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Paper session on Sustainable Construction

"Energy skills as a driver to sustainable construction: current status, needs and proposed actions" - Project SEEtheSkills insider view

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SEEtheSkills' - actions toward sustainability of construction

Topics covered:

- ✓ Energy skills and Sustainable construction
- ✓ The novel 3V SEEtheSkills' approach related to energy skills
- ✓ State-of-the-art research of the best practices in the field of energy skills on EU level
- ✓ Inter-regional survey on energy skills
- ✓ Planned further actions

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Rationale

- Energy efficiency
- Sustainable use of resources
- Waste reduction
- Environment preservation
- Designing efficiency

Energy skills

- Competent workforce
- Skilled and trained workers
- Qualified professionals
- Embraced innovations

Sustainable construction

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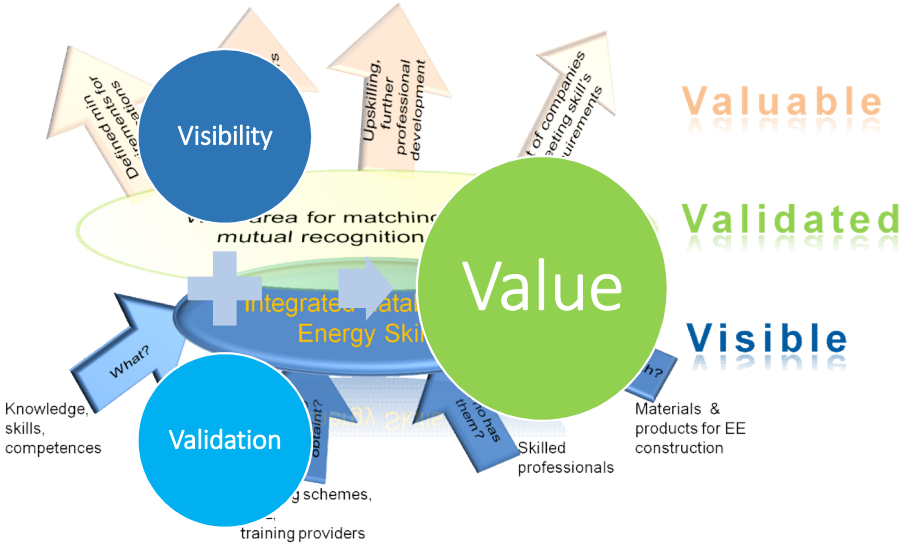
Connecting the three SEEtheSkills objectives

The 3V approach



O1 To make skills **VISIBLE** through whole value chain in building sector by implementing **Integrated register of energy skills**

O2 To **VALIDATE** skills relevance to standardized EE construction and interventions in renovation, by matching and levelling skills and linking them to national and EU qualification standards, to **enable mutual recognition**

O3 To emphasize skills **VALUE** in order **stimulating market demand for energy skills** in design, construction and maintenance of buildings and manufacturing and installation of EE construction materials

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State-of-the-art research on energy skills - Methodology for research

The key areas the research were focused on:

- Skills defined in national roadmaps
- Skills developed as part of previous BUS projects
- The developed training schemes
- The number of trained workers and professionals
- Companies who design and produce EE materials
- Status of Recognition of Previous Learning (RPL)
- Status of demand for energy skills
- Level of awareness of energy skills
- Available certifications
- Legal obligations promoting use of energy skills and their timelines
- Predictions for future development of energy skills

