21.09.2022 | 12.00 – 13.30 CEST

Leveraging digitalisation and construction skills

towards 2030 energy goals

arise HP4ALL PRO-Heritage CraftEdu INSTRUCT EEthcSkills TRAIN4SUSTAIN BUS LEAGUE nZEB ready

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WEBINAR NOTICES

This session is being recorded

This is an interactive session, please, participate

Please, make sure your microphone is muted

Use the chat function to enter your questions

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AGENDA

12:00 - 12:05 Welcome and introduction. Mariana Fernández, Sustainable Innovations.

12:05 - 12:20 How LIFE Clean Energy Transition is supporting the upskilling of building professionals. Amandine Lacourt, CINEA.

12:25 - 12:50 Mechanisms for matching skills and their validation. Irini Barbero. Research Assistant School of Engineering Cardiff University.

12:55 - 13:15 Digitalisation of construction as necessary step towards a Clean energy transition. Paul McCormack Innovation Manager at Belfast Metropolitan College.

13:15 - 13:30 Q&A session.

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WHAT ARE THE MAIN TAKE AWAYS YOU EXPECT TO GATHER FROM THIS SESSION?

Use the chat to provide your answers!

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EUENERGYWEEK

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EXTENDED PROGRAMME

19-23 SEPTEMBER 2022

Going green and digital for Europe's energy transition

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How LIFE CET is supporting skills in the building value chain

Amandine DE COSTER-LACOURT

Project Advisor LIFE Clean Energy Transition

Climate, Infrastructure & Environment Executive Agency (CINEA)

CINEA in a nutshell

> 58 billion for the period 2021-2027

> 500 staff by 2027

from 2800+ projects managed in October 2021 to > 4500 projects by 2027

- Policy feedback as an essential part of funding activities
- Expertise at the service of beneficiaries in managing the complete lifecycle of projects
- Exploitation of synergies and dynamic ways to work across programmes

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BUILD UP Skills: the journey since 2011

2011-2012	2012-2013	2014-2018	2019-2020	2021	2022
Initial analysis and strategy (National Platforms and Roadmaps)	Training + qualification (national)	Training + qualification (national + EU)	Demand-side measures (procurement, campaigns…)	Updating the strategy	Strategy + training interventions

77 (+ 13) projects funded

49 million euros EU funding

13 European exchange meetings

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Expected impacts/results

- National skills **strategies**
- New or updated **qualification** frameworks and curricula, mutual recognition of skills
- Innovative **training toolbox**: on-site training, e-learning, blended learning, gamified apps…both for 'blue-collars' and 'white-collars'
- **Training** of professionals at all levels of the European Qualification Framework; Training of trainers (target: >25 000)
- Increase **recognition and demand** for skills: e.g. linking skills with procurement, campaigns towards building owners
- **Feeding to policy e.g.** national long-term renovation strategies

Consult the report here

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A changing landscape for building professionals

Life-cycle approach

- Circularity
- Resource efficiency
- Life-cycle Carbon Assessment
- Decommissioning

Digital construction

- BIM
- AR/VR
- 3D laser scanning

Industrialisation

- Pre-fabrication
- Off-site manufacturing

Focus on the occupant

- Comfort/quality
- Indoor Environmental Quality

Smart buildings

- Interoperability
- E-mobility

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LIFE Clean Energy Transition (CET) 2021

Focus: rebooting the National Qualification Platforms, update the Status Quo Analysis and the National Roadmaps

Results: selected projects expected to cover the following countries (if grant preparation finalised sucessfully):

Austria
Bulgaria
Croatia
Czech Republic
France
Greece
Hungary
Ireland
Lithuania
The Netherlands
Poland
Romania
Slovakia
Spain

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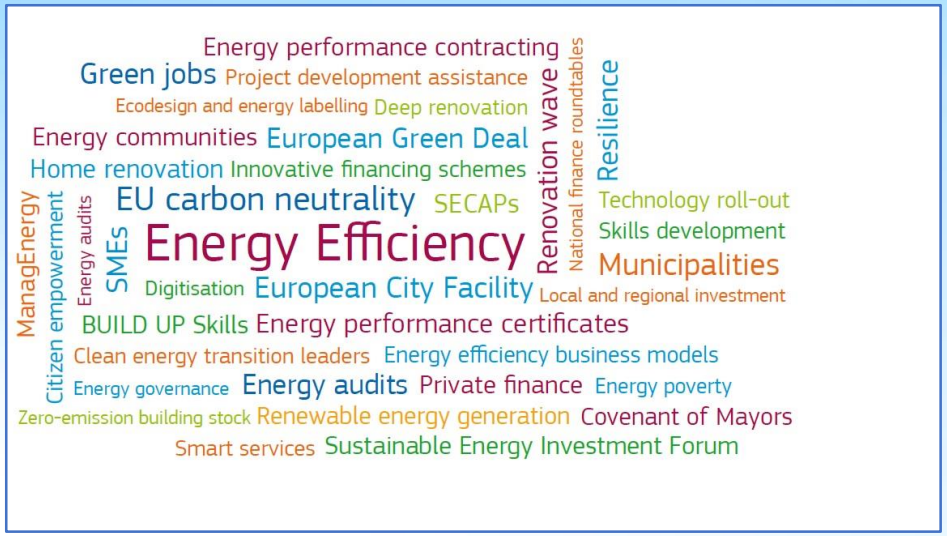
LIFE CET Call 2022



- Deadline 16 November 2022
- **EUR 98m** available for grants
- 18 topics open
- Coordination and Support Actions (Other Action Grants)
- **95% co-funding rate**
- Apply electronically via the EC's Funding & Tender opportunities portal
- Topic LIFE-2022-CET-BUILDSKILLS - BUILD UP Skills - Strategies and training interventions enabling a decarbonised building stock

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Scope A: Rebooting the BUILD UP Skills National Platforms and Roadmaps

- Expected project duration: **18 months**
- Indicative EU contribution/project: **EUR 0.4 million**
- Expected: **single-country applications** - **one action per country**
- Proposals may be submitted by a **single applicant from an eligible country**

Objectives (extracts)

- support the **revitalisation of the National Platforms** created in the first phase of the BUILD UP Skills initiative (2011-2012), gathering all key national stakeholders […] expanding their scope by involving new stakeholders.

- **update the Status Quo Analyses and National Roadmaps** to reflect the new realities of the building sector […]

Not legally binding

Scope A: Rebooting the BUILD UP Skills National Platforms and Roadmaps

Scope (extracts):

- Demonstrate a good knowledge of **BUILD UP Skills**
- Support the work done within the **European Construction Blueprint**
- **Broad coverage:** all relevant skills needed to enable the Clean Energy Transition
- Address **'Blue-collar' and 'white-collar'** professionals (EQF levels 1-8)
- Relaunching of the **National Platform** through dedicated communication channels and regular meetings
- **Updated Status Quo Analysis:** market research, interviews, workshops
- **Updated National Roadmaps** including measures to 2030 and policy recommendations; **endorsement** by relevant national stakeholders

Not legally binding

Scope B: Upskilling and reskilling interventions enabling a decarbonised building stock

- Indicative EU contribution/project: **EUR 1 million**
- "Applications by a single applicant or applications covering a single eligible country are not considered appropriate under scope B. Therefore, the Commission considers relevant that consortia gather a minimum of 3 applicants from 3 different eligible countries."

Objectives (extracts):

- Increase the **number of skilled building professionals** at all levels of the building design, operation and maintenance value chain.
- Upgrading existing **training and qualification schemes** or developing new ones.

Not legally binding

Scope B: Upskilling and reskilling interventions enabling a decarbonised building stock

Scope (extracts):

Addressing skills development for **one or several** of the following focus areas:

- **Deep renovation**
- **(nearly) Zero Energy Buildings**
- **RES + efficient heating and cooling technologies; heat pumps**
- **Whole life carbon, circular construction, resource efficiency**, **Level(s)**…
- **Digital skills** (e.g. BIM)
- **Building smartness** (e.g. SRI, sensors, building controls and building management systems)

Not legally binding

More information

- Consult our website: https://cinea.ec.europa.eu/programmes/life/life-calls-proposals_en
- Consult the Frequently Asked Questions
- Write to: CINEA-LIFE-CET@ec.europa.eu

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Discussion 1
Mechanisms for matching skills and their validation

Moderator

Irini Barbero

Research Assistant School of Engineering
Cardiff University

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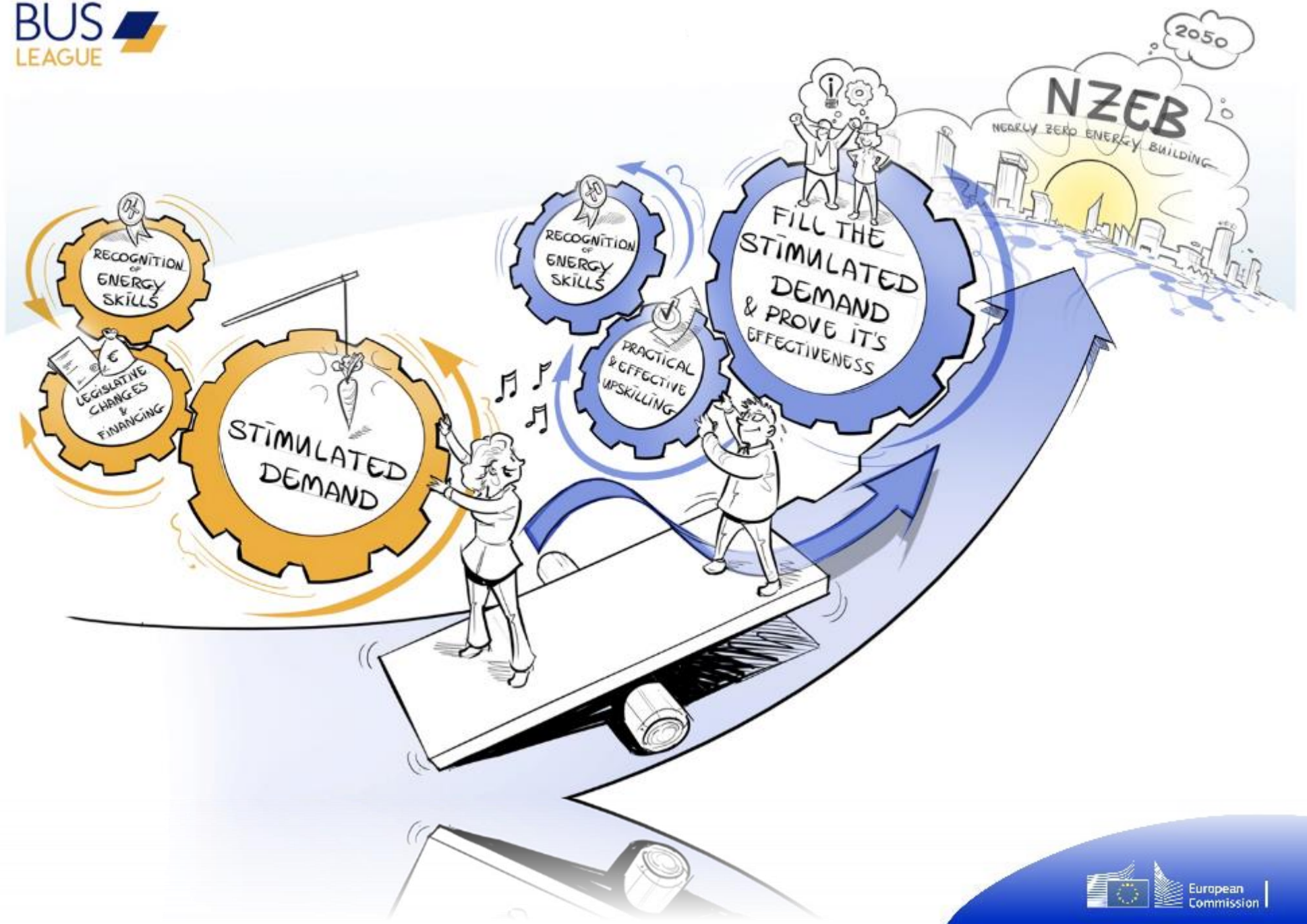
1. Jan Cromwijk - **BusLeague / BusGoCircular**
2. Jiří Karásek - **CraftEdu**
3. Padraic OReilly - **HP4ALL**
4. Irini Barbero - **INSTRUCT**
5. Lihnida Stojanovska-Georgievska - **SEEtheSkills**

Need for skills validation



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Why task-based Unit of Learning Outcomes?

