



SKILLS
INSTRUCT
INSTRUMENTS
CONSTRUCTION

Energy skills recognition policy making



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D4.4 Demo 4

Energy skills recognition policy making

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Glossary

| Acronym | Full name |
|----------------|---|
| CA | Consortium Agreement |
| EC | European Commission |
| EASME | The Executive Agency for Small and Medium-sized Enterprises |
| GA | Grant Agreement |
| PC | Project Coordinator |
| WP | Work Package |
| TL | Task Leader |
| DoA | Description of Action |
| PSC | Project Steering Committee |
| SQM | Scientific and Quality Manager |
| DEC | Dissemination and Exploitation Committee |
| KOM | Kick-off meeting |
| ASM | ASM – Market Research and Analysis Centre |
| VTT | Technical Research Centre of Finland |
| LIST | Luxembourg Institute of Science and Technology |
| RIL | Finnish Association of Civil Engineers |
| CU | Cardiff University |
| R2M | Research to Market Solution France |
| DTTN | Distretto Tecnologico Trentino |
| ENEFFECT | Center for Energy Efficiency EnEffect |
| GER | General Exploitable Result |
| AB | Advisory Board |
| PM | Person month |
| M | Month |



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1. Executive summary.

This report focuses on energy skills recognition in policy-making and other issues related with the improvement of energy efficiency recommendations. It outlines the methodologies used and events performed to achieve the project's objectives. The primary objective of the project is to improve the recognition of energy skills in policy-making, and this report highlights the progress made towards this objective. The project is connected to other tasks aimed at improving energy efficiency and reducing greenhouse gas emissions. The report outlines the methodologies used, including early-stage and capacity building workshops, to achieve the project's goals. The early-stage workshop aimed to identify the current state of energy skills recognition in policy-making and develop strategies to improve it. The capacity-building workshop aimed to train participants in implementing these strategies effectively. The report describes in detail the events performed, including the early-stage workshop, capacity building workshop, identification of future partners for mutual recognition of skills, and other activities. The report highlights the objectives and methodologies used in each event and their outcomes. The results and impact of the project are summarised. The report also identifies further areas of development, including the need for more extensive dissemination of project results and the need to engage more stakeholders in the energy sector. In conclusion, this report presents a comprehensive overview of the project's objectives, methodologies, and outcomes. It highlights the importance of energy skills recognition in policy-making and the efforts made to improve it. The report identifies further areas of development and concludes with general recommendations for improving energy skills recognition in policy-making.

2. Demo target objective

The European Construction sector faces unprecedented challenges to achieve ambitious energy efficiency objectives, that can be met if successful training initiatives and supporting policy instruments are put in place, acting as a springboard to stimulate the demand for energy efficiency skills. The INSTRUCT project responds to this challenge by acting at market level and **providing an operational framework and set of services serving** to (1) raise awareness of stakeholders in the construction value chain about environmental challenges, benefits of sustainable energy skills and need of skilled workers in energy efficiency in the construction sector, (2) increase the number of skilled building professionals and construction workers along the whole value chain and (3) pave the way to legislative changes by supporting public authorities and industrial stakeholders for the development of new legislative frameworks.

Developed in INSTRUCT project services included sustainable energy skills passports/registers for workers new legislative frameworks or public procurement practices, initiatives for home and building owners, and new partnerships in the construction value chain. Those solutions have been demonstrated in 8 Pilot Demonstrators across 7 European countries in order to evidence links between energy skills/education and energy performance/quality, as well as the usefulness and ease of use of the developed tools for recognition of energy skills and qualifications. Each demonstration focused on different topic:



- Demonstration #1: Energy skills certifications in Helsinki, Finland.
- Demonstration #2: BIM for Energy Efficiency Training & Standard in Luxembourg.
- Demonstration #3: Partnership with producers, retailers, and contractors for energy skills recognition in Poland.
- Demonstration #4: Energy skills recognition in policy making in Poland.
- Demonstration #5: Energy efficiency Initiatives for building and homeowners in Italy.
- Demonstration #6: Energy gap reduction and initiatives for building owners (North and European level).
- Demonstration #7: Engaging key stakeholders to stimulate demand of energy skills in Bulgaria.
- Demonstration #8: Developing capacity for supply of continuing qualification services through blended learning systems in Bulgaria.

The aim of these demonstration activities was also to provide living and documented exemplar case studies that could act as a springboard for replication across other regions and countries in Europe. As presented above, one of the solutions that INSTRUCT Consortium has been working on was about **Energy skills recognition in policy making** which has been demonstrated in Poland in demo no.4.

Creating legislative recommendations related to skills recognition in policy making is crucial for promoting energy efficiency in the construction sector. In order to improve energy efficiency, it is important to ensure that professionals involved in the construction sector have the necessary knowledge and skills to implement energy-efficient practices. By creating policies that recognize and promote the importance of these skills, policymakers can incentivize professionals to acquire them and thus drive the adoption of energy-efficient practices in the sector. Furthermore, creating new rules for the tendering process in the construction sector is also critical for promoting energy efficiency. By including requirements for energy efficiency in tendering processes, policymakers can encourage contractors and developers to prioritize energy-efficient practices in their projects. This can be achieved by introducing policy recommendations such as mandatory energy audits, standards for building insulation, and the use of renewable energy sources. By promoting energy efficiency through tendering rules, policymakers can create a more sustainable and resilient construction sector while also reducing carbon emissions and promoting environmental protection.

Thus, the objective of the Polish demonstration activity no. 4 was on one hand to **elaborate education materials** based on the project outcomes and consultations with Polish stakeholders and **disseminate this knowledge to a large number of construction stakeholders and policy makers in Poland**.

The idea was to increase recognition of energy efficiency certified skills in legislation and procurements through (1) sharing of knowledge on successful legislative frameworks in Europe, (2) discussing needs on the national market and as a result, (3) elaborating policy recommendations for public authorities with the goal of enforcing reliance on skilled professionals.

