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TIMEPAC-2022

International Workshop

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**Politecnico
di Torino**

CV definition of the Energy Efficiency Expert in the construction sector

In the context of the Erasmus+
EEE project

Matteo Trichilo
P-Learning Srl, Italy



Founded in 2011 in Brescia, P-Learning is a training institution that operates in the field of **accredited training for technical professionals** (such as engineers, architects, industrial experts, etc.) **and companies**



Our teaching methodology is currently exclusively online (**e-learning**)



Our **online course catalogue covers many fields** such as Energy, Construction, Environment, Graphics, ICT, Management and Information Engineering, Planning and Control, Health and Safety Workers, and Soft skills



The training courses in the energy field have been realized in **collaboration** with the **Italian Thermotechnical Committee (CTI)**, a federated body of the UNI

N° 2020-1-IT01-KA202-008375

Call for proposals 2020 - Erasmus+ Programme

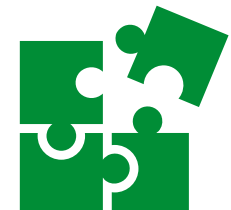
KA202 - Strategic Partnerships for vocational education and training

Starting date: 01-11-2020

Project duration: 25 + 3 months

Consortium

Politecnico di Torino (Italy) – *project coordinator*
Coopération Bancaire Pour l'Europe (Belgium)
A & A Emphasys Interactive Solutions Ltd (Cyprus)
Politeknika Ikastegia Txorierri (Spain)
Institut "Jožef Stefan" (Slovenia)
P-Learning Srl (Italy)





Background

Green Deal: climate neutrality in 2050

EU: buildings = 40% of En. consumption

School: few presence of En. Efficiency Expert

SMEs: EEE Expert = €€€



Aims

Elaborating innovative teaching material to target people and organizations interested in fostering a new professional career: The Energy Efficiency Expert

Raise awareness of the goals of the Green Deal

Target group



Direct: VET trainers, SMEs consultants and technical professionals (engineers, architects)

Indirect: technicians (electricians, surveyors) and small and medium-sized entrepreneurs



- 1** **CV definition of the EEE in the construction sector** combining technical, digital and environmental knowledge with entrepreneurial mindsets, financial and soft skills
- 2** **VET training online for trainers** in order to enhance their ability to transfer the energy efficiency and innovative financial instruments knowledge
- 3** **Interactive map of EU best cases** of innovative techniques and tools related to the energy efficiency of buildings

As expected, **some professional figures** (such as the Energy Auditor, who "was born" from Article 8 of the European Union (EU) Energy Efficiency Directive (2012/27 / EU)) **are present, regulated or not, in more than one partner country**

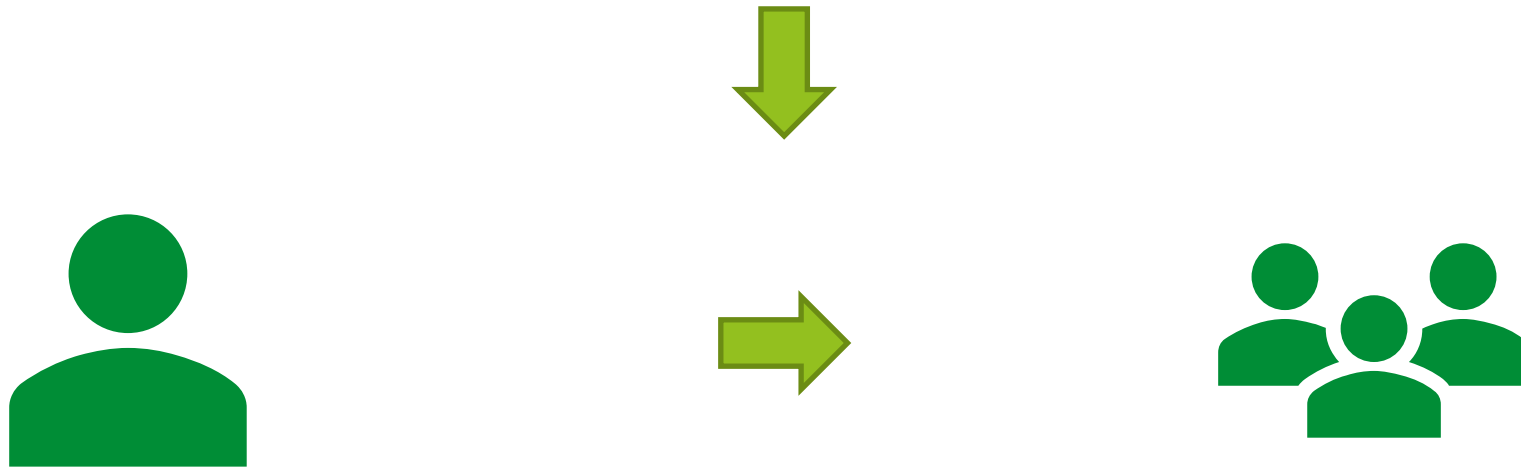
Sometimes instead, there is an overlap of the different professional figures, in some country (or region) for example, the profile of the Energy Auditor overlaps with the profile of the Energy Manager on the one hand and with that of the Energy Certifier of buildings on the one hand

