



SKILLS
INSTRUCT
INSTRUMENTS
CONSTRUCTION

Initiatives for building and homeowners



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D4.5 Demo 5

Initiatives for building and homeowners

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1. Demo target objective

1.1 Introduction

INSTRUCT demo 5 is focused on sustainable and energy efficiency construction/renovation for new and existing buildings. It consists of a 12 event-cycle delivered through raise awareness initiatives, training modules, conferences and seminars which took place mostly physically, but also online, from September 2021 to October 2022.

Activities and target groups:

The aim of the event cycle was to provide concrete examples and real case studies to underline and explain the multiple benefits of sustainable and energy efficient construction and renovation, such as indoor environmental quality, durability, energy savings, increased market value of buildings, lower running costs, among the others.

The demo initiatives were designed and implemented as a tailor-made training offer to be in line with INSTRUCT scope and topics and with the following target groups identified in INSTRUCT Grant Agreement (GA), namely:

1. Building and homeowners
2. Professionals from the construction value chain (i.e., architects, engineers, surveyors, technicians, contractors, construction firms, etc.)
3. Condominium administrators (those in charge of managing private and social housing apartment buildings)

The demo activities have been held in Italy – the designated country for demo 5– and mostly in the Trentino-South Tyrol region, Northern Italy, where DTTN is located. In some cases, especially for webinars and online events, the reach was extended to the national level or to other specific locations.

Demo 5 implementation availed of the cooperation with INSTRUCT partner R2M and with local or national associated partners identified in the GA or during the design of the event-cycle, according to the objectives, target groups and training content to be delivered.

1.2 List of activities

Hereafter it is the complete list of demo 5 events with detailed information about them. The activities were performed from mid-September 2021 to 28th October 2022, reaching around 762 attendees both online and in presence. Impacts calculated according to INSTRUCT technical annex methodology are tackled in §7.

Table 1 Training and awareness raising activities of INSTRUCT demo 5

Event Number	Event name	Location	Main associated partners	Target audience	Number of Participants
1	Superbonus 110% - Fiscal and technical aspects of the incentive – Day 1	Onsite, Pomarolo, Italy	Distretto Famiglia Vallagarina,	Building and homeowners, AEC professionals,	39



			Comune di Pomarolo	municipal technical staff	
2	Superbonus 110% - Fiscal and technical aspects of the incentive – Day 2	Onsite, Ala, Italy	Distretto Famiglia Vallagarina, Comune di Ala	Building and homeowners, AEC professionals, municipal technical staff	24
3	Prefabricated timber facades for energy refurbishment	Online, https://www.youtube.com/watch?v=JmwkWql-2HM	R2M	Architects, Engineers, Surveyors, Construction firms	33
4	Building in Wood: renovation of existing buildings	Online	/	Architects, Engineers, Surveyors	360
5	Sustainable renovation and energy efficiency: best practice and residential case studies	Onsite, Klimahouse Fair, Bolzano, Italy	/	Architects, Engineers, Surveyors	25
6	ARCA – CasaClima Sustainability Certifications and case studies #1	Onsite, Fiera di Primiero, Italy	CasaClima Energy Agency	Building and homeowners	40
7	ARCA – CasaClima Sustainability Certifications and case studies #2	Hybrid, Pergine Valsugana, Italy https://www.youtube.com/watch?v=W5WkCzWo4ws	CasaClima, Cassa Rurale Alta Valsugana (retail bank)	Building and homeowners, retail bank personnel	70 viewers + 10 in presence
8	BIM and digitalisation for a sustainable built environment. Best practices and case studies	Onsite, Milan, Italy	ASSOBIM, R2M, LIST	Architects, engineers, BIM professionals	15
9	ARCA – CasaClima Sustainability Certifications and case studies #3	Onsite, Isera, Italy	CasaClima, Comune di Isera	Building and homeowners	15
10	Energy Communities and collective self-consumption groups for apartment buildings	Online	CONFAICO Trentino	Condominium administrators	28
11	Building in Wood: durability, well-being, energy efficiency	Onsite, Bari, Italy	/	Architects, Engineers, Surveyors, construction firms	78
12	ARCA – CasaClima Sustainability Certifications and case studies #4 Inside the ALPENOS Project	Onsite, Predaia, Italy	CasaClima, ALPENOS/STP Wood design firm	Architects, engineers, Surveyors, construction firms	25
				Total	762