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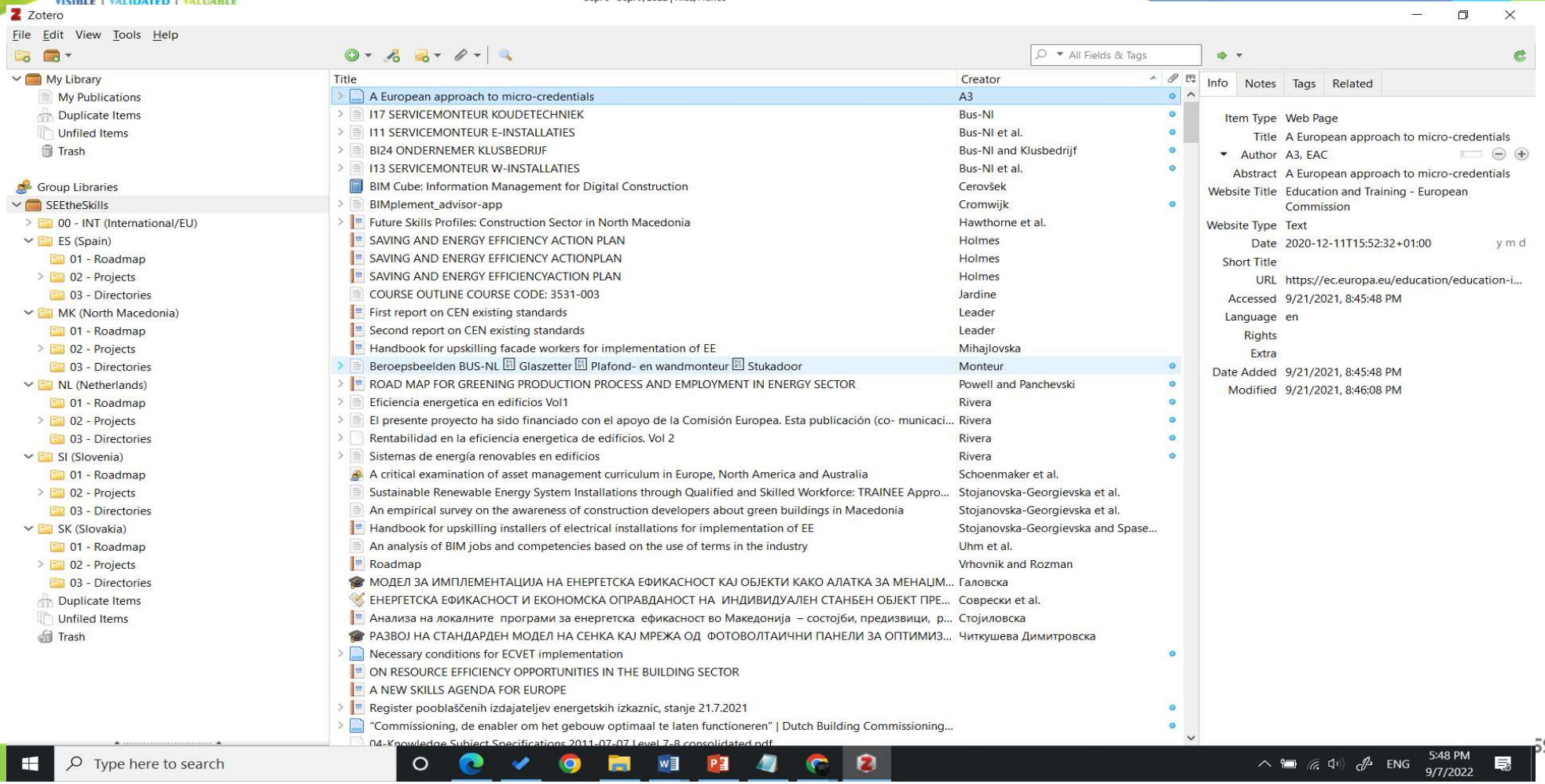