ULOs are statements regarding what a learner knows, understands and is able to do (including responsibility) on completion of a learning process, which are defined in terms of knowledge, skills and responsibility (attitude).

Clear Learning outcomes for development of training materials

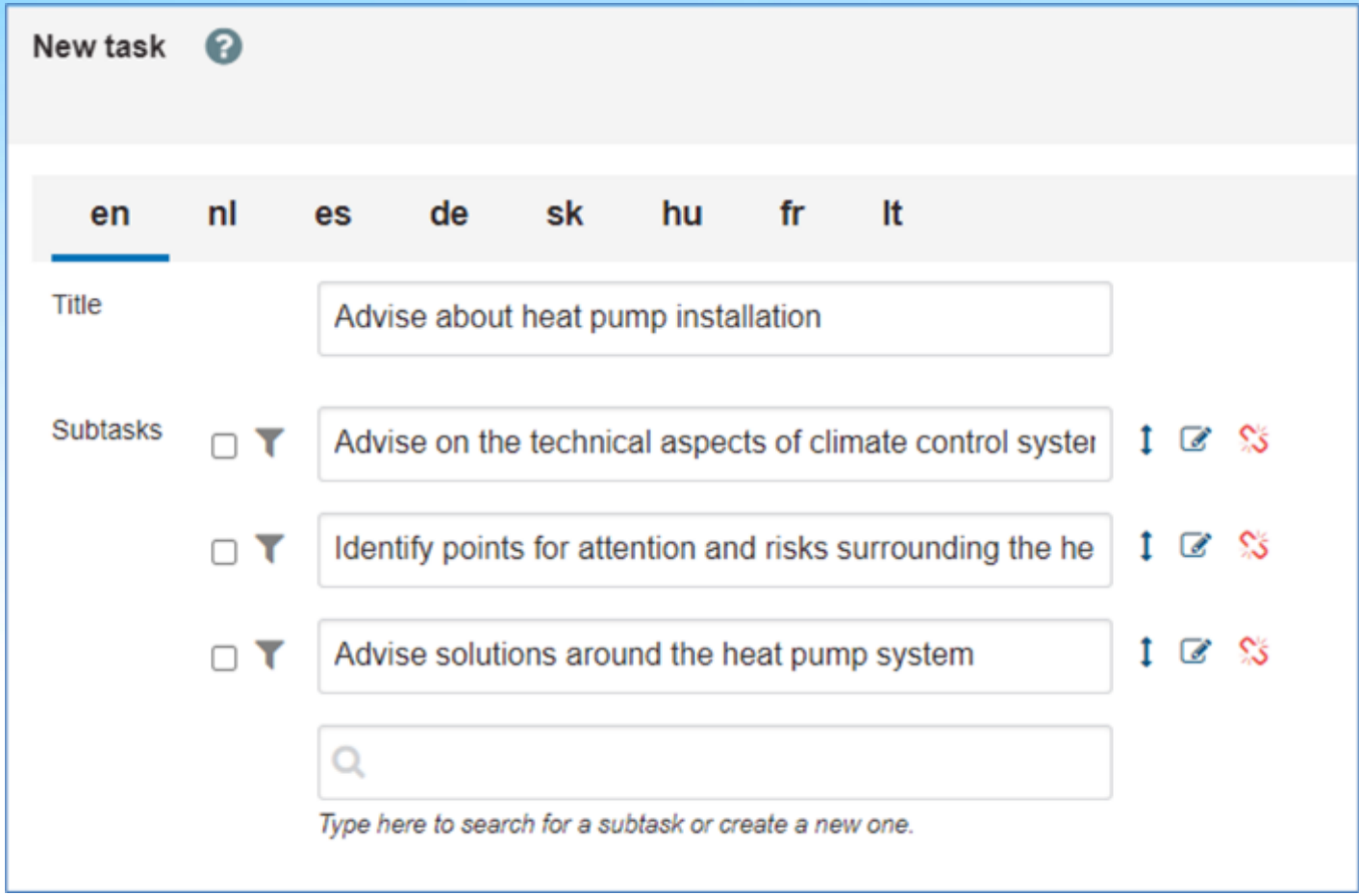
Practical perspective on required skills in the valuechain & required overlaps between actors

Increased recognition of learned skills

Flexible for future improvements such as alternative refrigerants

How do task based ULO's work?

Tasks and subtasks addressing all phases in construction covering the whole valuechain



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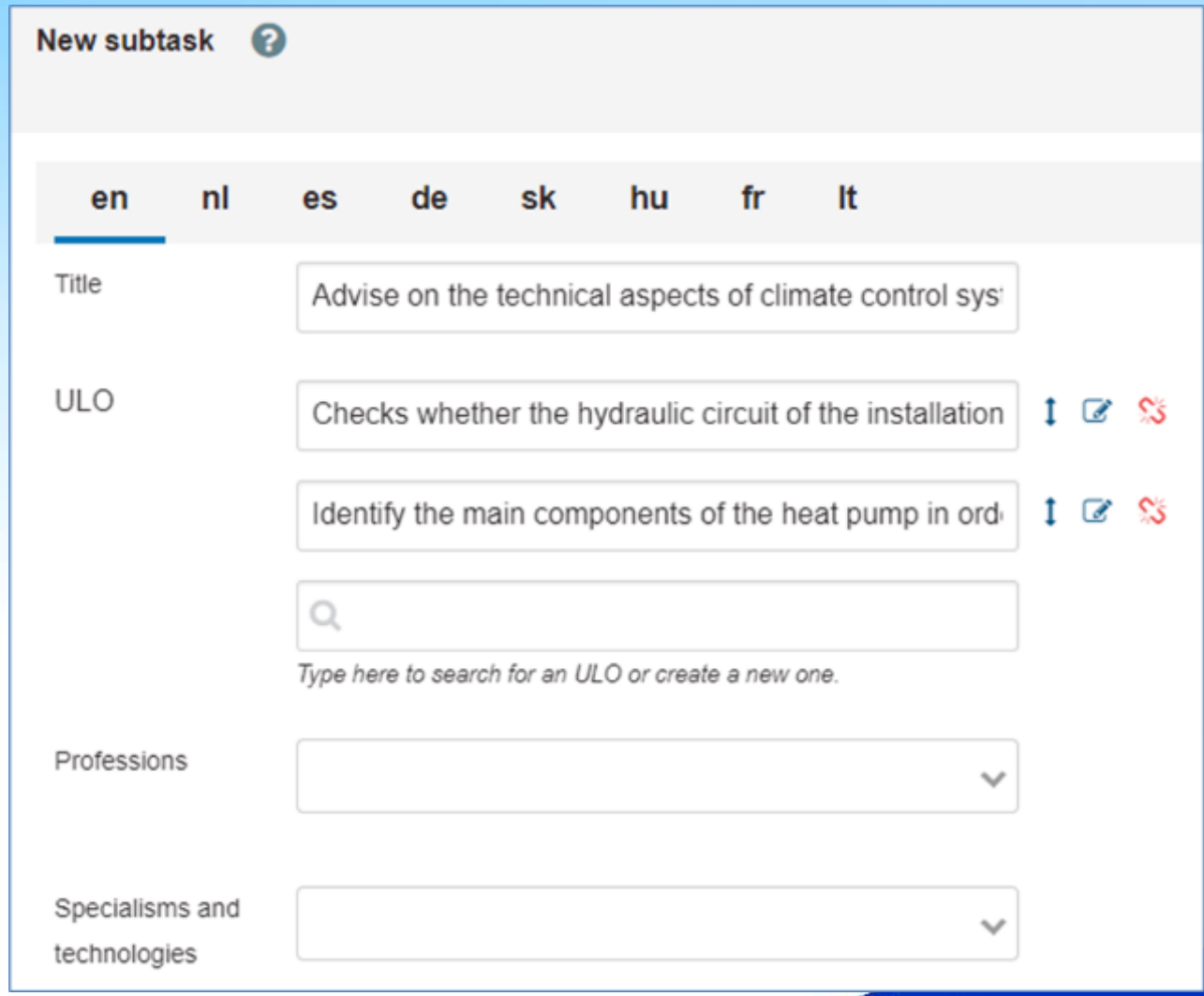
How do task based ULO's work?

BUS LEAGUE

Learning goals related to the subtask



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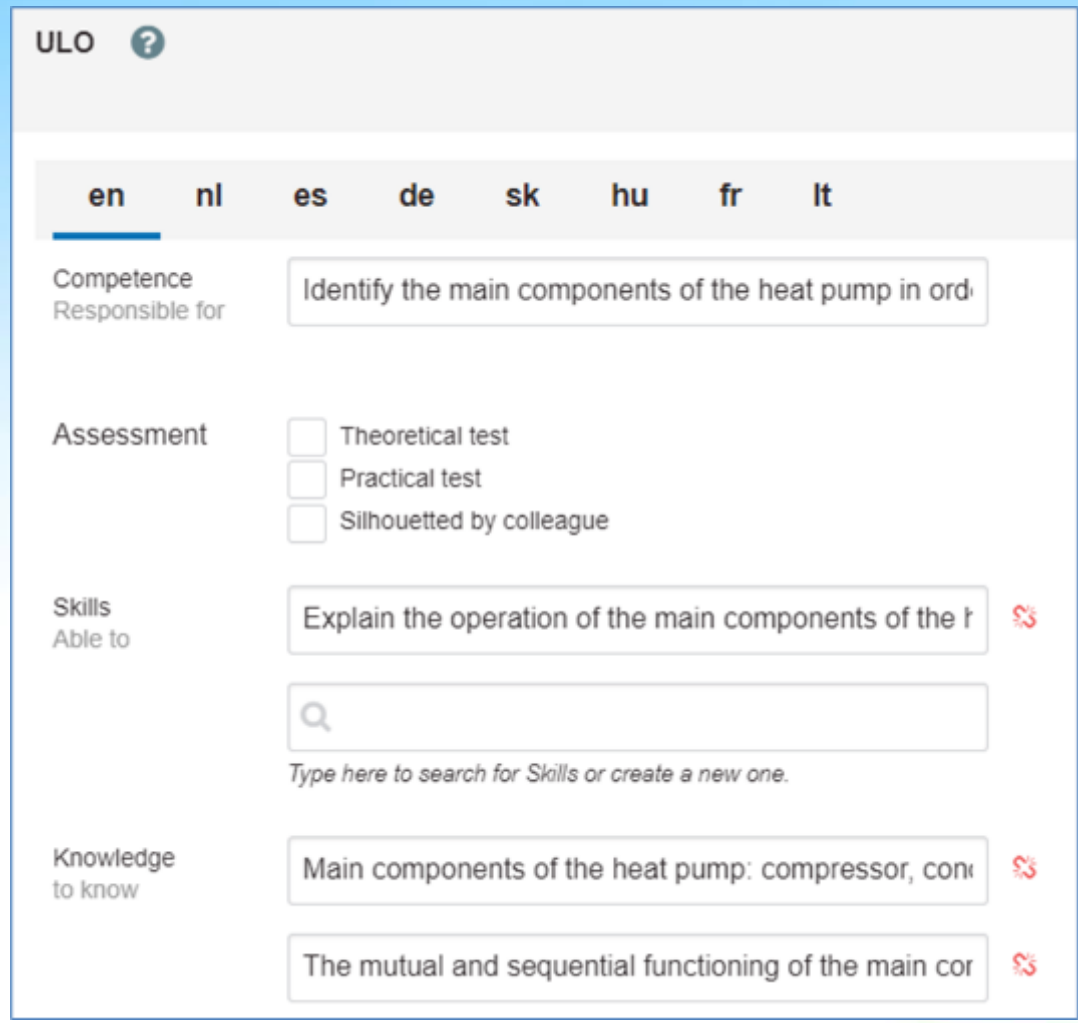
How do task based ULO's work?

