<td>6 courses by BRICKS</td>
<td>5 Courses by BRICKS</td>
<td>80 trainer courses by BRICKS</td>
</tr>
<tr>
<td></td>
<td>180 trainer courses by the Regions, Provinces and private bodies</td>
<td>1 Trainer course by the Regions</td>
<td>25,000 worker courses by the Regions, Provinces and private bodies</td>
</tr>
<tr>
<td></td>
<td>7,500 worker courses by the Regions, Provinces and private bodies</td>
<td>No courses</td>
<td></td>
</tr>
</tbody>
</table>

| **Number of people that will be trained** | 15 trainers by BRICKS | 7 Trainers by BRICKS | 1,250 trainers by the Regions, Provinces and private bodies |
|                                           | 45 workers by BRICKS | 12 Workers by BRICKS | 368,000 workers by the Regions, Provinces and private bodies |
|                                           | 2,600 trainers by the Regions, Provinces and private bodies | 10 Trainers by the Regions |  |
|                                           | 113,000 workers by the Regions, | |  |

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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
<table>
<thead>
<tr>
<th>Number of hours taught in the frame of the courses triggered</th>
<th>Provinces and private bodies</th>
<th>No worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 hours BRICKS including trainers and workers</td>
<td>310,000 hours including trainers and workers by the Regions, Provinces and private bodies</td>
<td>200 hours for trainers by the Regions</td>
</tr>
<tr>
<td>Estimated specific cost to qualify each trainee</td>
<td>1,600 €/trainee</td>
<td>625 €/trainee</td>
</tr>
<tr>
<td>Renewable Energy production triggered (toe/year)</td>
<td>180,000 toe/year</td>
<td>56,000 toe/year</td>
</tr>
<tr>
<td>Primary energy savings compared to projections (toe/year)</td>
<td>140,000 toe/year</td>
<td>44,800 toe/year</td>
</tr>
<tr>
<td>Reduction of greenhouse gas emissions (tCO2e/year)</td>
<td>210,000 tCO2e/year</td>
<td>67,200 tCO2e/year</td>
</tr>
</tbody>
</table>

**BUILD UP Skills Pillar II I-TOWN**  
Project coordinator’s full name: Giovanni Carapella  
Contact person’s name: Giovanni Carapella  
Contact person’s phone: +390685261798  
Contact person’s email: giovanni.carapella@formedil.it  

Project Partners:  
- National training provider for the Building Sector - FORMEDIL (Consortium coordinator)  
- 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 - RENAEEL  
- University of Naples - Industrial Engineering Department - UNINA
| 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 | The main aim is to develop and validate the training curriculum, competences framework and training courses at EQF level 3 for building workers. |
| 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 | 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 | 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 |

<table>
<thead>
<tr>
<th>Project’s results and impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Results</strong>&lt;sup&gt;13&lt;/sup&gt;</td>
</tr>
<tr>
<td>1. 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.</td>
</tr>
<tr>
<td>2. 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 &quot;train the trainers&quot; courses (also e-learning platform - learning management system may be realized).</td>
</tr>
<tr>
<td>3. 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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lessons learnt&lt;sup&gt;14&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 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.</td>
</tr>
<tr>
<td>2. 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.</td>
</tr>
<tr>
<td>3. 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.</td>
</tr>
<tr>
<td>4. 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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Barriers&lt;sup&gt;15&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
</tr>
</tbody>
</table>

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<sup>15</sup> 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\textsuperscript{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\textsuperscript{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\textsuperscript{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.