The main work in order to achieve this goal was performed in Work Package 3 – Task 3.3 (Identifying and promoting new legislative frameworks, including practices for public procurement) where the Consortium identified challenges and ideas of new regulations and legislative mechanisms that could strengthen the recourse to skilled workers as well as Work Package 4 - Task 4.3 Demonstration 4: Energy skills recognition in policy making (Central Europe – Poland) where through organised workshops in Poland as well as dissemination activities feedback was gathered, knowledge on the new



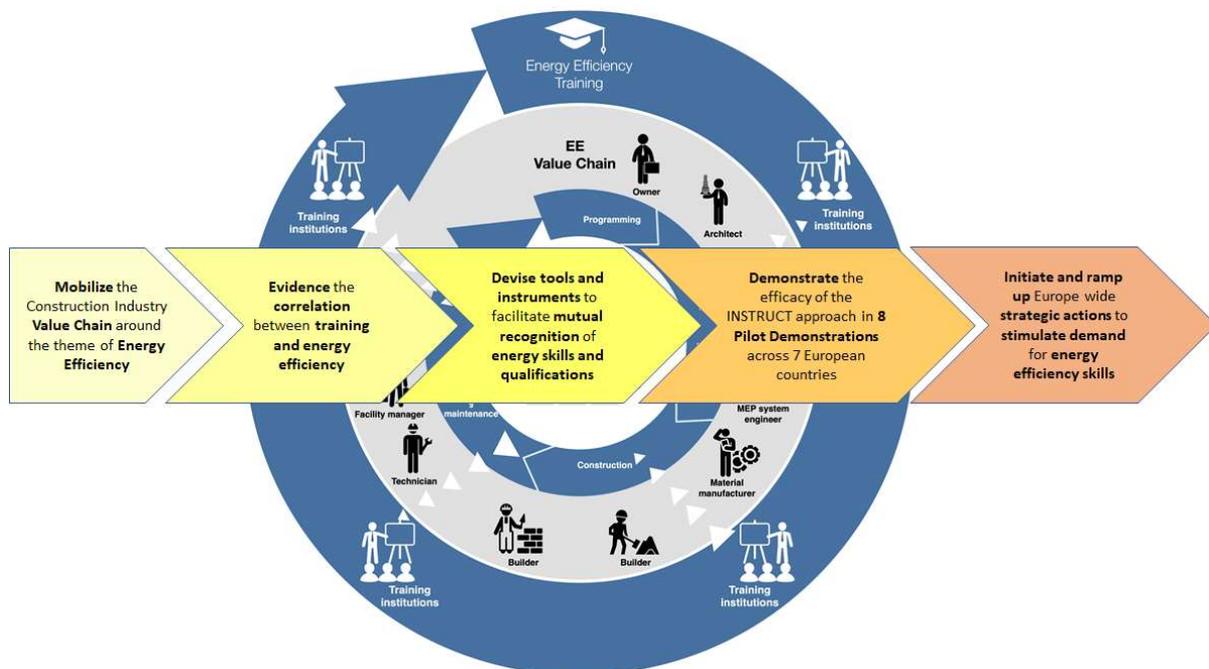
regulations and legislative mechanisms has been shared and policy recommendations have been elaborated.

The target objectives for this demonstration activity were following. The demonstration activity planned to reach 280 professionals through organised meetings and dissemination of education materials.

3. Connection to other tasks

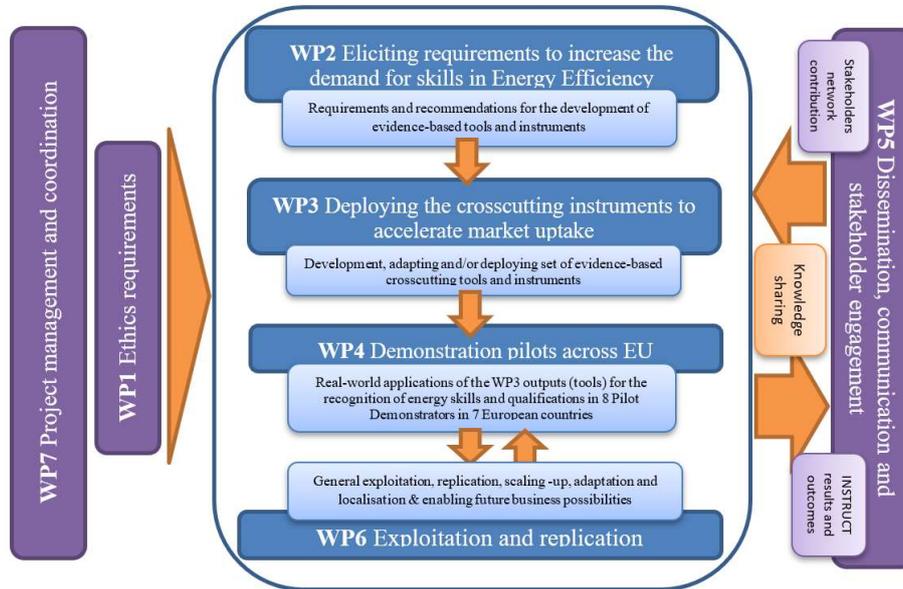
The INSTRUCT project proposed implementation of an incremental and participative approach for the achievement of project objectives. The proposed methodology was structured around five threads: (a) Mobilization of the Construction Industry Value Chain around the theme of Energy Efficiency; (b) Evidencing the correlation between training and energy efficiency; (c) Devising tools and instruments to facilitate mutual recognition of energy skills and qualifications, (d) Demonstrating the efficacy of the INSTRUCT approach in 8 Pilot Demonstrations across 7 European countries; and (e) Initiating and ramping up Europe wide strategic actions to stimulate demand for energy efficiency skills. These strategic themes are illustrated in Figure 1.

Figure 1 - Articulation between EE skills, actors, and lifecycle



The INSTRUCT approach relies on a set of interdependent tasks related to the work packages and their contributions to the specific project objectives. The overall strategy divides the lifecycle of the project into seven Work Packages (WP) presented below. Besides standard work packages, such as ethics requirement, project management and dissemination & communication there were four essential work packages where the research and development work took place as presented in Figure 2 below.