What competence is expected for performing the subtask?

What skills does one need to be competent in the subtask?

What Knowledge does one need to apply skills for showing competence with regards to the subtask?



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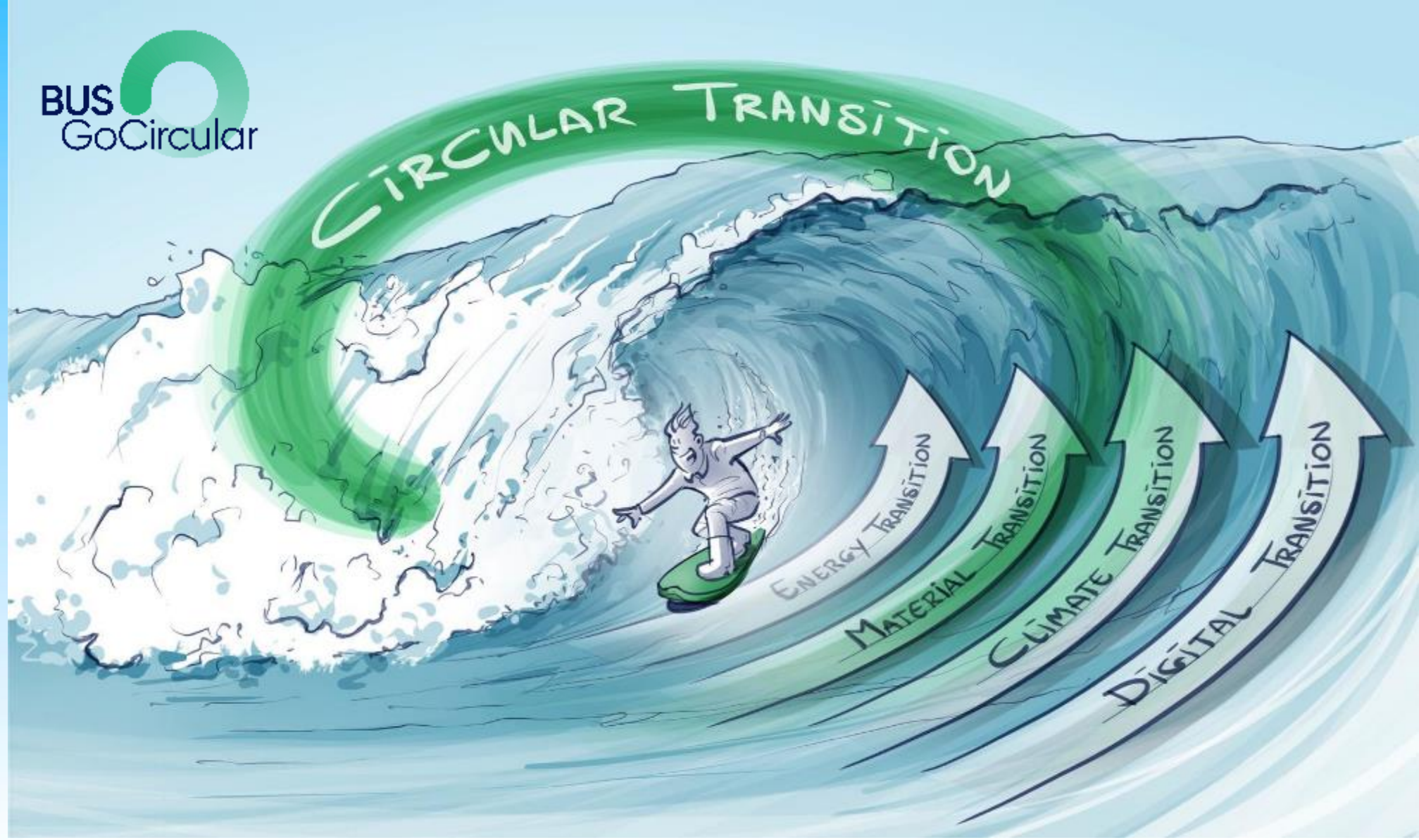
Another need for skills validation



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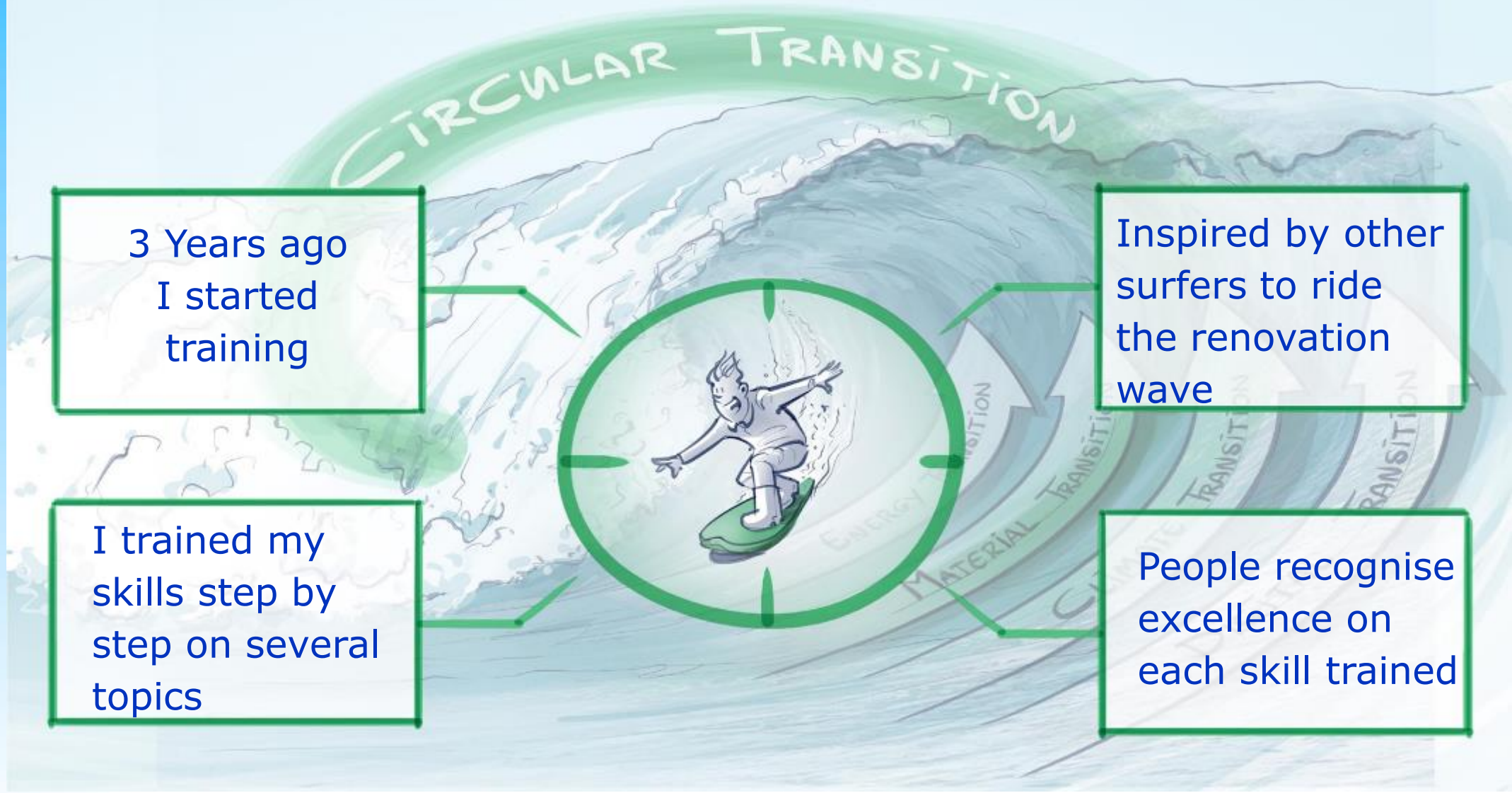
BUS GoCircular



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https://www.youtube.com/channel/UCXu4Rjs5WDXBE-yqda5kt5A

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Colophon

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BUS GoCircular

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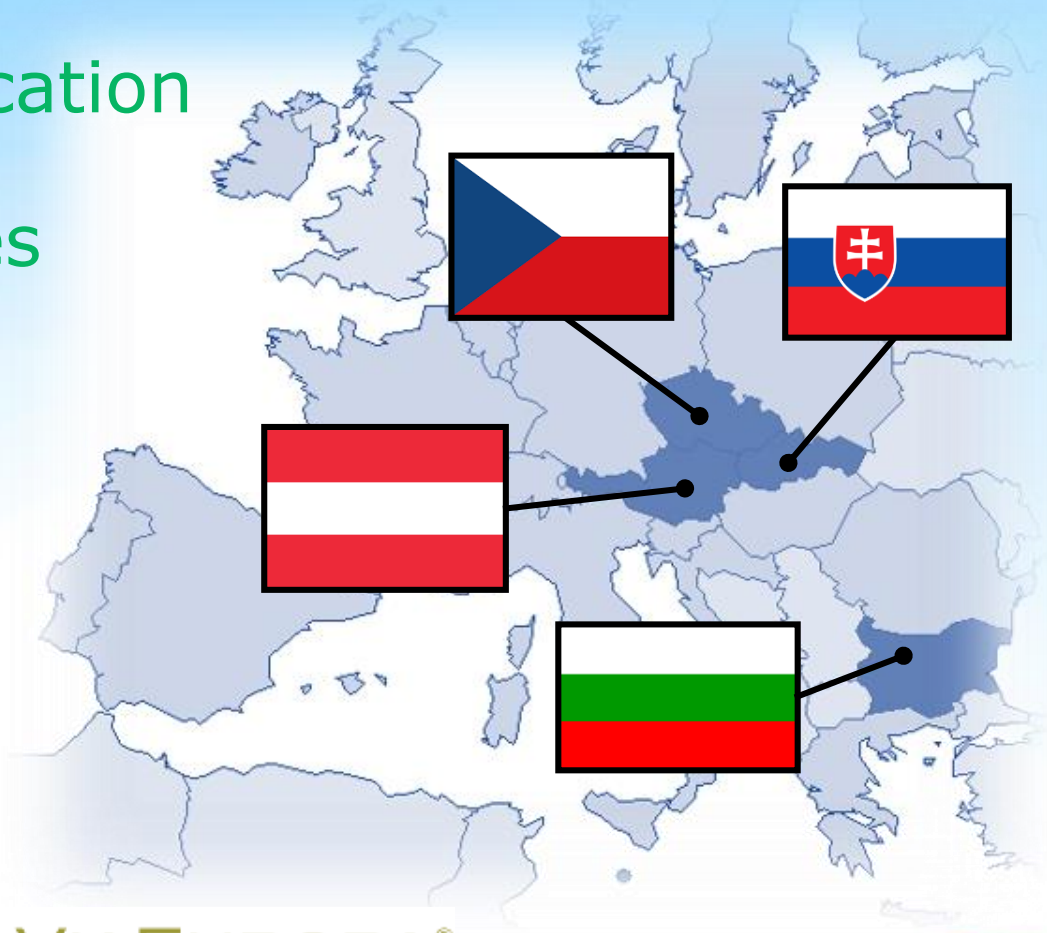
CraftEdu

Setting up National Qualification and Training Schemes for Craftsmen in Four Countries



Innovative qualification and training programmes

- for craftsmen and construction workers
- in the energy efficiency and the use of renewable energy in buildings.