<table>
<thead>
<tr>
<th>Project indicators</th>
<th>Add indicators + their data</th>
<th>\textbf{Ex ante target}\textsuperscript{19}</th>
<th>\textbf{Final result}\textsuperscript{20}</th>
<th>\textbf{Target 2020}\textsuperscript{21}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of training courses triggered by the action</td>
<td>10</td>
<td>11</td>
<td>7500</td>
<td></td>
</tr>
<tr>
<td>Number of people that will be trained</td>
<td>260</td>
<td>325 people trained in class. 4005 people trained through self-learning video lessons.</td>
<td>150,000 workers</td>
<td></td>
</tr>
<tr>
<td>Number of hours taught in the frame of the courses triggered</td>
<td>7000 hours</td>
<td>4200 hours</td>
<td>105,000 hours</td>
<td></td>
</tr>
<tr>
<td>Estimated specific cost to qualify each trainee</td>
<td>280 €/trainee</td>
<td>280 €/trainee</td>
<td>280 €/trainee</td>
<td></td>
</tr>
<tr>
<td>Renewable Energy production triggered</td>
<td>20 toe/year</td>
<td>40 toe/year</td>
<td>465 toe</td>
<td></td>
</tr>
<tr>
<td>Primary energy savings compared to projections</td>
<td>261,13 toe/year</td>
<td>523 toe/year</td>
<td>11,256 toe</td>
<td></td>
</tr>
<tr>
<td>Reduction of greenhouse gas emissions</td>
<td>1196 tCO(_2)eq/year</td>
<td>2396 tCO(_2)eq/year</td>
<td>51,839.9 tCO(_2)e</td>
<td></td>
</tr>
</tbody>
</table>

\textbf{Meeting of Energy professional Skills (MEnS)}

<table>
<thead>
<tr>
<th>Country organisations involved</th>
<th>\textsuperscript{16} Input from Giovanni Carapella, April 2017</th>
<th>\textsuperscript{17} Input from Giovanni Carapella, April 2017</th>
<th>\textsuperscript{18} Input from Giovanni Carapella, April 2017</th>
<th>\textsuperscript{19} BUILD UP Skills I-TOWN, Annex I - Description of action</th>
<th>\textsuperscript{20} Input from Giovanni Carapella, November 2017</th>
<th>\textsuperscript{21} BUILD UP Skills I-TOWN, Annex I - Description of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>. ENERGIA-DA SRL (Project Coordinator)</td>
<td>. Knowledge Transfer Network Limited (UK)</td>
<td>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Contact person’s name
Daniela Melandri  
Agnese Riccetti

### Contact person’s email
d.melandri@energiada.it  
a.riccetti@energiada.it

### Project’s website

### 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
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.

### Objectives
1. 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.
2. 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

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<table>
<thead>
<tr>
<th>Target skills/ professions</th>
<th>building managers, engineers and architects</th>
</tr>
</thead>
</table>

**PROF/TRAC**

<table>
<thead>
<tr>
<th>Project Coordinator</th>
<th>Huygen Installatie Adviseurs (NL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>Federatie van Verenigingen voor Verwarming en Luchtbehandeling in Europa (NL)</td>
</tr>
<tr>
<td></td>
<td>CAE Services GEIE (BE)</td>
</tr>
<tr>
<td></td>
<td>Conseil des architectes d'Europe (BE)</td>
</tr>
<tr>
<td></td>
<td>Comité Européen de coordination de l'habitat social AISBL (BE)</td>
</tr>
<tr>
<td></td>
<td>Stichting Instituut voor Studie en Stimulering van Onderzoek op het Gebied van Gebouwinstallaties (NL)</td>
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<tr>
<td></td>
<td>Instituto Valenciano de la Edificación (ES)</td>
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<tr>
<td></td>
<td>České vysoké učení technické v Praze (CZ)</td>
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<tr>
<td></td>
<td>Aalborg Universitet (DK)</td>
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<td></td>
<td>Danvak APS (DK)</td>
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<td></td>
<td>Hrvatska komora inženjera strojarstva (HR)</td>
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<td></td>
<td>Fundatecry (ES)</td>
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<tr>
<td></td>
<td>Nederlandse Technische Vereniging voor Installaties in Gebouwen TVVL (NL)</td>
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<td></td>
<td>Ceska komora autorizovanych inzeyru a techniku (CZ)</td>
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<td></td>
<td>Zbornica za arhitekturo in prostor Slovenije (SL)</td>
</tr>
<tr>
<td></td>
<td>Consiglio Nazionale degli Architetti, Pianificatori, Paesaggisti e Conservatori (IT)</td>
</tr>
</tbody>
</table>

**Contact person’s name**

Peter Op’t Veld

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Contact person’s email  p.optveld@huygen.net

Project’s website  http://proftrac.eu/open-training-platform-for-nzeb-professionals.html

Keywords  Skills, training, white-collar, energy-efficiency, nZEB

Duration  Start date: 2015/03/01  
End date: 2018/02/28  

Budget  EUR 1,499,871.25 (EU contribution 100%)

Summary description  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). 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).

Context

Objectives

- 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

- Architects
- Engineers
- Building managers
- Other building professionals

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