Figure 2 - INSTRUCT Pert diagram



Demonstration activity no. 4, performed in Poland, benefited from WP2 and WP3. In WP2 ‘Eliciting requirements to increase the demand for skills in Energy Efficiency’ based on interaction with key projects, initiatives, and stakeholders at a national and European level (1) requirements and recommendations for the development of new tools and instruments to increase energy efficiency skills recognition across Europe were elaborated as well as (2) quantitative and qualitative evidences that corroborate and reinforce the correlation between skills and education and energy performance and quality. Demonstration activity no. 4 benefited from this task directly by using the qualifications (i.e. learning outcomes) for energy efficiency informed by (a) the understanding of the correlation between training and energy efficiency, and (b) the training landscape for energy efficiency across Europe that have been described in WP2. The learning outcomes were included in discussions and elaboration of recommendations within WP4 – demonstration activity no. 4.

In WP3 - T.3.3 (Identifying and promoting new legislative frameworks, including practices for public procurement) different legislative framework instruments had been described as well as ideas of new regulations and legislative mechanisms that will strengthen the recourse to skilled workers had been identified. T3.3 and 4.4 were very much dependant from each other and intense collaboration was put in place. Firstly, consultations with national stakeholders in T4.4 at an early stage (early-stage workshop) supported the developments in T3.3 with insights and feedback from the Polish construction industry on the needs and challenges with regards energy efficiency skills recognition and legislative changes together with other demonstration leaders. Secondly, knowledge generated in T3.3 especially with regards ideas of new regulations and legislative mechanisms and examples of legislative frameworks for enhancing demand of sustainability skills in building sector has been shared with the Polish stakeholders.

Moreover, each cluster leader was provided with guidance information on stakeholder management and communication available that was produced within WP5 (dissemination and communication) and

results from demo 4 especially with regards the produced policy recommendations was used in the final communication materials.

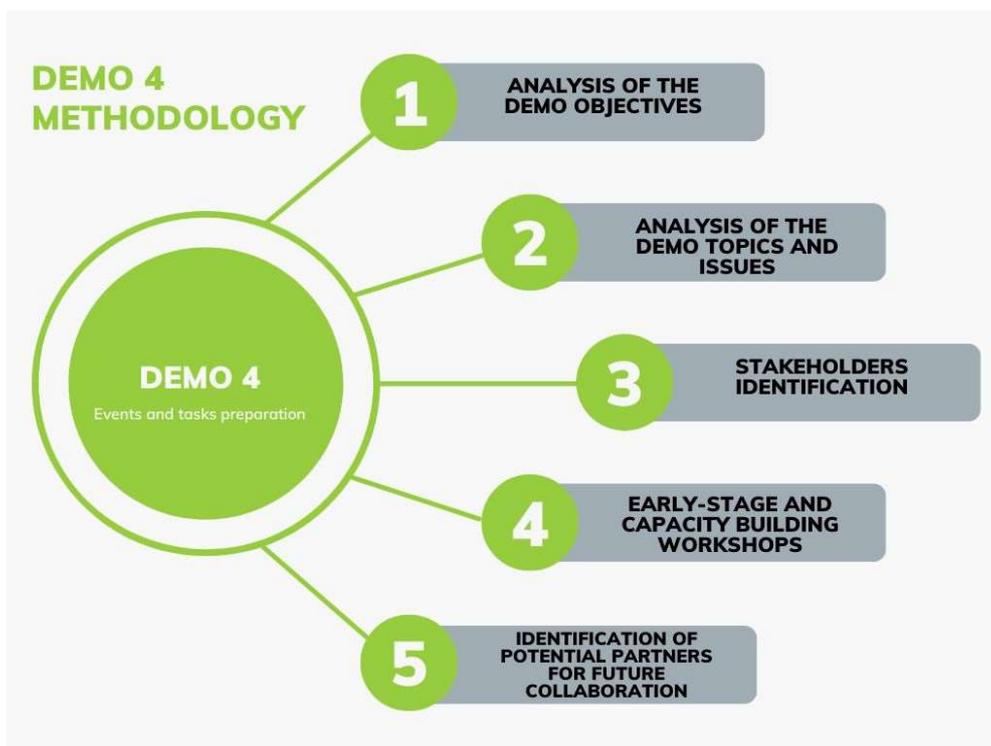
Last but not least, the output of WP4 core demonstration actions will feed straight into WP6 'Exploitation and replication' where the results of INSTRUCT project are being analysed from the perspective of general exploitation, replication, scaling -up, adaptation and localisation, as well as enabling future business possibilities.

4. Methodologies used.

The methodologies used for the implementation of demonstration activities in T4.4 included:

- At an **early stage: workshop** with Polish construction companies.
- **Capacity building workshop** with Polish construction stakeholders.
- At a later stage identification of potential partners from abroad to whom project information and results in form of elaborated within T4.3 and T4.4 education materials has been sent. Here the methodology used was first **selection of relevant institutions and then sharing with them via e-mail education materials** prepared within INSTRUCT.

Figure 3 - Summary of the methodology toward demo events



3.1. Early-stage and capacity building workshop

3.1.1 Objective of early-stage workshop.

The purpose of the workshop was to gather insights that would be helpful for the development of the legislative requirements and frameworks in T3.3. Discussion was directed especially at two aspects: what are the needs of the construction sector in terms of energy efficiency skills and its recognition as well as legislative changes needed and secondly what are the threats in the promotion of EE skills among different construction stakeholders. An important aspect of the workshop was also to obtain preliminary ideas on the topic of policy aspects in energy skills recognition which were later deepened during the capacity workshop.

This workshop was also part of Demonstration no. 3 Partnership with producers, retailers, and contractors for energy skills recognition in Poland as both aspects – partnership aspect as well as policy aspect – was the topic of this first event with Polish construction stakeholders in WP4. The description below with regards the methodology behind the workshop is also presented in D4.3 Partnerships with procedures, retailers and contractors.