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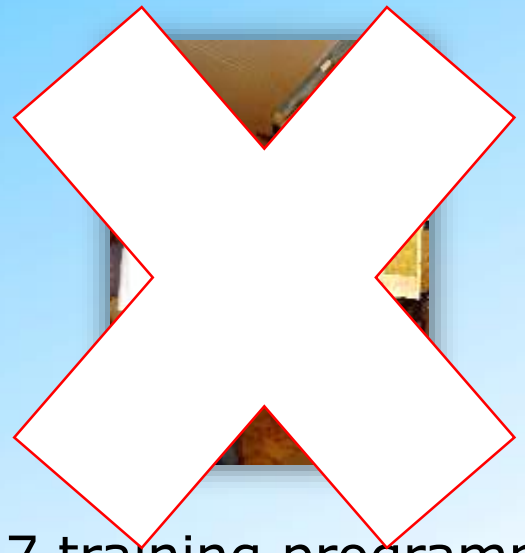
CraftEdu

Training related goals



- 7 training programmes
- On-site training course
- In-class training courses
- 30 Trainers
- 511 Training participants
- 7 496 Happy students
- Development of database
- E-learning programme

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32 hours per profession

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CraftEdu

Course database - Switch to digital

16 videos
37 videos

6 Teacher's books
6 Student's books

https://database.craftedu.eu/

23 Online training courses
33 E-learning courses

7 days covered by recorded webinars

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CraftEdu

Results and expectation

- Full transformation into digital
- Increased outreach and flexibility (modularity reached)
- Platform ready for future (involvement of new teachers, new schools and training centers)
- Higher sustainability of the results

More information on the project website:

www.craftedu.eu

www.svn.cz

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HP4ALL PROJECT

INCREASE THE DEMAND FOR HEAT PUMP SKILLS

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MECHANISM 1 SCOP DATABASE

- Energy Monitoring of heat pumps for SCOP and installer validation
- Each installation requires an electrical meter and a heat meter to calculate SCOP of unit
- Each Plumber must show evidence of installations, using SCOP of previous installations
- The higher the average of SCOP the more competent the install company

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MECHANISM 2 BUILDING PASSPORT

- A special physical folder / digital database that lists the retrofit measures and building information
- Containing the building plans, the electrical plans, heating system plans, building fabric information and information of each building element
- This will also help with retrofitting as the information for calculations are available immediately

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MECHANISM 3 NZEB PASS

- Similar to health and safety requirements for site work (Safe Pass)
- Workers are required to complete NZEB Fundamentals training
- Advanced passes can be issued when further NZEB training is completed

MECHANISM 4 LIFELONG VALIDATION

- A process for lifelong construction workers that do not have the requirements for grant applications to prove their expertise and be verified as a skilled worker.
- Database of skilled workers in regions that can be accessed by end-users

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MECHANISM 5 COMPANY & TRAINING CENTRE

- Create links between Construction Companies and NZEB training centres
- Training centres can provide low level knowledge for General operatives or recently joined staff
- Provides a pathway for people to diversify their career or change careers

Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young.

Henry Ford

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MECHANISMS FOR MATCHING SKILLS AND THEIR VALIDATION

INSTRUCT

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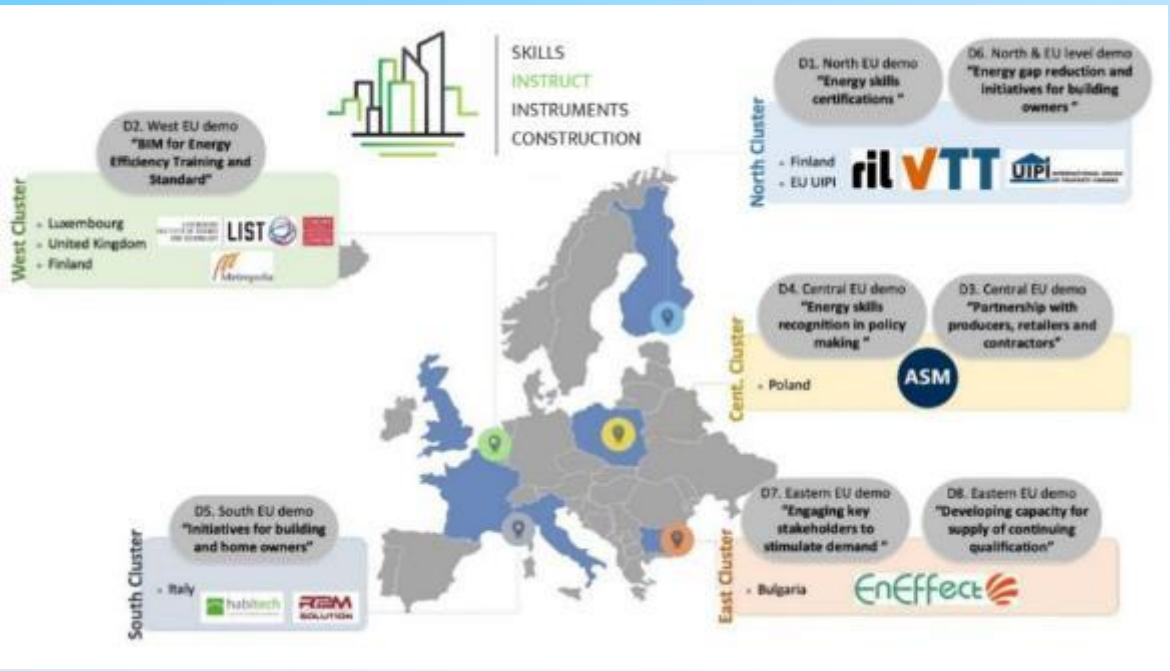
CURRENT SITUATION OF TRAINING IN THE CONSTRUCTION SECTOR

- **Multiple entry points**, a plethora of qualifications, a wide variety in the quality of training provision, and complex funding options.
- Fall in apprenticeship completions due to **difficult economic conditions**.
- **Low training and development activity** driven by the high number of **self-employed tradesmen** who often face an **'earn or learn' dilemma.**
- The **transient nature of the workforce** and the evolving training demand of the industry deterring employers from investing in staff training.
- **Lack of career planning** and the **tendency to adopt a supplier** as opposed to a demand driven model.
- **Lack of strategic approach** to Continuing Professional Development (CPD) and Continuing Craft Development across the industry.

CURRENT KEY BARRIERS TO TRAINING IN ENERGY EFFICIENCY IN THE CONSTRUCTION SECTOR

- **Economic barriers** (industry operating with tight financial margins, resulting in lack of time for, and investment in, training)
- **Legal barriers** (lack of an EU-wide Legislative framework stimulating the demand for energy skilled construction workers/professionals)
- **Market barriers** (low demand, recognition, and certification measures of skills for energy efficiency)
- **Knowledge barriers** (lack of support for experience and best practice sharing across the industry).

PROJECT OBJECTIVES



- **Elicit quantitative and qualitative evidences** that corroborate and reinforce the **correlation between skills and education** and **energy performance and quality.**
- Pave the way to a **set of tools and instruments** facilitating the **mutual recognition of energy skills and qualifications** in the construction sector.

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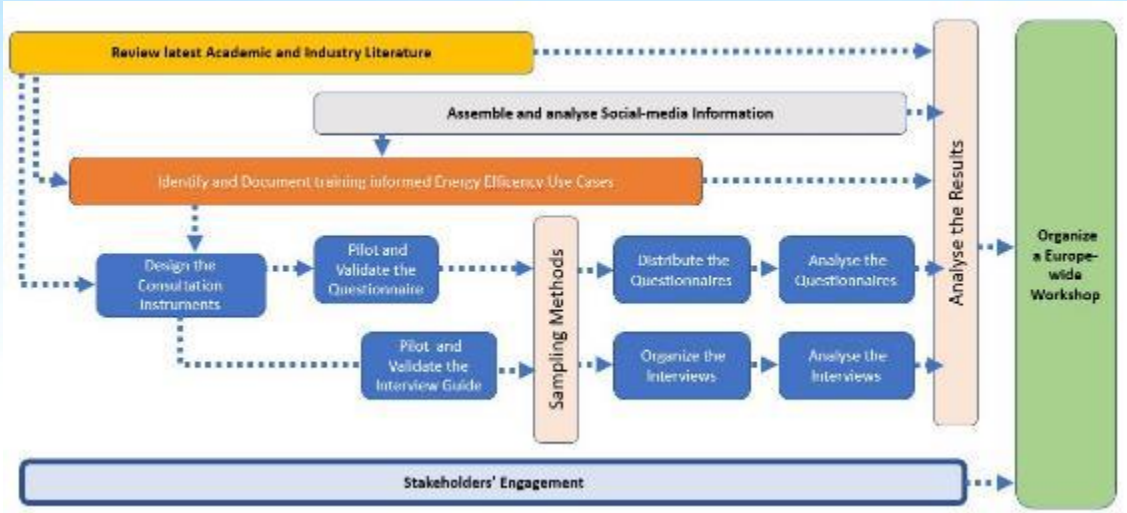
PROJECT OBJECTIVES

- Carry out **real-world demonstrations** (in 5 geographical European areas) of the **usefulness and ease of use of the deployed instruments** for recognition of energy skills and qualifications.
- Deliver **dissemination and awareness raising actions** in consortium members countries, scaled up to the wider Europe.
- Pave the way to **new legislative frameworks** enabling reliance on skilled workers in public / private procurement



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OUR INSTRUCT OVERALL APPROACH AND VALUE PROPOSITION

KEY RESULTS

A **one-stop-shop platform** (http://www.energy-education.com/) for training in the construction industry, powered by **Blockchain technology**. The platform involves an ensemble of services, including:

1. **Course certification for training providers** supported by clear **learning outcomes**.
2. **Passports/registers** for workers recognized at EU level certifying their qualifications, skills and training portfolio.
3. Awareness raising of **new legislative frameworks** or public procurement practices.
4. Promoting and disseminating **initiatives for home and building owners**.
5. Promoting **new partnerships with producers and retailers.**

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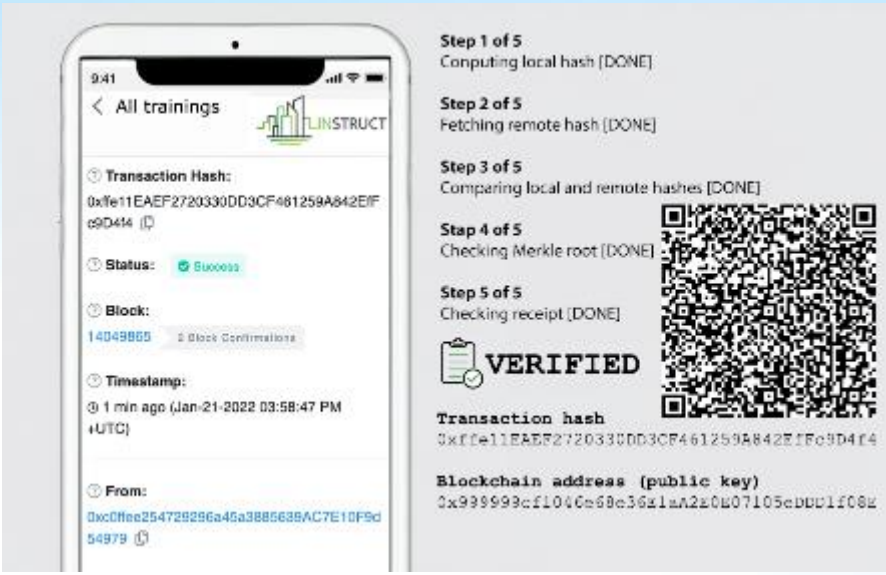
OUR INSTRUCT OVERALL APPROACH AND VALUE PROPOSITION

UNIQUE VALUE PROPOSITION

A **trusted platform** providing **easy and structured access** to **adapted and up-to-date training** in energy efficiency, aimed at the **entire supply chain** and across the **whole lifecycle**, with the potential to assist the European Union to achieve its **energy and carbon reduction targets**.