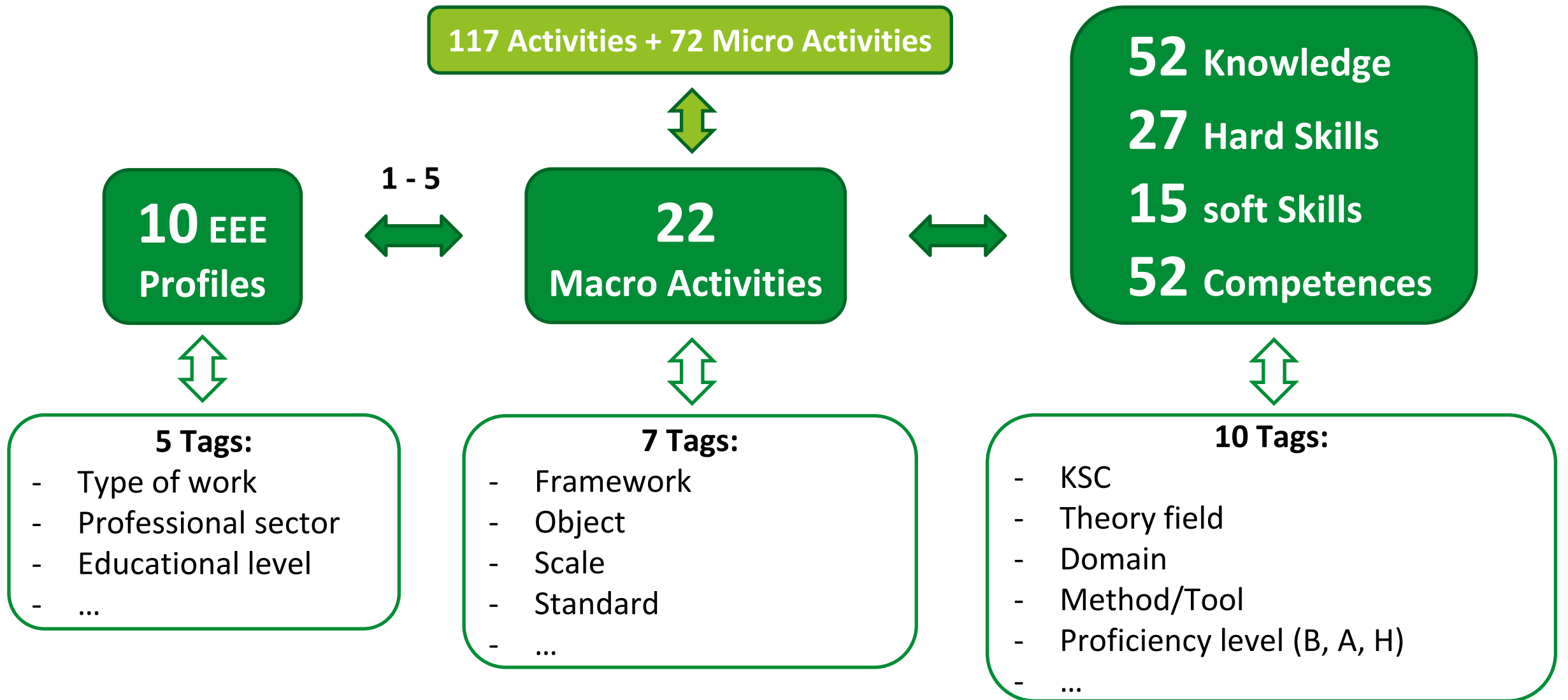
In some European countries, for example in Belgium, the **professional figures identified**, except for the Energy Auditor, were born directly from the industrial sector and **do not refer to any European law / standard**; they were in fact found by analysing the job offers in the sector and the curricula of university masters