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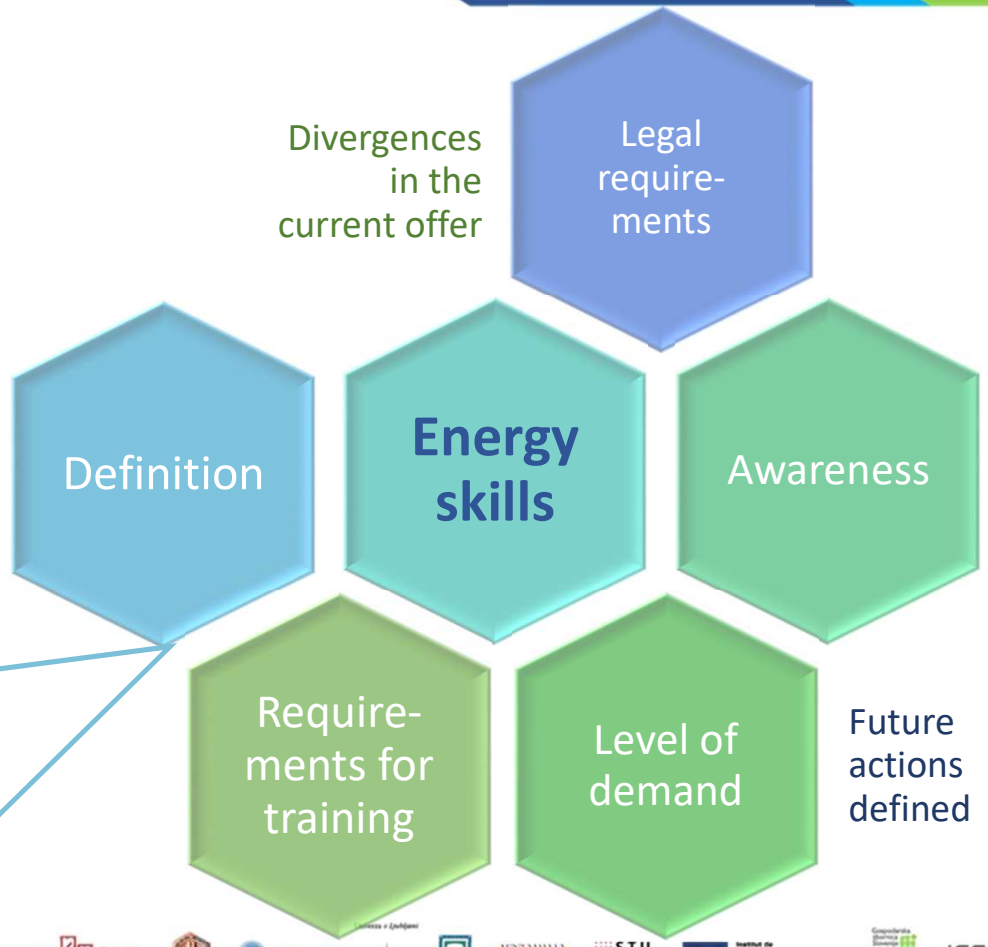
State-of-the-art research on energy skills

- The Results

Identified 5 skills' categories:

- BUILDING FABRIC (façade workers/plasterers, roofers, carpenters, bricklayers, concrete workers, window installers, craftsmen, glazier, flooring, carpentry, chimney builders etc.)
- BUILDING SERVICES (electrical installers, duct fitters installation, ventilation, air conditioning installation, lighting installation, control systems, heating systems installation, HVAC installers)
- ENERGY SOURCES (skills in energy efficiency, installation of Renewable Energy Systems – RES)
- BUILDING MANAGEMENT (foremen)
- MISCELANEOUS (skilled across-the-craft workers)



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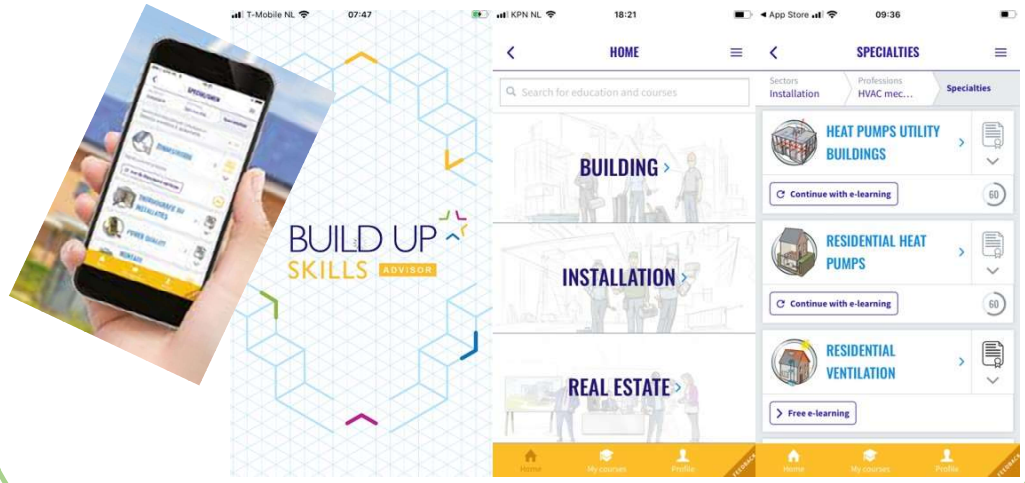
State-of-the-art research on energy skills