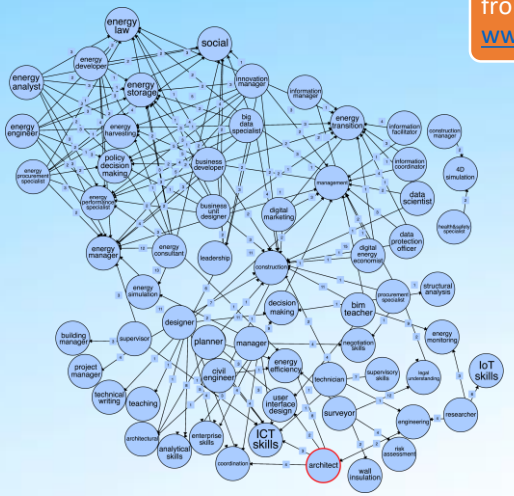
MARKET/ AUDIENCE THAT IS BEING TARGETED

INSTRUCT is targeting the **training market** across the entire spectrum (**lifecycle** and **supply chains**) of the construction sector. As such, the market audience is the **construction value chain**, including community of users / stakeholders (i.e., design practices, engineering organisations, contractors, facility managers, as well as training providers, training associations, trade organisations, and more).

RELIANCE ON NATURAL LANGUAGE PROCESSING FOR SKILLS IDENTIFICATION

Step 1	Roles and skills identification process
Step 2	Scalable heuristics social media minding and expression-based analysis
Step 3	Social media content crawling
Step 4	Regular expression and pattern matching analysis
Step 5	Roles and skills from crawled social media
Step 6	Consolidated list of roles and skills

Main phases for Skills Identification



A Taxonomy of Skills

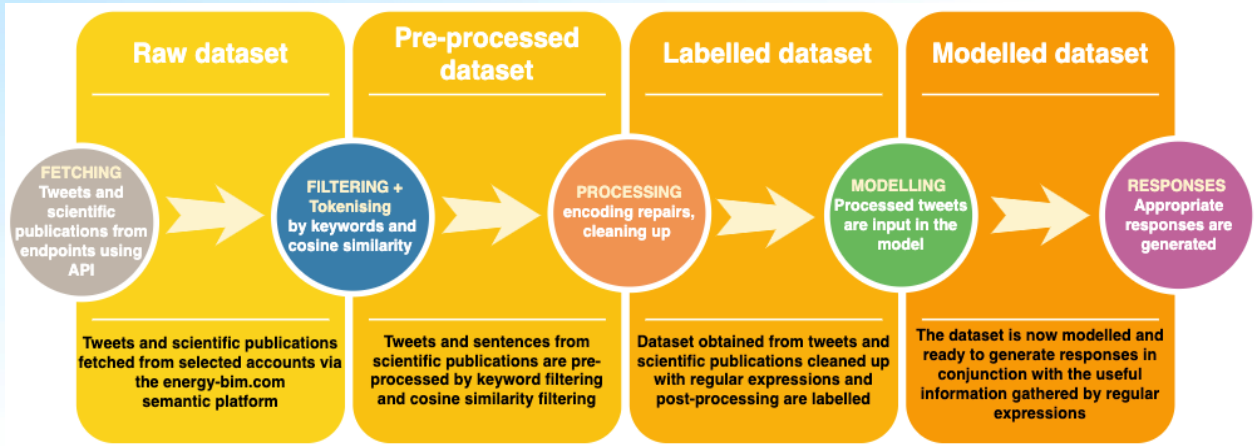
We have used forensics algorithms to determine what companies from the field of BIM and Energy Efficiency and energy are visiting the www.energy-education.com platform.

We have identified other key twitter profiles and followers relevant for our analysis such as: @EU_EASME and @H2020EE

We have identified twitter followers of several accounts, including the @BIMEETEU account

TOTAL: We have fetched a total of 40 millions tweets with text associated and description based on which we conduct text analysis and expression mining for determining skills and roles for BIM for energy.

Our sources of information for Tweets Collection



Tweets collection process

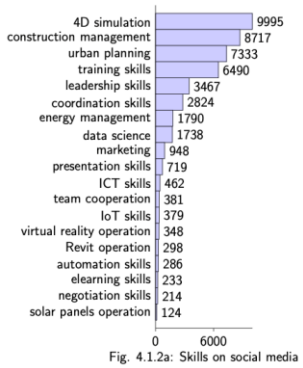


Fig. 4.1.2a: Skills on social media

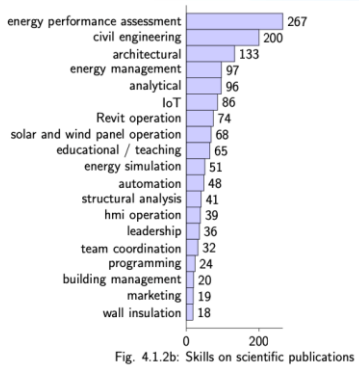


Fig. 4.1.2b: Skills on scientific publications

Example of Identified Skills

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USING A PARTICIPATIVE APPROACH FOR SKILLS MATCHING AND VALIDATION

- Full reliance and compliance with the **European Qualification Framework.**
- Use of a **participative approach** to validate **skill gaps**, **training needs** and **learning outcomes**, as summarized in the two-staged approach summarized below.

(a) Stage 1: Inferring **skill gaps, training needs, and related learning outcomes** across the 5 value chains associated with our demonstration projects.
(b) Stage 2: Interviews with **training providers** across participating countries **to (i) validate existing learning outcomes and their EQF Level, and (ii) propose new learning outcomes informed by outcomes from Stage 1 consultation.**

Stage 1: Engaging with the Local value chains to elicit the following questions:

- What is your role in the project value chain?
- How could you do you enhance needed new skills or competence at the project level on energy-efficient and sustainable interventions?
- Do you feel you have enough methods to require skills and competence (like verifying skills during tendering or having a development phase in the procurement process)?
- What type of methods do you know or have used?
- Do you feel you need more training on the requirements methods for service providers about the skills and competence in energy-efficient and sustainable interventions?
- Do you face any skill gaps in the delivery of energy-efficient and sustainable interventions?
- Can you elaborate on these skill gaps and the ways in which these are addressed on projects?
- Have you relied on training to address these skill gaps by upskilling your staff?
- Are you satisfied with the training outcomes of your staff?
- What are the learning outcomes acquired by your staff which helped address the above skill gaps? (What are the skills (use of tools) , Knowledge (know-how of the content and theory), or autonomy/responsibility (ability to act at task level and apply skills and competence)
- Has the process of reducing energy skill gaps increased the profitability of your organization? On the same note, has the process of reducing energy skill gaps and energy skills increased the added value of your organization?

Stage 2: Consulting training providers
The consultation involved interviews where training providers are asked to validate the identified skills and Learning Outcomes.

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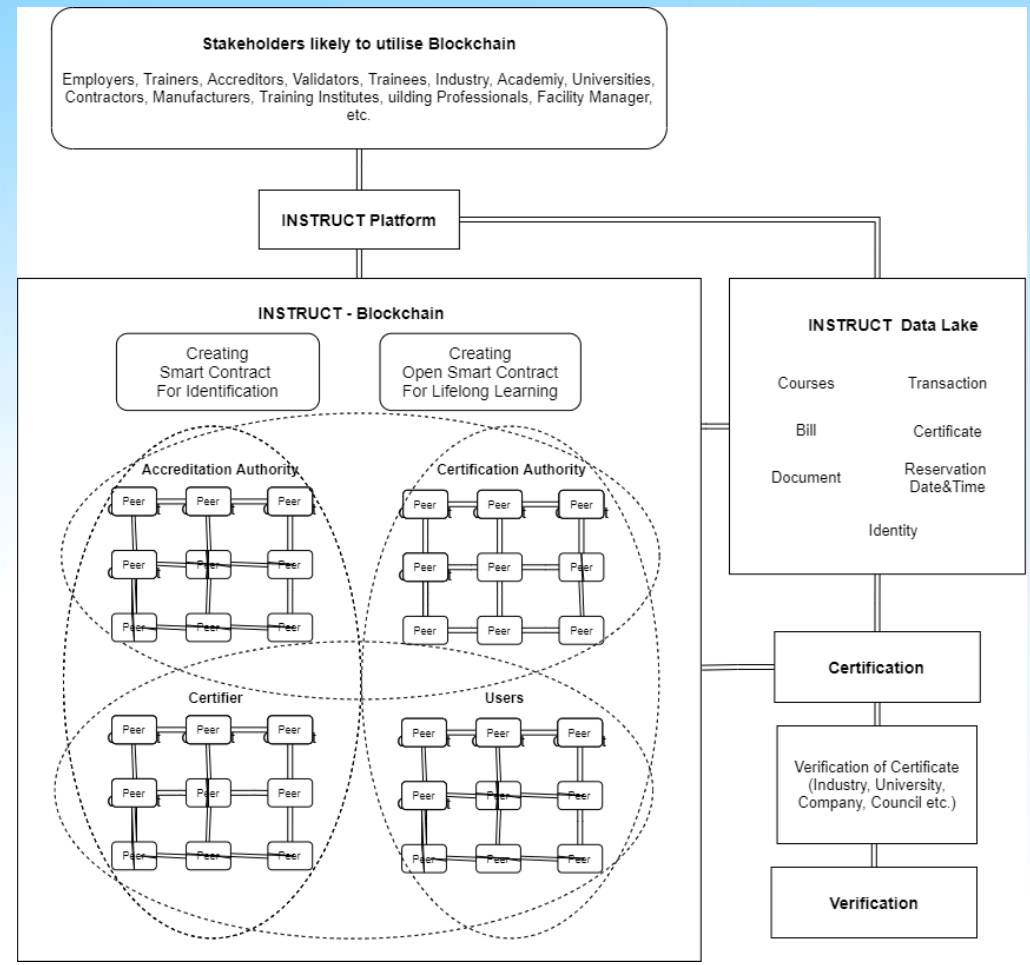
RELIANCE ON BLOCKCHAIN FOR EU-WIDE SKILLS RECOGNITION

Training labelling in Blockchain can **enable users** to monitor and control energy efficiency training with **appropriate labeling**, which is applied in **accordance with the regulation and standards.**

- **Blockchain** and **IoT-based** technologies can enable the education sector to **transition** seamlessly to full compliance with new labeling requirements and can give the **construction stakeholders** the ability to receive, send and monitor data.
- When the **registration** has been completed successfully, the user will have a **list of the trainings** in the **platform**.
- Gained **skills** will be shared on the **Blockchain network**



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KEY INSIGHTS

LESSONS LEARNT

1. **Understanding skills and training needs** to adapt to an evolving and dynamic landscape characterised by continuous technology evolution and the need for adapted and tailored training for the construction workforce.
2. Need to **continuously update current skills and** course offerings to **adapt to the dynamic nature of training and technology / business processes evolution.**
3. **No "size-fits-all" approach** - Need to provide **adapted and continuous training to users** based on their profile, i.e., qualifications, skills, and work requirements.