Similarly, some countries, such as Slovenia, do not have formal requirements for the profile of Energy Manager as for many other energy profiles. While there are formal requirements for professionals for building energy certification and inspectors of HVAC systems (both based on the EPBD directive) and operators of boilers, compressors, and small power plants (**by local law**)

The analysis of the different professional qualifications in the energy efficiency sector in the participating countries made it possible to **identify the main common activities and sub-activities** between them

It was also possible to **identify a first list of knowledge, skills and competences that at least partially overlapped.**









n°	Energy Efficiency Expert in:
1	BACS installation and maintenance
2	Energy auditing and certification
3	Energy economics
4	Energy management
5	Energy performance simulation
6	Energy policy and urban planning
7	Green and low energy buildings design
8	HVAC systems and RES design
9	HVAC systems inspection and commissioning
10	HVAC systems installation and maintenance
11	Energy policy and urban planning













IO1 - CV Definition of the EEE – 22 Macro Activities

n°	Macro Activities	n°	Macro Activities
1	BACS design	12	Energy economics advice
2	BACS installation and maintenance	13	Energy policy advice
3	Building energy advice	14	Energy trading and green procurement
4	Building energy audit	15	HVAC systems commissioning and recommissioning
5	Building energy management	16	HVAC systems design
6	Building energy modelling	17	HVAC systems inspection
7	Building energy performance certification	18	RES design
8	Building environmental design	19	Technical building systems installation
9	Construction management and supervision	20	Technical building systems maintenance
10	Energy community design	21	Urban energy modelling
11	Energy community management	22	Urban energy planning

IO1 - CV Definition of the EEE – Web app – Profiles and related Macro Activities



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Energy Efficiency Expert in:	Macro Activities	
1. <u>BACS installation and maintenance</u>	<ul style="list-style-type: none"> • <u>BACS installation and maintenance</u> 	 
2. <u>Energy auditing and certification</u>	<ul style="list-style-type: none"> • <u>Building energy advice</u> • <u>Building energy audit</u> • <u>Building energy performance certification</u> • <u>Energy economics advice</u> 	 
3. <u>Energy economics</u>	<ul style="list-style-type: none"> • <u>Energy economics advice</u> • <u>Energy trading and green procurement</u> 	 
4. <u>Energy management</u>	<ul style="list-style-type: none"> • <u>Building energy advice</u> • <u>Building energy management</u> • <u>Energy community management</u> • <u>Energy trading and green procurement</u> 	 
5. <u>Energy performance simulation</u>	<ul style="list-style-type: none"> • <u>Building energy modelling</u> • <u>Urban energy modelling</u> 	 
6. <u>Energy policy and urban planning</u>	<ul style="list-style-type: none"> • <u>Energy policy advice</u> • <u>Urban energy planning</u> 	 
	<ul style="list-style-type: none"> • <u>Building energy advice</u> 	



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Energy Efficiency Expert in: Energy auditing and certification

Profile Features

Type Of Work

- Intellectual

Professional Sector

- Financial
- Technical

Educational Level

- Academic bachelor degree
- Academic master degree
- Advanced bachelor programme
- Advanced master programs
- Doctoral degree
- Higher vocational education
- Professional bachelor degree

Work Experience

- Beginner
- Intermediate
- Experienced
- Advanced
- Expert



Professional Qualification

- Building Energy Certifier
- Enerav auditor



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- SEARCH
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Profile Activities

- [1. Building energy advice](#) 
- [2. Building energy audit](#) 
- [3. Building energy performance certification](#) 
- [4. Energy economics advice](#) 

Knowledge Skills And Competences

- Knowledge 
- Hard skills 
- Soft Skills 
- Competence 



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- LEARNING MODULES

Profile Activities

1. Building energy advice



1. Advice on compliance to building energy codes

- Assessment of compliance level and evaluation of existing procedures and practices
- Identifying corrective measures and areas for improvement