- The Results

Available trainings



Divergences in the current offer

Legal require-ments

Definition

Energy skills

Awareness

Require-ments for training

Level of demand

Future actions defined

BIM Academy

ITeC

ISSO

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Lessons learned from surveying EE skills

- Will be presented in the following conference paper to be published by ORE in a specific collection dedicated to Sustainable Places 2022.

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Two different approaches for skills validation

- **e-learning platform**, that will include the following e-trainings in form of webinars created by project partners:
  - -2 webinars on RES qualification
  - -2 webinars on BIM qualifications for blue collars
  - -2 webinars on BIM qualifications for white collars
  - -2 webinars on cross-craft skills qualifications

- **Creation of e-RPL tool.** The process of recognition of previous learning RPL, based on defined steps of identification, documentation, evaluation and certification adjusted as on-line process, including:
  - communication to identify the necessary skills
  - submitting documentation for evaluation
  - evaluation of submitted documents and
  - issuing certification

realized through web-based platform for e-learning. Besides the necessary documents to be filled by the applicants, the tool will include guidelines for explaining the process to ensure successful applications.

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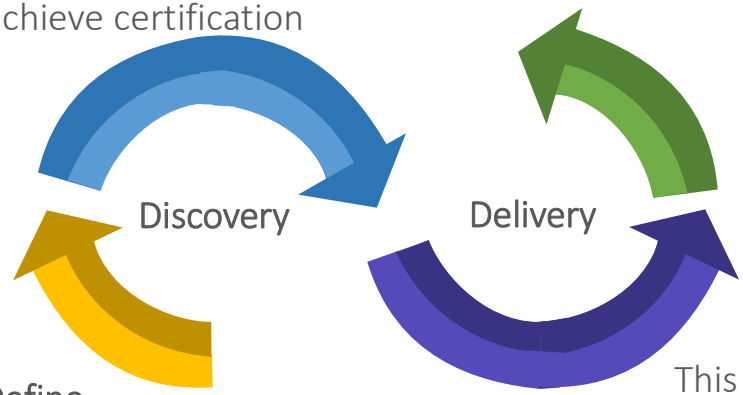
Further actions: The link between energy skills and the quality of construction

2. Validation of skills

Through trainings and through the process of RPL, to achieve certification



4. Promotion of VALUE

The final step is to create an environment for further and sustainable implementation of skills

1. Define

This stage aims at defining the minimum requirements in terms of Learning outcomes

3. Case studies

This stage of the research is dedicated to motivating the use of BIM, for which expressing the value in EE is chosen

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Further actions: The value of energy skills through performance gap

The tools used to express these benefits are usually digital tools like BIM

By using BIM modelling, different scenarios for reduction of performance gap while implementing EE measures can be proposed.

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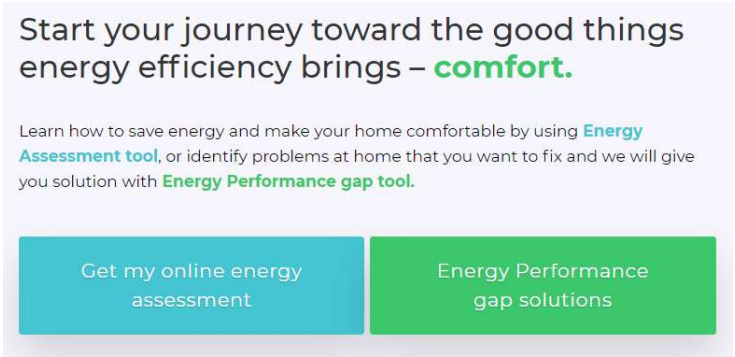
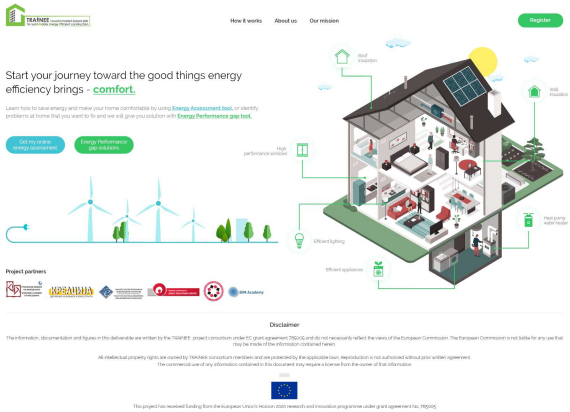
Further actions: The value of energy skills recognized by the owners – POE tool