GOOD PRACTICES

The platform (http://www.energy-education.com/) could be used as a vehicle for knowledge, experience, and best practice sharing within organisations, across projects and beyond, in the construction industry.

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https://instructproject.eu/

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MECHANISMS FOR MATCHING SKILLS AND THEIR VALIDATION

APPROACH AND ACTIONS

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SEEtheSkills project summary

Grant Agreement (GA) No: 101033743

Title: Sustainable EnErgy Skills in construction: Visible, Validated, Valuable

Starting date: 01 June 2021
End date: 31 May 2024

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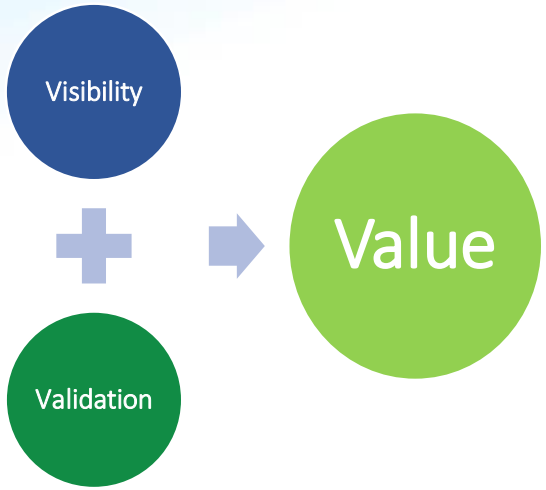
Overall objective:
Challenging market acceptance and acting toward stimulation of demand of energy skills in construction through a **novel 3V approach**, to support need for energy efficient construction of new and renovation of existing building stock



Project partners:
10 partners
5 countries

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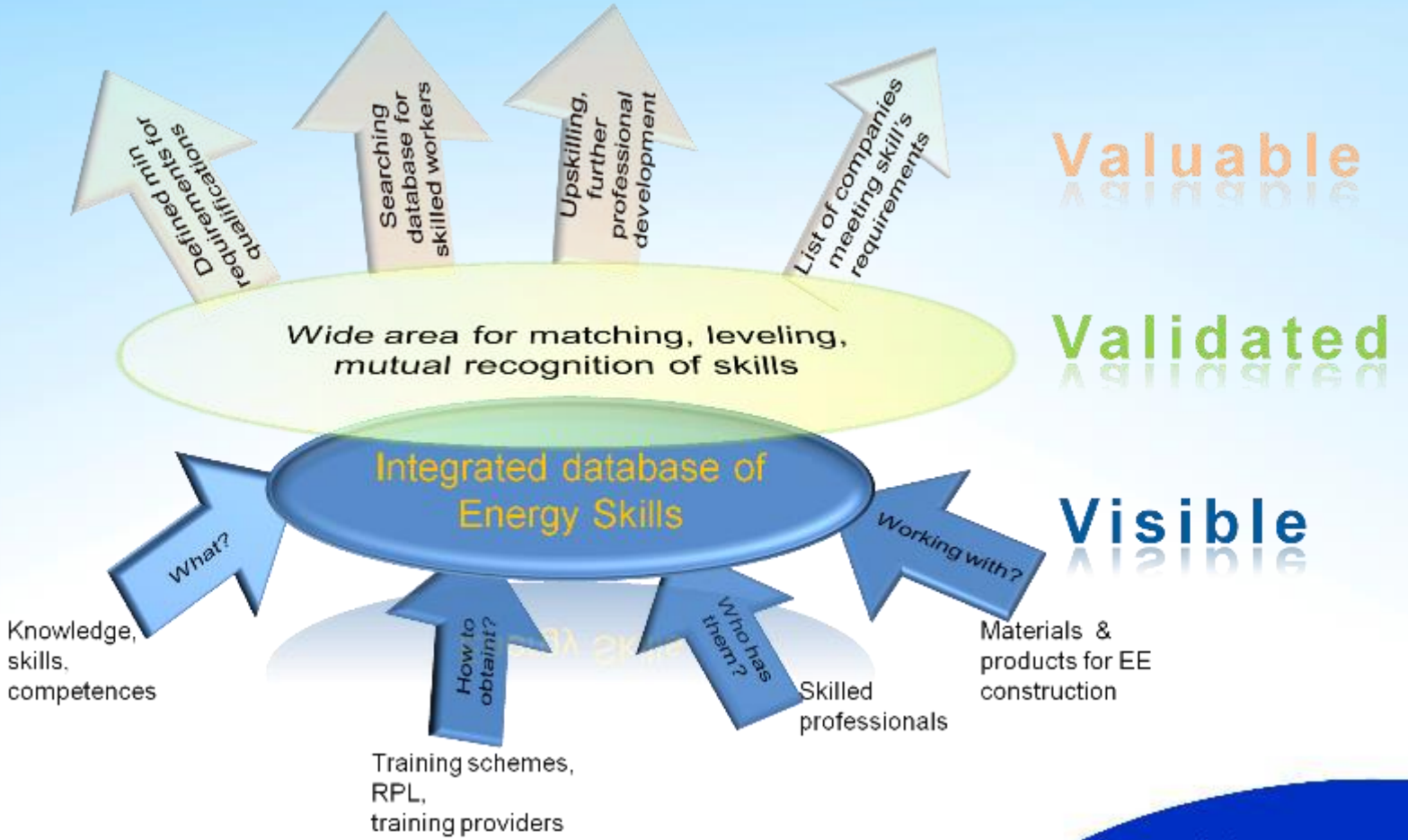
SEEtheSkills approach for raising the value of energy skills

Concept and approach

Creation of Integrated database of Energy skills to serve as a wide area for matching, leveling and mutual recognition of skills



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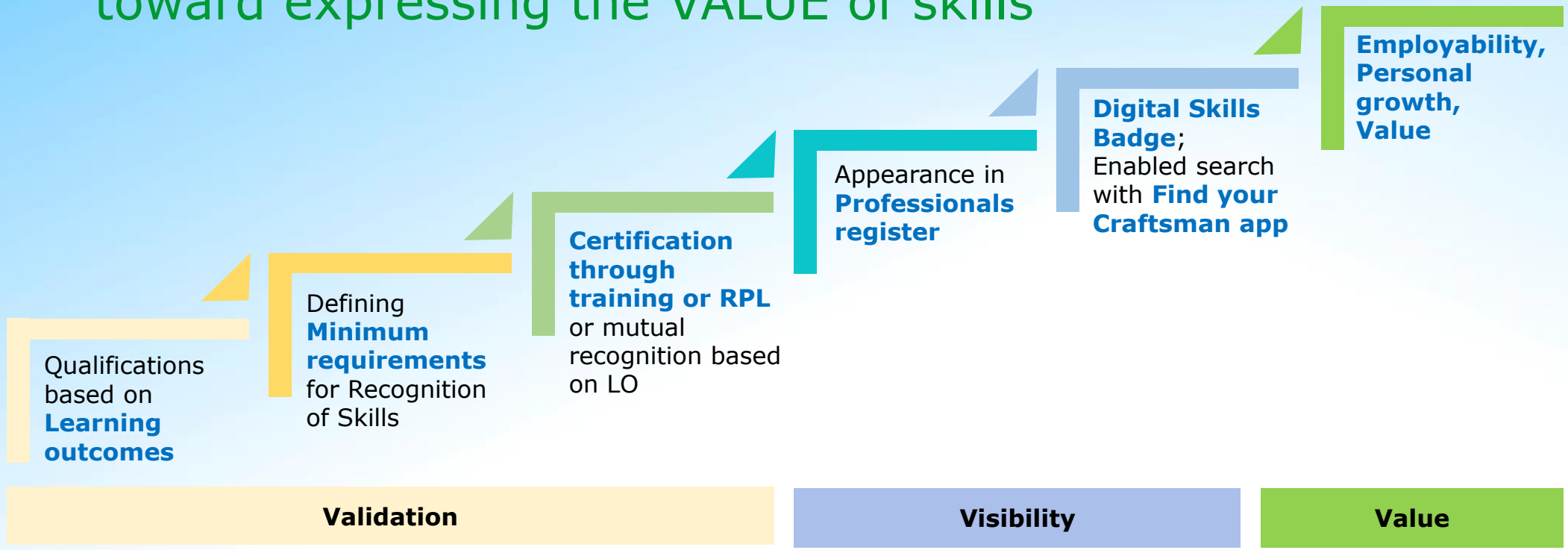
SEEtheSkills approach for raising the value of energy skills

SEEtheSkills creates steps toward expressing the VALUE of skills



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SEEtheSkills specific actions for matching and validation of energy skills

The specific work in order to reach the 2nd project Objective – VALIDATION OF SKILLS will result with creation and implementation of different tools that will facilitate levelling of skills and matching them toward **predefined occupational standards**.

Specific project goals are:

- To define minimum requirements for mutual acceptance of EE qualifications based on EU recommendations for existing/defined occupational standards
- To level the existing data from Integrated Repository of energy skills and mark it with stars for level of correspondence with the predefined "Qualification Standard of min requirements" in order to validate the international correspondence of training schemes or competences of workers
- To replicate the RPL (recognition of prior learning) process and enable it as a component of e-learning
- To enable validation of knowledge and skills acquired through microlearning

SEEtheSkills specific actions – An insider view

The context of defining procedure and minimum criteria for mutual recognition, comparison and leveling of EE skills

Integrated SEEtheSkills Repository of energy skills will **include very diverse data in content, format, size and also different in term of scope it covers**. For example there will be training schemes for the same occupation developed from different institutions and in different countries that varies a lot in the duration of course, training content, amount of training material, approach in training delivery etc.

Minimum requirements for mutual acceptance of EE qualifications for existing or newly developed occupational standards will be identified, as a **summary of things that skilled worker have to "know, be able to do or is competent to do"**.

This minimum conditions will be identified by **linking the qualifications with national occupational standards**, and in fact will be based on **Unit of Learning Outcomes** ULO database, which will be the basis or background data pool for Integrated Repository.