2. Advice on building energy economics

- Techno-economical analysis
- Identifying appropriate products and type of supply offers, contractual forms, tariffs
- Evaluation of potentials for energy performance contracting
- Evaluation of tendering procedures and green procurement activities

3. Advice on building energy planning

- Energy planning using ICT tools
- Identifying and quantifying smart energy solutions for improving energy efficiency, reducing costs and climate footprint of a building

4. Advice on building environmental design

- Enhancing indoor and outdoor environmental quality
- Sustainable building design

IO1 - CV Definition of the EEE – Web app – Example of a Macro Activity page

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- ISO 50002

Implementation Context

- European Union
- Belgium
- Cyprus
- Italy
- Slovenia
- Spain

Related Profiles

- [Energy auditing and certification](#)

Related Activities and Micro Activities

1. Building energy audit







- Preparation of the energy audit plan
- Start-up meeting for gathering information from organization and presentation of the audit methodology and plan
- Energy audit field work including individual measurements and interviews with the key personnel
- Preliminary contact for defining the content, objectives, scope, boundaries and thoroughness of energy audit
- Energy audit analysis: energy breakdown, energy performance indicators, reference energy consumption (baseline) and evaluation of energy efficiency improvement opportunities
- Drafting of a report with the emphasis on energy saving interventions including their ranking and implementation programme
- Energy audit data collection: information request, review of the available data and preliminary data analysis, preparation of measurement plans
- Final meeting with the client (presentation of results and definition of the follow-up activities)

Knowledge Skills And Competences

IO1 - CV Definition of the EEE – Web app – Searching tool



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Search for the 10 EEE Profiles, the 22 Macro Activities and the 131 Knowledge-Skills-Competence (KSC)

Refine the search results with filters

SEARCH BY:

KSC No.	Knowledge Skills And Competence
K1	1. Knowledge of the energy market, energy trading, players involved, relevant regulatory framework, products and type of supply offers, contractual forms, tariffs a
K2	2. Knowledge about energy performance contracting and the characteristics of energy efficiency measures in the building sector
K3	3. Knowledge of contractual arrangements for the purchase of goods and services, with particular reference to interventions aimed at energy refurbishment (green
K4	4. Knowledge of the budgeting elements
K5	5. Knowledge of the forms and procedures for the detection of costs
K6	6. Knowledge of the EU and local funding programs and their rules
K7	7. Knowledge of the financial and economic literacy
K8	8. Knowledge about national and EU regulations that must be applied in the design and maintenance of thermal installations in buildings, including those exploiting
K9	9. Knowledge of relevant laws, policies, rules, regulations, standards that govern energy auditing and competences of energy auditor
K10	10. Knowledge of current and forthcoming national and EU building energy legislation
K11	11. Knowledge about laws and regulations that govern certification of energy performance of buildings and obligations and responsibilities of the energy certifier
K12	12. Knowledge of legislation and technical regulations on environmental protection and pollution factors
K13	13. Knowledge of the CEN/CENELEC/ETSI/ISO/IEC standards for the sector, quality systems and main models
K14	14. Knowledge of efficiency and renewable energy programs and policies, both at the European and national level

→ TAGS

- KSC Tag ▶
- Framework ▶
- Object ▶
- Theory Field ▶
- Scale ▶
- Domain ▼
 - Economy
 - Engineering
 - Entrepreneurship
 - Ergonomics
 - ICT
 - Physics
 - Policy
 - Psychology
 - Sociology
 - Safety
 - Risk management
- Method / Tool ▶
- Criteria Constraints ▶
- Implementation Context ▶

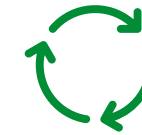
FILTER



the **breadth** of the **spectrum** of expert **profiles** covered



the **holistic approach** to define the **knowledge**, **skills** and **competences**



the **transversality** of the various **activities** presented



latest European **directives** and international **standards**



the **high flexibility** of the **CV structure** itself



a **web app**, which will allow users to freely **navigate within EEE CV** framework

**If you would like more information,
please contact us at**

**segreteria@p-learning.com
<https://eeexpert-project.eu>**

Thanks for your attention!