3.1.2 Objective of early-stage workshop.

The goal of the capacity building workshop was to enhance capacity of construction sector stakeholders, especially representatives of different associations in developing legislative frameworks that could enforce reliance on skilled workers in construction projects. During the workshop, practical examples of practices for public procurement has been presented to share knowledge and learn on successful case studies, discussion on the needs on the national market has taken place and as a result, recommendations for public authorities from a broader view of energy efficiency and certification has been developed. Thus, on one hand the workshop focused on sharing of knowledge, and on the other hand on the development of ideas as well as the production of a specific output = policy recommendations.

3.1.3 Methodology behind the workshop.

In INSTRUCT demonstration no. 4 we defined workshop as structured and facilitated meeting with selected groups of stakeholders, in this case from construction value chain.

With regards the methodology behind the workshops, it is important to emphasise that the workshops were based on three aspects: knowledge sharing, problem solving and networking. The objective was on one hand to extract knowledge that the participants possess especially in relation market needs in the area of energy efficiency skills and its recognition as well as legislation changes which are possible to implement. We have tried to have a varied group of participants consisting of representatives of associations as well as producers of different construction materials and products who could contribute with idea sharing of the diversity of realities and professional expertise in the construction industry. On the other hand, our goal was to deliver concrete outcomes by using facilitation methods and creativity techniques. Facilitation and creativity techniques have been introduced to raise the



awareness, stimulate creativity and engagement of the stakeholders as well as ensure concrete outputs relating to the workshop topic are produced. Finally, we also ensured enough time for networking on one hand to motivate participants to attend the workshop as well as to facilitate ideas and knowledge sharing during the meeting. The idea was to strengthen relationships between the different stakeholders to increase resilience and build the capacity of participants, leading to improved practices, ways of working and outcomes.

These three aspects were essential to ensure smooth execution of the workshop and, most importantly, provide the benefit for both the researchers of INSTRUCT project and the participants.

The technique used in each workshop was simple **discussion technique** as well as **brainstorming technique**. The idea was to identify what do the participants share about the energy skills recognition challenge in Polish construction sector, what we can learn about it and what kind of recommendations we could identify for Polish policy makers. The steps included (1) specifying the topic and goal of the meeting to the workshop participants to the group (before and at the beginning of the workshop), (2) asking for any ideas from the workshop participants, (3) listing all the ideas on a flipchart and (4) combining the ideas into several general recommendations.

So, the first step involved asking the group to share their main pains and problems linked to the challenge. Secondly the group was engaged to discuss the threats and challenges that relate to greater recognition of energy skills in construction projects in Poland. Our goal was to draw out participants' experience and knowledge on the topic so that the INSTRUCT Partners working in WP3 and WP4 could analyse the results and find patterns that would be helpful in delivering insights for the new regulations and legislative mechanisms. Thirdly, the workshop was about developing specific policy recommendations. In order to achieve the last point, during the capacity building workshop, point another technique was used, namely **consensus technique**. In the case of the INSTRUCT capacity building workshop it was a group decision-making process in which workshop participants developed and decided on proposals of policy recommendations with the aim of acceptance by all (agreement of at least the majority of participants). So, once a policy recommendation was developed, the facilitator suggested it to the group and asked everyone in the workshop if they are ok with that suggestion.

The steps implemented in order to execute the workshops involved:

(1) design of the workshops, which included the following issues:

- the objectives to be achieved by the workshops. Especially in terms of the capacity building workshop it was important to make sure purpose and outputs expected are clear for everybody,
- topics and specific issues to be discussed in the workshops,
- identification of appropriate participants - type and number of participants and stakeholders to be involved and invited,
- identification of appropriate methods and facilitation techniques to be used during the workshops,
- use of space and logistics, including the selection of the venue and catering,
- preparation of the materials needed for the workshops execution, presentation aids (laptop, USB key, CDs, DVDs, brochures, products for demonstration, boards, etc.), printouts of the agenda, the list and contact details of the participants, etc.).

- identification of communication strategies to involve, inform and disseminate results (invitation letters, confirmation of their presence, sending the agenda to the participants as well as relevant practical information [hotel address and contact details, directions to the hotel, parking availability, times, name of the meeting room, equipment that will be available for presentations, etc.]).
 - facilitation team preparations,
 - draft programme and timing and output of the workshop.
- (2) execution of the workshops and applying facilitation method. An experienced facilitator has been chosen to moderate the workshop and work closely with participants to explore problems and questions and to identify solutions – in our case policy recommendations. The workshop was well-structured, focused on a common goal and a common process and the group's discussion, decisions and outcomes have been recorded. The role of the facilitator was also to provide to handle conflicts between participants as well as other non-productive participant behaviours that could hamper the workshop's process.
- (3) recording of the workshop's outcomes. The outcomes of the workshop were organised into a short executive report that included the outcomes of the notes taken by meeting rapporteur as well as a general description of the workshop process and methods used.
- (4) communication of the early stage workshop and consultation results to the T3.3 leader in order to support the development of the new legislative frameworks and requirements.

3.2. Exploitation of project results to foreign organisations from the construction sector.

As a part of demonstration 3 and 4, activities were performed to improve mutual recognition of sustainable energy skills in neighbouring countries - working with Germany, Czech Republic and Slovakia to align the recognition via local Chambers of Commerce. The activities involved identification of relevant organisation from above mentioned countries, contacting them and sharing with them the outputs generated within INSTRUCT project. The idea was to select and share with them relevant know-how produced within INSTRUCT project on the case studies evidencing the correlation between skills and education and energy performance and quality, the instruments developed in WP3 and the results from the demonstration activities.

The approach and steps implemented towards execution of this activity involved:

- (1) identification of relevant organisations which could benefit from the knowledge generated within INSTRUCT project and preparing a database with basic information including contact information,
- (2) selection of methods of sharing concrete information: which exactly information to select, how to present them, what language to use,
- (3) preparation of information and communication materials,
- (4) contacting the relevant organisation, establishing relations,
- (5) disseminating INSTRUCT results via selected methods.