Post-occupancy evaluation is based on the idea that better living space can be designed by asking users about their needs. Many people associate POEs with a one-time online survey provided to occupants.

- A complete POE includes hard data as well as occupants' satisfaction with the space and comfort. A full post-occupancy evaluation usually examine:
  - energy and water performance
  - performance of the indoor environment—air quality, thermal comfort, acoustics, lighting, and ventilation
  - usability of systems and spaces
  - occupant behavior



http://kh.trainee-mk.eu



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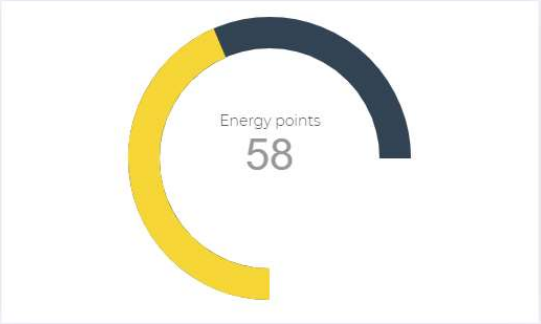
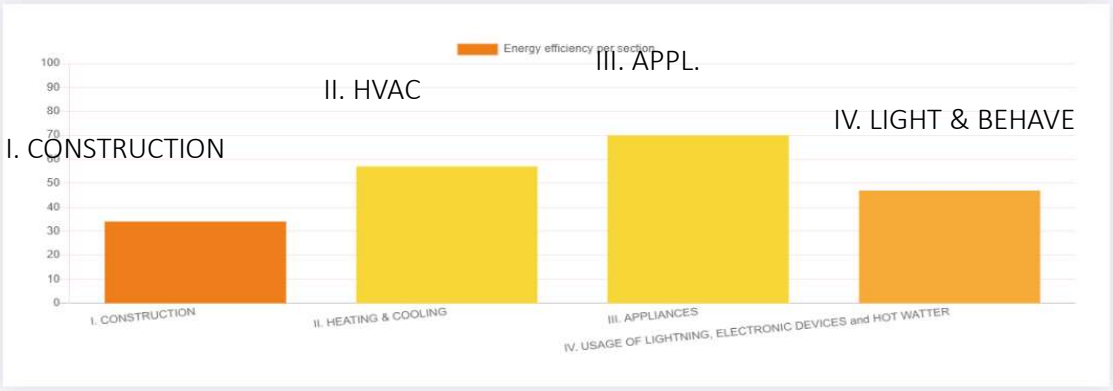
Further actions: The value of energy skills recognized by the owners – POE tool

You might be able to save money by making your home more energy efficient

The energy efficiency of your household is on a medium level and there are a lot of opportunities to increase it.

Companies





Residence Type:
Apartment
Address:
Jane Sandanski
City:
Skopje
Year of construction:
1980
Size in square meter:
90
Occupants:
4
Certification Mark: B

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POE tool - Benefits for different type of beneficiaries

New features

Occupants
- Self-assessment of different systems;
- Early and easy detection of issues
- Connection with "Find my craftsman" database of trained/certified professionals
- Connection with other tools and databases

Design team
- Improvement of the comfort level
- Adjustment possibilities
- New technologies testing

Investors and construction companies
- Building satisfaction
- Comparing with similar buildings
- How and what to improve

Local and national authorities
- Database with building characteristics and occupants behavior;
- Detection of issues in certain buildings and intervent
- Policy and financial instruments development;

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Conclusions

Sustainable offer of Energy skills

Sustainable future

Sustainable construction

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Let's change the workforce to change the sector !!

Thank you

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