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SEEtheSkills specific actions – An insider view

The RESULT:

Defined procedure for mutual recognition,
comparison and leveling of **EE SKILLS OF PROFESSIONALS,**
based on achieved ULOs

Defined procedure for comparison of **different TRAINING COURSEs and matching the resulting qualifications,**
based on planned ULOs

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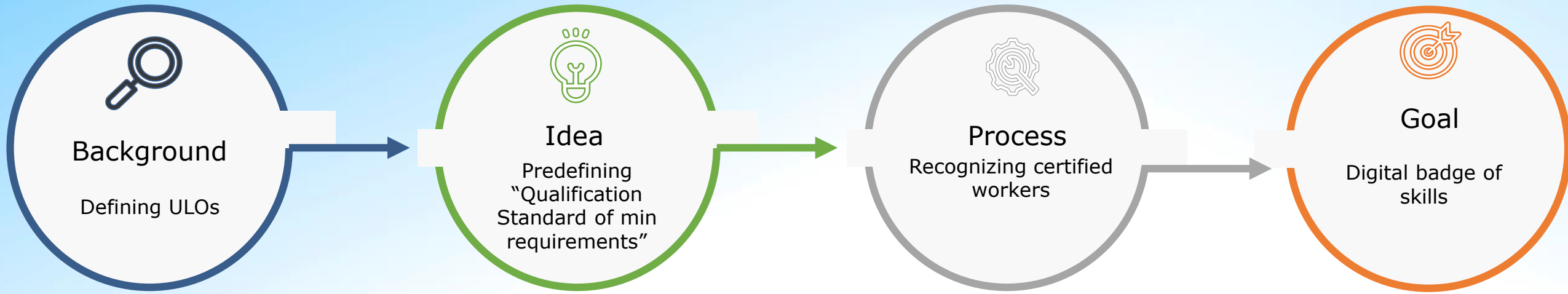
SEEtheSkills specific actions – An insider view

The procedure of defining minimum criteria for mutual recognition, comparison and leveling of **EE SKILLS OF PROFESSIONALS**



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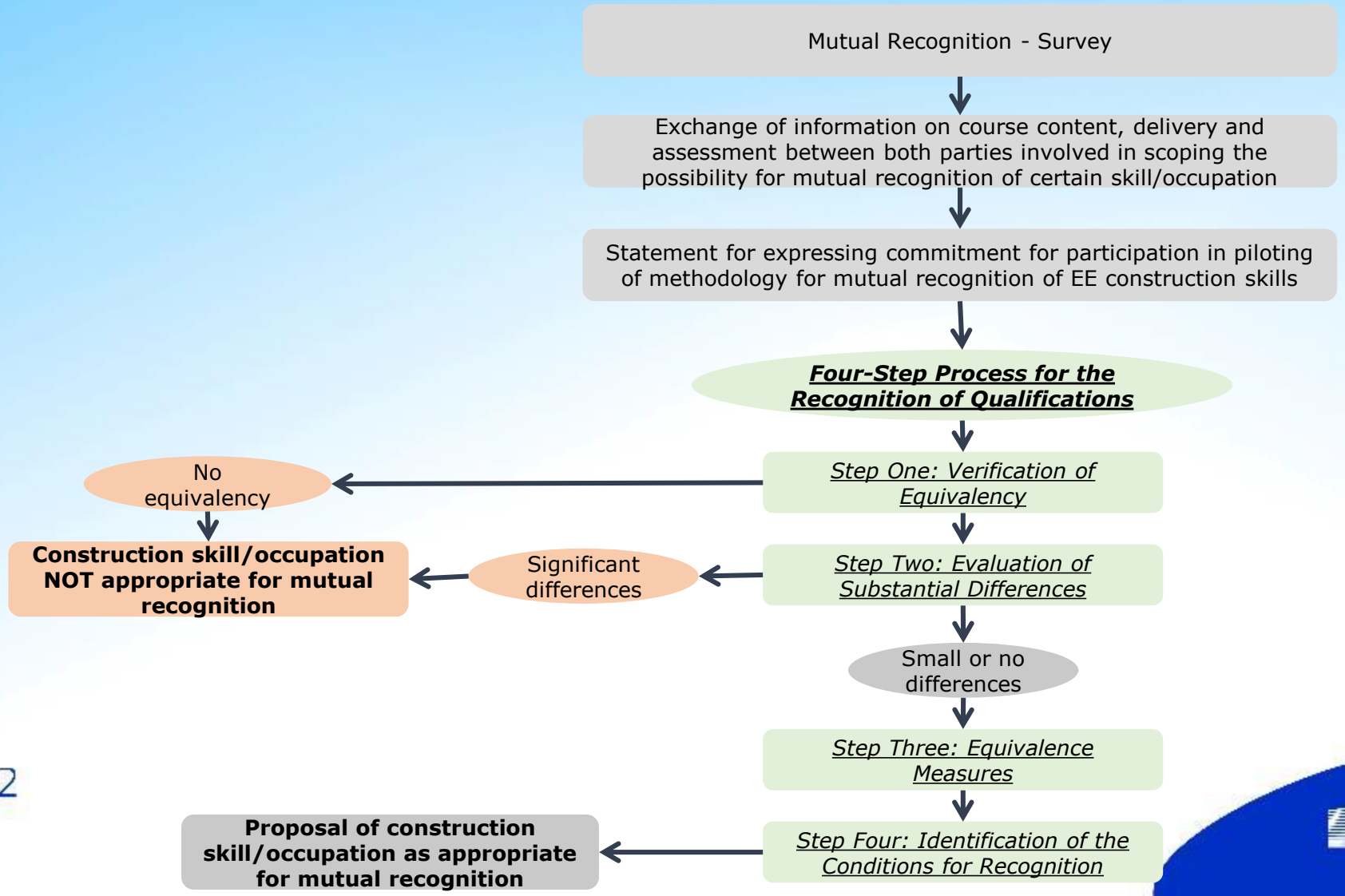
SEEtheSkills specific actions – An insider view

The proposed procedure for evaluation of the **TRAINING COURSE FOR MUTUAL RECOGNITION and matching of resulting qualifications**



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SEEtheSkills – the timeline of realization of actions

Surveying the existing EE skills

Tools for matching and validation

Integrated Repository of skills

- Skills-BUS Advisor
- Professionals – Register
- Materials – Database
- Companies - Database

Replication of RPL

- E-RPL tool
- Mobile app for self evaluation

Tools in IR (for workers)

- gamification
- Microlearning
- Digital badge

E-learning platform

- 2 RES
- 4 BIM
- 2 cross-craft

Piloting and replication

Tools in IR (for owners)

- Find your craftsman
- POE tool
- BIM assessment

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For more info please contact the Project QA manager:
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SEEtheSkills – EU Project


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Thank you for your attention

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- **BusLeague** https://busleague.eu/
- **BusGoCircular** https://busgocircular.eu/
- **CraftEdu** https://www.craftedu.eu/
- **HP4ALL** https://hp4all.eu/
- **INSTRUCT** https://instructproject.eu/
- **SEEtheSkills** www.seetheskills.eu

awakening | relevant | innovative | scalable | equitable

TRAIN4 SUSTAIN

nZEB ready

PRO-Heritage

Digitalisation of construction as a necessary step towards a clean energy transition

EUSEW 2022

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3. Gerald Wagenhofer **ProHeritage**
4. Dr Uli Kakob **TRAIN4SUSTAIN**

Paul McCormack

21st September 2022

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These projects have received funding from the European Union's Horizon 2020 research and innovation programme

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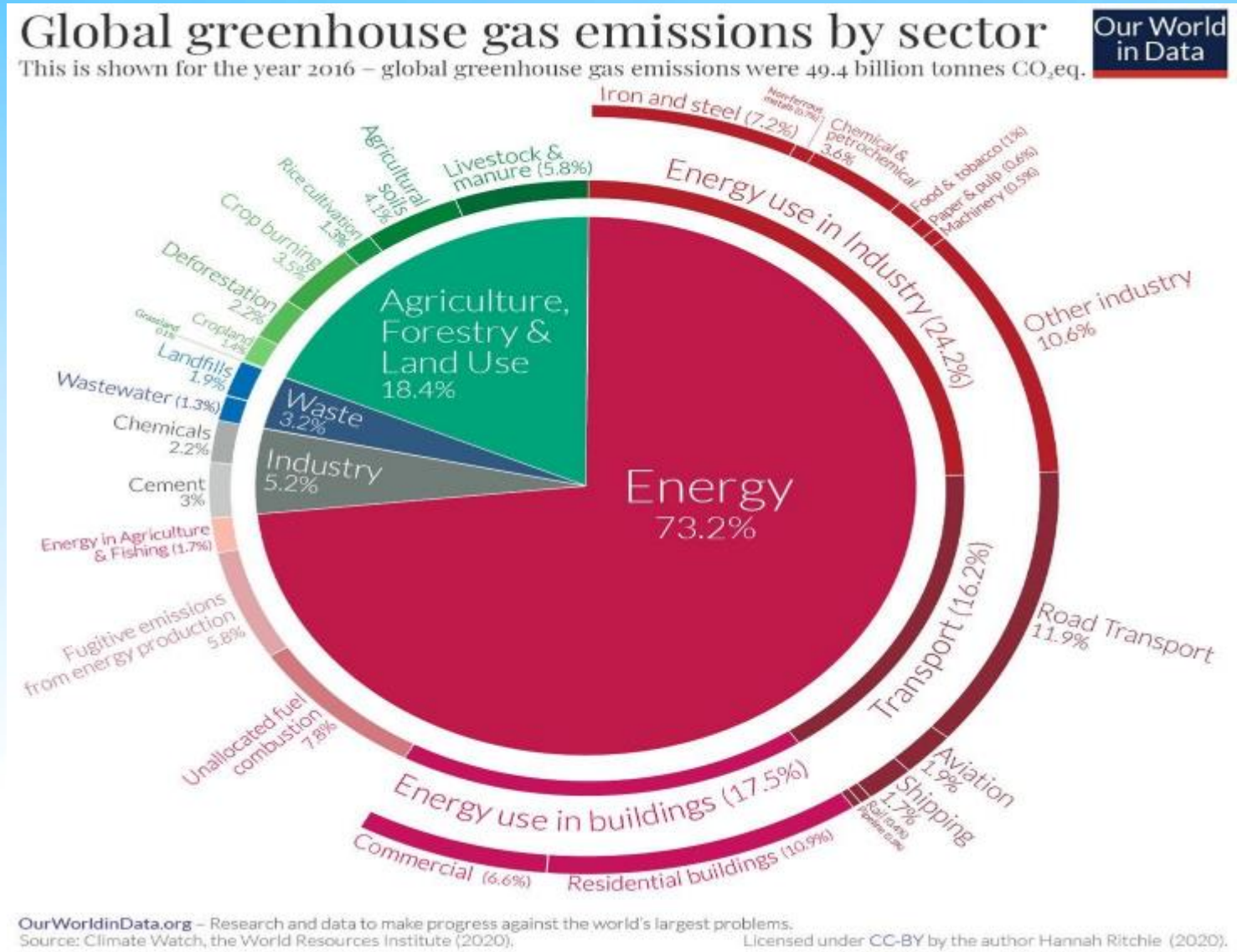
AGENDA

- Digitalisation of construction
  - Why?
  - What?
  - When
  - Who?
  - Where?

- Obstacles
- Innovation
- Benefits
- Challenges

WHY

In order to achieve climate neutrality by 2050, the design and construction workforce must be up-skilled to deliver comfortable, energy efficient and high quality buildings, while evolving in digitalising their work.