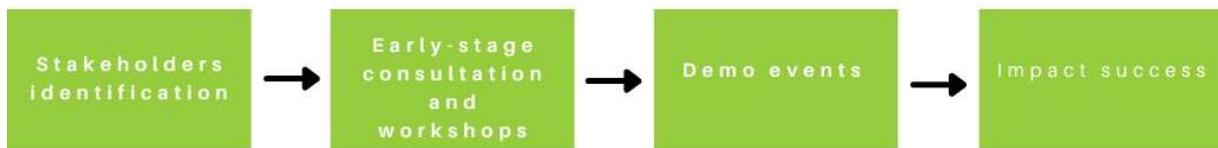


4. Description of workshops and events performed.

4.1. Introduction.

The methodology presented below shows the approach toward organisation of the Demo 4 (similar approach as applied in Demo 3) activities. Summarising and synthesising all information's, the four-step approach was identified (see Figure 4):

Figure 4 – Four-step Demo 3 approach



1. At the first stage we have identified our potential stakeholders for whom our workshops and events will be addressed. We can divide these stakeholders into two main groups:
 - a. Professional associations, i.e.: Polish Windows and Doors Associations
 - b. Public institutions, i.e.: Polish National Chamber of Construction.

These two groups has the biggest potential with regards policy recommendations that might be communicated to the government. Apart for these two groups we also invite the representatives of producers, as they are also important part of the construction industry.

2. Second stage was related to the organisation of consultations and workshops
3. Third stage was referring to participation in several events where we have conducted presentations and training related to the Demo 4 objectives.
4. The final stag was the impact that we have reached thanks to the activities conducted under Demo 4 activities.

4.2. Events description.

In this sub-chapter the description of the conducted events will be presented in detail.

4.2.1 Early-stage workshop

The main goal of the first workshop (early-stage workshop) was to gather important INSTRUCT stakeholders in Poland to consult and to brain-storm issues connected with the gaps regarding energy efficiency policy and other related issues like certification of workers (ie., expanding the range of official job titles). This firs workshop was also dedicated to the Demo 3 (joint workshop). During the this workshop that was conducted in Warsaw on 19th January 2022 we have gathered representatives of few polish associations and producers (see table below)

Table 1 - Participants of early-stage workshop

| Organisation type | Organisation name |
|----------------------------|--|
| Associations | <ul style="list-style-type: none"> • Association of Manufacturers, Suppliers and Distributors "Polish Windows and Doors" • Association of energy-efficient ready-made houses • Association of Styrofoam Manufacturers • Association of Manufacturers of Mineral Wool: Glass and Rock |
| Producers | <ul style="list-style-type: none"> • Saint-Gobain (glass, isolation wool, construction chemicals etc.) • Wiśniowski (doors, windows, gates) • Proventuss (glass and window materials, insulations) • Fakro (windows, stairs) • Aluplast (windows, doors) • Oknoplast (windows, doors, aluminium equipment) • Klinkierbud (clinker tiles, elevations) • Austrotherm (Styrofoam) |
| Public institutions | <ul style="list-style-type: none"> • Polish Chamber of Construction Industry and Commerce Committee on Construction at the Polish Chamber of Commerce |

During this workshop we discussed, among other things, the challenges facing the construction industry in terms of building and certifying skills in the proper installation of equipment or other building elements (windows, doors, facades), as well some law and policies challenges. This discussion and the afterward brain-storming session led us to some important conclusion (see Table 2)

Table 2 - Challenges and threat toward Energy Efficiency education and certification

| Challenges Areas | Challenges Type |
|---------------------------------------|---|
| Education (input for the D4.3) | <ul style="list-style-type: none"> • The need for site managers qualified in the field of energy efficiency (Quality control of installed equipment and materials) • The need for professionally trained installers • The need of energy efficiency trainings for SMEs |

| | |
|--|--|
| Law and policies | <ul style="list-style-type: none"> • Multi-faced integration of the construction market • The need of certain field of education at the VET and HE level (energy efficiency related knowledge, i.e., regarding proper installation) • The need of energy certificates for the whole building (<i>*it will be mandatory for investors to have and EPC before the end of construction phase, from 28.04.2023</i>) • Works in the field of energy savings should be entered in the catalogue of works in the construction log. • The need of windows and doors joinery of acceptance on construction site • Additional points in public procurement for certified workers |
| Socio-economical (input for the D4.3) | <ul style="list-style-type: none"> • Arousing the need for professional performance in terms of energy among investors and producers. • The need of cooperation between companies |
| Threats | Threats Type |
| Socio-economical (input for the D4.3) | <ul style="list-style-type: none"> • Sometimes client is more educated than installer. • The market is not mature enough for energy efficiency revolution. • Lack of employees on the market (also qualified ones) • Lack of awareness among companies, installers, and clients |

As presented in the table above, input we have received is related mostly with the three areas: **education, social** and **law and policies**. First two categories (education and social) are related with the Demo 3 activities. In terms of Demo 4 we are focusing on the law and policies category. During the meeting a dedicated brain-storming session was conducted, were 6 industry related challenges, areas of development and recommendations were identified:

- 1) **“The need for Multi-faced integration of the construction market”**: The construction market is a complex and multifaceted industry that involves numerous stakeholders, including designers, contractors, suppliers, and clients. To ensure the success of any construction project, it is essential to integrate these various players in a collaborative and cooperative manner. The need for multifaceted integration in the construction market arises from the fact

that the industry involves multiple disciplines, skills, and specializations that need to work together in harmony. Multifaceted integration in construction can help to streamline the project delivery process, improve communication and coordination between different stakeholders, and reduce project delays and cost overruns. By integrating the various players in the construction market, it becomes possible to optimize the design, construction, and operational phases of a project, resulting in better outcomes for all involved parties. For example, an integrated project delivery approach involves early engagement and collaboration between the client, designers, and contractors, resulting in a more efficient and effective project delivery process. This approach can lead to better project outcomes, including reduced costs, improved quality, and increased innovation. In conclusion, the need for multifaceted integration in the construction market is paramount to achieve successful project delivery, reduce costs and delays, and improve overall project outcomes. By integrating the various stakeholders and players in the construction market, it becomes possible to create a more sustainable, efficient, and innovative construction industry

- 2) **“The need of certain field of education at the VET and HE level (energy efficiency related knowledge, i.e., regarding proper installation)”**: There is a growing need for energy efficiency-related education at both the vocational education and training (VET) and higher education (HE) levels. Specifically, there is a need for knowledge and skills related to the proper installation and maintenance of energy-efficient systems, such as HVAC systems and renewable energy technologies. This education can help to address the shortage of skilled workers in the energy efficiency sector, reduce energy waste, and contribute to the fight against climate change.
- 3) **“The need of energy efficiency certificates for the whole building”**: Energy certificates for the whole building are essential in helping to improve energy efficiency in the built environment. By providing an energy rating for the entire building, these certificates can help to identify areas where improvements can be made, such as insulation, heating and cooling systems, and lighting. This information can also help building owners and tenants to make more informed decisions about energy use, leading to cost savings and a reduction in greenhouse gas emissions. Additionally, energy certificates can contribute to the overall sustainability and resilience of the building, making it a more attractive and valuable asset in the long term.
- 4) **“Works in the field of energy savings should be entered in the catalogue of works in the construction log”**: Including works related to energy savings in the catalogue of works in the construction log is important in order to promote the use of energy-efficient technologies and practices. This information can be used to track the use of these technologies over time and can help to identify areas where further improvements can be made. Additionally, by including energy savings works in the catalogue, it becomes easier to share best practices and to learn from successful energy-saving projects. This can lead to the adoption of more energy-efficient technologies and practices, resulting in cost savings, reduced greenhouse gas emissions, and a more sustainable built environment.
- 5) **“The need of windows and doors joinery of acceptance on construction site”**: The acceptance of windows and doors joinery on the construction site is critical to ensuring the quality of the building envelope. Properly installed windows and doors are essential for maintaining energy efficiency, reducing noise pollution, and ensuring the safety and security of the building occupants. By conducting an acceptance process on-site, any issues with the installation of windows and doors can be identified and rectified before the construction process is complete. This helps to avoid costly rework and ensures that the building meets the required



performance standards. Ultimately, the acceptance of windows and doors joinery on the construction site is an important step in ensuring the quality and sustainability of the building.

- 6) **“Additional points in public procurement for certified workers in energy efficiency”**: Adding additional points in public procurement for certified workers in energy efficiency can help to promote the use of skilled professionals in the energy efficiency sector. By awarding extra points to contractors who employ certified workers, the procurement process can incentivize the use of best practices and encourage the adoption of energy-efficient technologies. This, in turn, can lead to the creation of more jobs in the energy efficiency sector, while also helping to reduce energy waste and greenhouse gas emissions. Moreover, by highlighting the importance of certified workers in energy efficiency, this approach can help to raise awareness of the benefits of energy-efficient technologies and practices, ultimately contributing to a more sustainable built environment.

Summarising the outcomes of the early-stage workshop, the construction industry are facing challenges in terms of education/certification of skills and on-site improvements related with additional documentation, as well improvement of procurement process.

Figure 5 - Photo from INSTRUCT Easrly-stage Workshop



4.2.2 Capacity Building Workshop

Second workshop that was conducted within the Demo 4 activities, was a capacity building workshop. The event was organised jointly with the [Regional Chamber of Civil Engineers in Łódź](#) on 6th of September 2022. This workshop gathered representatives of several polish chamber and associations and representatives of producers (see table below).

Table 3 - Participants of the INSTRUCT capacity building workshop

| Organisation name | Participant role in the organisation |
|--|--------------------------------------|
| Polish Chamber of Construction Industry and Commerce | President |

| | |
|---|---|
| Łódź Institute of Environmental Engineering and Building Installations of the Technical University of Łódź and Polish Association of Sanitary Engineers and Technicians | University professor, member of the Board of the Branch |
| F.B.I TASBUD Capital Group | Vice President of the Board/ General Director |
| Pekum Sp. z o.o. | President of the Management Board |
| KLINKIERBUD | Managing Director |
| Building Research Institute | Director |
| Faculty of Civil Engineering, Warsaw University of Technology | Vice Dean for Student Affairs |
| Trade Union "Budowlani" | President |
| Polish Association of Roofers | President of the Board |
| Association of Manufacturers, Suppliers and Distributors "Polish Windows and Doors" | President of the Board |
| Atlas Sp. z o.o. | Vice President for the development |
| Polish Association of Construction Industry Employers | President of the Board |
| Polish Association of Construction Engineers and Technicians | Chairman |
| BZB Project Management Office in the construction industry | Managing Director |

As mentioned in the methodology section the goal of this workshop was to bring together important stakeholders to talk about several issues related with energy efficiency in construction sector, and to review and develop new recommendation for the policy makers. As the result of the workshop, previously identified recommendation and challenges were confirmed (see Table 2), law and policies section). What is more, another outcome of the event was the identification of additional recommendations from more general point of view. Together with the participants of the workshop, following 4 recommendations were formulated:

- 1) Global energy efficiency policy over local (EU level):** While the European Union (EU) has made significant progress in promoting energy efficiency and reducing greenhouse gas emissions, there is a need for global policies to tackle climate change. Local European policies are not enough to address the global challenge of climate change and the need for sustainable development. Global policies on energy efficiency are necessary to exert influence on non-European countries to reduce pollution and start implementing energy efficiency policies. It is

important to note that greenhouse gas emissions do not recognize borders, and climate change is a global challenge that requires a coordinated global response. Global policies can create a level playing field for businesses operating in different regions and promote the adoption of best practices worldwide. By promoting energy efficiency on a global level, countries can reduce energy consumption, greenhouse gas emissions, and save money on energy bills. Furthermore, global policies can help to reduce environmental pollution and improve the health of citizens worldwide. Many countries outside the EU still rely on polluting sources of energy, which can have negative effects on human health and the environment. By promoting energy efficiency and sustainable development on a global level, countries can improve the health and well-being of their citizens.