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WHAT

Digitalisation Imperative

Energy efficiency - is no longer matter of why, but how

Digitalization as the unavoidable and necessary tool to leverage clean transition of the energy sector, reshaping it towards the future targets and expectations

How do we get there : SKILLS - we need to have all stakeholders upskilled in digital supporting sustainable energy, in a triple helix synergy model

1.public administration

2.industry

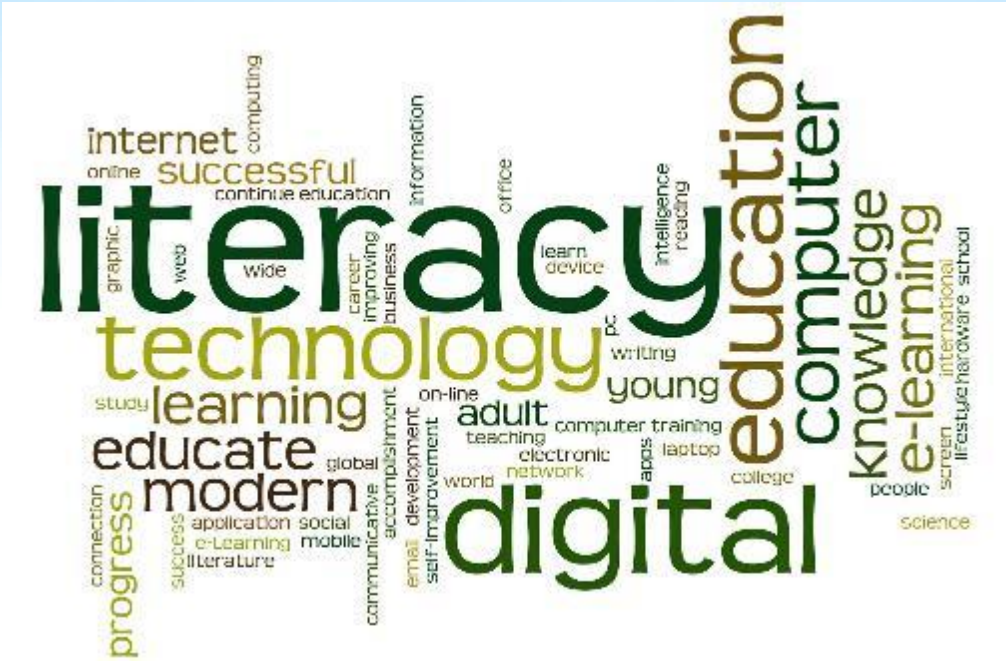
3.society

WHEN

Digital skills – and digital technology – are the future of the construction sector.

By embarking on a digitalisation journey, companies can automate and have integrated data that saves significant time, enables workers and delivers increased return on investment.

Construction companies are able to link processes across the entire value chain, integrate data and remove old silos. The result, it delivers much needed visibility across the entire construction process



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WHO

- **Energy transitions in the construction sector are primarily driven by a skilled workforce**
- **digitalisation can be harnessed to stimulate and empower all workers in the built environment.**
- **a learning interface of micro modules, segmented accreditation and digitalised individual learning accounts will provide accelerated access to learning for the education sector**
- **a dual pathway of reward exchange of certification and/or recognition will increase the vocational mobility and opportunity for workers in the sector**

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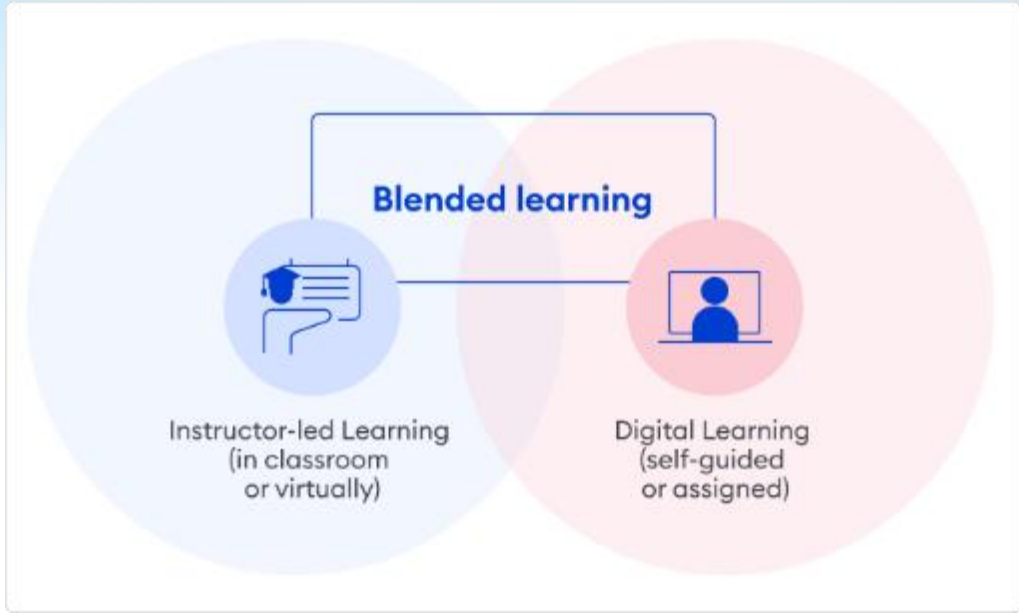
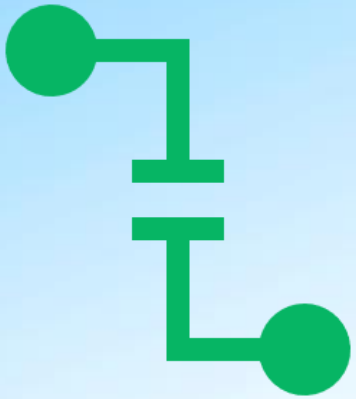
WHERE

Digitalisation Transition

- The ARISE methodology utilizes a structured blended accreditation and digital delivery/certification model for vocationally excluded building professionals with a specific focus on the engagement of those caught in the skills/qualifications void.
- Using segmented course content, ease of access and innovative delivery and a choice of recognition and/or accreditation is a genuinely innovative circular approach to delivering training and raising the skill levels for those beyond traditional learning access routes.



Obstacles - Disconnection



Despite significant progress in digitalisation at planning and design stages of built assets, activities on-site have frequently not evolved.

This results in ongoing low productivity, high costs, and energy-related inefficiencies. The same failure has also led to the 'disconnection' of Blue-Collar and No-Collar construction workers from the evolution of the industry.

Obstacles - Digital Dissonance

- Digital information is essentially the wavelength of construction
- But is currently beyond the ability of the majority of the construction workforce because they lack the opportunity, skills and digital vision to detect, interpret and use in their work.
- The 4 projects have demonstrated that Digital Literacy is key to opening the skills process

The Connectivity imperative

- Skills connectivity is key, ensuring workers are equipped, informed and skilled to deliver energy efficiency across the building sector. Connectivity will stimulate and inspire the demand for sustainable energy skills, augment access to appropriate upskilling transactions, recognition of upskilling, enhance smarter work practices and develop transformational competences.

Skills Innovation

Through a highly innovative approach the projects are deploying system coupling methodologies and approach encompassing;

1) Skills delivery method;
2) European Skills Registry (ESR) platform for target groups such as building professionals, public administrations and scheme operators
3) Learning accounts transaction and recognition;
4) Matrix of skills
5) CEN Workshop Agreement (CWA) pre-standard incorporating the developed Competence Quality Standard (CQS) including 67 mapped/analyzed Qualification Schemes (QS) with 1,335 described Learning Outcomes (LO)
6) Green Public Procurement (GPP) using ESR platform to include and manage sustainable skills in GPP processes using the T4S tools and methodology
7) Impacts of skills on buildings' energy performance,
8) New market and regulatory models of skills demand and
9) Stimulation of investments in high energy performance buildings.

Construction Transition

- Building Information modelling (BIM) involves the production, development and management of digital 3D construction models in collaborative work flow involving designers, contractors and facilities managers.
- Whilst the UK government introduced a mandate for the use of BIM on its construction projects in 2016, the benefits of BIM are recognised across the industry with increasing uptake.
- Central to the BIM process is the development and exchange of information models within a Common Data Environment (CDE), an online space of storing, sharing and managing information. Whilst the skills required to develop the information models are discipline specific, all members of the construction process will be required to access the CDE.

Skills Exchange Mechanism

- Digitalisation in construction from the 4 projects;
- utilise a circular economy approach specifically utilising digital skills stimulation and delivery across the entire building life cycle and assets to decarbonise the complete energy cycle.
- This approach harnesses the market drivers from the demand side and matches these with impact targeted strategies and objectives required to achieve comprehensive success.
- This plural approach represents a multi faceted approach to tackle the carbon footprint of the construction sector.
- Pioneering training scheme and a powerful socio-economic cross sectional influencer, affecting the multiple sectors of education, industry, market and policy by delivering a dynamic training and market uptake model."

Digitalisation Skills Exchange

Digitalisation of Skills is;

1. Revolutionising the learning process by changing the face of delivery and recognition of sustainable energy skills in the construction sector

2. inspiring demand for sustainable energy skills, by providing clear learning interactions, transparency of upskilling transactions and recognition of qualifications achieved.

3. Changing the learning process by monetizing skills development and learning exchange with a digital system based on skills recognition rather than accreditation. The training and transaction system developed by the project will reward learners as they achieve competence at a certain level with the crypto currency for skills exchange - *CERT*coin – the innovative currency of skills and learning of the construction sector embracing today's digital transformation benefits.

Digital Course Mapping

92 MODULES

- 46 ONLINE BIM MODULES FROM 7 PROJECTS
- BIMZEED – 12 MODULES
- BIMCERT – 8 MODULES
- BIMEET - 1 MODULE
- BIMPLEMENT – 13 MODULES
- BUILDING SMART - 5 MODULES
- NETUBIEP – 6 MODULES
- ZEBRA – 1 MODULE

Target groups - 60% White Collar, 40% Blue Collar
These cover the following:
Professionals (60%), Technicians (20%), Specialists (30%), Site Supervisors (20%), Trades and Workers (30%)

Delivery Mode and Duration:
Blended and online - where 80% are 1-2 days contact and 20% are micro units of 1-2hrs. All in English and also other languages.
Types of tools used for assessment- quizzes and gamification, BIM/digital tutorials and practicals, written work, poster presentations, group work, group discussions.

EQF vs CPD/Credits
BIMzeED - EQF 5-7 - contact 8-10hrs, online self study 24-10hrs
BIMCert - CPD/Credits - contact 1-2 hrs online
BIMEET - CPD/Credits - contact 1hr online, 2 days in class
BIMPlement - CPD/Credits - contact 1hr on-site
Building Smart - CPD/Credits - contacts 6-14hrs online
NetUBIEP - CPD/Credits - contact 16-24hrs blended

88% using assessments only
12% with assessment and exams.

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TIBL -Learning

Digitalisation and need has ensured that training and learning constantly neds to evolve

Task and impact based learning

Current tradition learning methodologies do not allow us to predict or guarantee what the students will learn.

Ultimately a wide exposure through task and impact based learning is the best way of ensuring that students will acquire knowledge efficiently and effectively..

Skills Pathway –
delivering the internal and external connectivity

- The skills exchange
- Skills quantification
- Skills energy quantum
- Energy algorithm
- *digi*CONEX

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Our Challenges?

- The **purpose** of this event is to facilitate an interactive discussion between policy makers, academics/ educators and students/ professionals from the design and construction industry by encouraging them to reflect on accomplished EU projects on capacity building.

1. How can construction education be influenced to contribute to climate neutrality and digitalisation at the same time?
2. What does it really take to bring everyone on board and accomplish the green deal together?
3. What did we learn from past projects and what do students and professionals need to thrive?

Conclusion

Training that is supported by digital platforms, gamification, and quality interventions support better delivery toward delivery against climate targets.

- Digital is the New Normal
- Digital has become central to every interaction, forcing both organizations and individuals further up the adoption curve almost overnight.
- Traditional skills training has been delivered in a 'maintenance' mode. As such it has not kept pace with technology advances and this must be addressed.
- Today's new techniques must be packaged and delivered in a proactive agile way in order for industry to take full benefit.

THANK YOU FOR YOUR ATTENTION!

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Q&A

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EXTENDED PROGRAMME
19-23 SEPTEMBER 2022
Going green and digital for Europe's energy transition
#EUSEW2022

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