- 2) **Diversification of production:** The diversification of production is essential in shaping production policy and achieving sustainable development goals. Introducing the principle of quality over quantity is crucial, especially when it comes to sustainable and energy-efficient products. By focusing on sustainable production, we can simultaneously reduce pollution and energy consumption, thereby creating a healthier and more sustainable environment. However, the purchase price of sustainable and energy-efficient products is often higher, making them less accessible to everyone. Therefore, we should not abandon cheaper, less durable products altogether, but rather, pay attention to increasing the use of recycled materials and ensuring that new products can be reused at the end of their life. Maintaining a balance between the environment, production, and consumption is crucial in achieving sustainable development. The principle of quality over quantity should be accompanied by the golden rule, which emphasizes the importance of responsible production and consumption. We should strive to reduce waste, recycle materials, and minimize our environmental impact while still meeting our production needs. Furthermore, diversification of production can also create new economic opportunities and promote innovation in sustainable production methods. By investing in sustainable production, we can create jobs and stimulate economic growth, while also protecting the environment and contributing to a healthier and more sustainable future.
- 3) **Uniform and transparent regulations:** Uniform and transparent energy efficiency regulations are crucial for ensuring that technical parameters of products in the construction value chain comply with EU standards. This is because construction products and materials play a significant role in achieving energy efficiency targets, particularly in the building sector, which is responsible for a significant portion of energy consumption in the EU. Regulations that are consistent and transparent help to promote innovation, competition, and consumer confidence in energy-efficient products, while also reducing barriers to trade within the EU. They can also provide a level playing field for businesses operating in the construction value chain, as well as contribute to a more sustainable and resilient built environment.
- 4) **National and European social programs (in context of education and certification of skilled workers):** National and European social programmes are essential for increasing demand on energy efficiency, particularly in the context of education and certification for skilled workers and installers. These programmes can provide training and education for skilled workers and installers, which can improve their understanding of energy-efficient technologies and practices. By providing education and certification, these programmes can increase the quality and standardization of energy-efficient installations, which can help to reduce energy consumption and greenhouse gas emissions. Additionally, these programmes can help to



increase consumer confidence in energy-efficient technologies and encourage the adoption of energy-efficient practices. National and European social programmes can also help to create jobs in the energy efficiency sector, which can contribute to economic growth and reduce unemployment. By investing in education and training for skilled workers and installers, these programmes can create a skilled workforce that is capable of meeting the growing demand for energy-efficient installations.

Figure 6 - Photos from INSTRUCT Capacity Building Workshop



4.2.3 Identification of future partners for mutual recognition of skills

Improved mutual recognition of sustainable energy skills between Member States and neighbouring countries is essential to facilitate the movement of skilled professionals in the renewable energy sector across borders. Working with Germany, Czech Republic, and Slovakia, local Chambers of Commerce are collaborating to align the recognition of sustainable energy skills across the three countries:

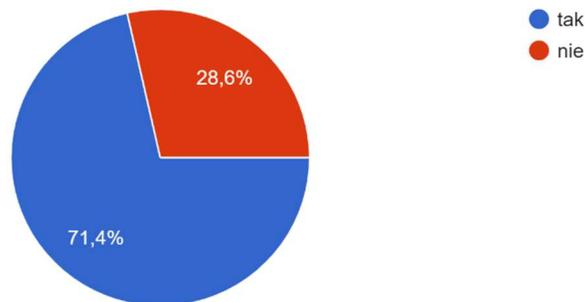
- 1) In Germany, the Chambers of Commerce and Industry (IHKs) play a crucial role in supporting businesses and professionals across various industries, including the renewable energy sector. The IHKs provide training, certification, and other services to help professionals develop the skills and qualifications needed to work in the renewable energy industry.
- 2) In the Czech Republic, the Chamber of Commerce (HKČR) is the main organization representing the business community, including companies operating in the renewable energy sector. The HKČR works to promote the interests of businesses and professionals, provide training and certification, and support the growth of sustainable energy industries in the country.
- 3) In Slovakia, the Slovak Chamber of Commerce and Industry (SOPK) is the main organization representing the interests of businesses, including those in the renewable energy sector. The SOPK works to support the development of skilled professionals and promote the growth of sustainable energy industries in the country.

The opportunity of collaboration with these and other Chambers of Commerce in the region, Germany, Czech Republic, and Slovakia are working towards a common goal of improving the mutual recognition of sustainable energy skills, promoting the growth of sustainable energy industries and creating a more sustainable future for Europe. The results of the INSTRUCT project will be communicated to these organisations looking forward to establish new quality among the skills recognition

4.2.4 Other activities

One of the other activities carried out, was a survey that was conducted during **VI Convention of the Heating, Plumbing and Sanitary Market**. This survey was mostly dedicated to task 4.3 but two additional question was added to see the point of view of producers and installers regarding the certification of skills. In the first question we have asked: *“Do you think dealers or installers should have special certifications to prove their knowledge of energy efficiency?”*, and **100%** of respondents said yes. The second question was: *“Should having such certificates be a requirement in public tenders?”*, 71% of respondents agreed that there should be a provision in the tenders to require bidders submitting tenders to have certified employees. The survey results confirm the maturity of the market and of manufacturers and installers to place greater importance on training and certifying employees in energy efficiency.

Figure 7 - *“Should having such certificates (energy efficiency) be a requirement in public tenders?”*



5. Results and Impact

The results of the Demo 4 are 10 recommendations that were identified and elaborated during two workshops conducted by ASM. These recommendation are (explained in details in chapter Events description.):

- 1) **“The need for Multi-faced integration of the construction market.”**
- 2) **“The need of certain field of education at the VET and HE level (energy efficiency related knowledge, i.e., regarding proper installation).”**
- 3) **“The need of energy efficiency certificates for the whole building.”**
- 4) **“Works in the field of energy savings should be entered in the catalogue of works in the construction log.”**
- 5) **“The need of windows and doors joinery of acceptance on construction site.”**
- 6) **“Additional points in public procurement for certified workers in energy efficiency.”**
- 7) **“Global energy efficiency policy over local (EU level).”**
- 8) **“Diversification of production”**
- 9) **“Uniform and transparent regulations”**
- 10) **“National and European social programs” (in context of education and certification of skilled workers)**

The main impact of the Demo 4 is connected with the professionals that we have reached with the INSTRUCT workshops, and with those that will be reached with our newsletter, publications and webinars. Summarising, during the demo activities we have been able to reach directly during the workshops following groups of professionals and stakeholders:

- 1) **Public and private authorises (18)**: construction chambers, construction associations,
- 2) **Producers (11)**: construction materials producers.

As agreed with some of the associations i.e., [Association of Manufacturers, Suppliers and Distributors "Polish Windows and Doors"](#) and [Association of Manufacturers of Mineral Wool: Glass and Rock](#) final results and outcomes of the INSTRUCT project, including Demo 4 outcomes, will be distributed among the association contacts reaching at least 250 professionals.

5. Further development

With regards the further development of the task activities, we are planning to continuously promote the outcomes. As ASM Research Solution Strategy is strongly connected with the construction sector in Poland, there will be a lot of opportunities to exploit the results of the INSTRUCT project. What is more we have prepared additional webinars to disseminate and exploit the results also after the end of the project duration. In the context of Demo 4, the webinar is called “Webinar - Recommendations for recognition of employee certification, tender changes and general policy in context of energy efficiency.” This webinar will be uploaded for free on the Internet, and will be sent via e-mail to all construction industry contact of ASM and associations .

5. General Conclusions

As the world moves towards a more sustainable future, the demand for energy skills recognition and requirements for skilled workers is increasing rapidly. This is due to the fact that the energy sector is one of the most critical and rapidly evolving industries, and it requires a highly skilled workforce to ensure that it continues to grow and meet the needs of society. One of the main drivers behind this increased demand is the need to transition to renewable energy sources, such as wind, solar, and hydro power. This requires a whole new set of skills and knowledge, as well as new technologies and infrastructure. For example, workers will need to be trained in the installation, maintenance, and operation of renewable energy systems, as well as in the design and construction of new renewable energy infrastructure. Another factor driving the demand for energy skills recognition is the need to improve energy efficiency and reduce greenhouse gas emissions. This requires a range of skills and expertise, from energy auditing and management to the development of energy-efficient technologies and systems. To meet this increasing demand for skilled workers, new legislative frameworks are needed to ensure that workers are properly trained and certified, and that their skills are recognized and valued by employers. This includes the development of national standards and qualifications frameworks, as well as the establishment of training and certification programs.

In addition, governments and industry need to work together to develop incentives and support structures that encourage workers to enter the energy sector and develop the skills needed for the future. This could include apprenticeship programs, subsidies for training and certification, and funding



for research and development in the energy sector. Ultimately, the demand for energy skills recognition and requirements for skilled workers will continue to increase as the world transitions to a more sustainable energy future. By investing in the development of skilled workers and new legislative frameworks, we can ensure that we have the expertise and infrastructure needed to meet the challenges of the future and build a more sustainable world for all.



6. Annexes

Annex 1 – Questionnaire

Współpraca pomiędzy podmiotami sektora budowlanego w celu osiągnięcia lepszych parametrów efektywności energetycznej. Certyfikacja umiejętności z zakresu efektywności energetycznej.

1. Proszę zaznaczyć z jakimi produktami związana jest Pana/Pani firma? Mogą być to produkty produkowane lub/i sprzedawane (można zaznaczyć więcej niż jedną opcję)

Zaznacz wszystkie właściwe odpowiedzi.

- Pompy ciepła
- Kotły grzewcze
- Grzejniki
- Systemy wentylacyjne
- Systemy ogrzewania podłogowego
- Rekuperatory
- Urządzenia ogrzewające wodę
- Urządzenia do ogrzewania pomieszczeń

2. W jakim stopniu (w ujęciu procentowym) produkowane/sprzedawane przez Państwa produkty odpowiadają za efektywność energetyczną budynku?

Zaznacz tylko jedną odpowiedź.

- < 25%
- 26% - 50%
- 51% - 75%
- 76% <



3. Czy nawiązują Państwo współpracę ze sprzedawcami, instalatorami lub konsumentami np. w zakresie szkoleń lub organizowania sesji wymiany wiedzy?

Zaznacz tylko jedną odpowiedź.

tak

nie

4. Jaki rodzaj współpracy Państwo podejmują, związany pośrednio lub bezpośrednio z efektywnością energetyczną?

Zaznacz wszystkie właściwe odpowiedzi.

Organizujemy szkolenia dla sprzedawców

Organizujemy szkolenia dla konsumentów

Organizujemy szkolenia praktyczne dla instalatorów

Organizujemy sesje wymiany wiedzy/prezentacje produktów

Nawiązujemy współpracę w zakresie technologii, np. z uczelniami

Inne: _____

5. Czy napotykają Państwo problemy/bariery związane z coraz wyższymi wymaganiami dotyczącymi produktów, w kontekście ekologii lub efektywności energetycznej?

Zaznacz tylko jedną odpowiedź.

tak

nie

6. Jeśli tak, proszę powiedzieć jakiego rodzaju są to problemy/bariery?



7. Czy uważa Pan/Pani, że sprzedawcy lub instalatorzy powinni posiadać specjalne certyfikaty poświadczające ich wiedzę z zakresu efektywności energetycznej?

Zaznacz tylko jedną odpowiedź.

tak

nie

8. Czy posiadanie takich certyfikatów powinno być wymogiem w przetargach publicznych?

Zaznacz tylko jedną odpowiedź.

tak

nie

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SKILLS
INSTRUCT
INSTRUMENTS
CONSTRUCTION



Evidence-based market and policy instruments implementation across the EU to increase the demand for energy skills across construction sector value chain.



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