1.3 Deliverable structure

The core part of the current deliverable concerns the presentation of training and awareness raising initiatives performed in Italy as part of INSTRUCT demo 5. Before going through the process and description of each of them, connections to other INSTRUCT project tasks are highlighted (§2). The subsequent paragraph is dedicated to the methodology applied to the design and especially to the implementation stage of the demo (§3). After that, a detailed description of the 12 demo events is provided (§4). Paragraphs §5, §6 and §7 are respectively dedicated to results, further developments and impacts. Additional content and training materials are given in the Annexes (§8).

2. Connection to other tasks

Demo 5 has been linked to a set of technical tasks undertaken in INSTRUCT WP2 and WP3. These connections emerged either directly from trainings, through presentations of experts, discussions, and debates with the attendees, and indirectly, with some contributions collected afterwards through follow-up activities addressing the participants.

Legislative frameworks, which were investigated in T3.3, were directly tackled in 2 demo events dedicated to the so-called Superbonus 110% fiscal incentive in Italy (§4.1), as well as in the demo event on community energies and RES integration at condominium level (§4.10). Insights collected through the Superbonus 110% events allow INSTRUCT partners also to inform the structure of one questionnaire on renovation works intended for homeowners. It was developed in the framework of T3.5 and discussed in D3.5 under LIST supervision.

Skill gaps, training needs and learning outcomes for the construction value chain – some pivotal topics in WP2 – were addressed both during the events for professionals, especially in the Q&A sessions, and through follow-up questionnaires. For this last aspect, further details are provided in Annex 1.

Furthermore, some demo activities provided inputs to WP6 and help figure out homeowners' perspective on fiscal incentives for renovations, thus contributing to develop considerations for additional exploitation and roadmaps after the project lifetime.

Ultimately, Communication and Dissemination managed in WP5 were ensured for all the demo duration through social media promotion of the project, leaflets distributed, and detailed material delivered or digitally displayed during the trainings.

3. Methodologies used

Demo activities drew upon a tailored made training methodology which was adapted to each target group addressed. The training content, as well as the language to be used and the level of technical details were accurately designed on a case-by-case basis for every event in close cooperation with experts involved as speakers and trainers.

It is possible to identify some key elements which were considered to design and implement all the 12-event cycle, namely:



1. Case studies approach: in line with the description of work concerning INSTRUCT demo 5, the trainings focused on the presentation of real case studies showing participants the concrete application of sustainability and energy efficiency to construction and renovation works. Theoretical and regulatory context was always given, but subsequently translated in practical terms with examples of new constructions and renovations case studies, technologies and technical approaches applied, lessons learned, potential barriers and best practices;
2. Involvement of trainers and experts with multiple backgrounds: in order to facilitate as much as possible a comprehensive understanding of the topics on stake and to stimulate a fruitful debate, trainers and speakers were selected not only according to their expertise, but also to allow different professional backgrounds represented. In this way, the 12-event cycle took the most out of the contribution from professionals and skilled workers representing a large part of the construction sector value chain: i.e., designers, energy experts, technicians, installers, sustainability assessors, materials suppliers and developers, construction firms, etc.;
3. Training partnerships with a wide network of actors: INSTRUCT partners were involved in the design and implementation of training activities were possible. Beside them, the events cycle took advantage of cooperation with several stakeholders from DTTN network, mostly in Trentino region but also elsewhere in Italy. Among the others, energy agencies and training centres, as well as municipalities, retail banks and representative associations of real estate and built environment, architecture and engineering practices. They were equally involved either as co-organizers or speakers.

4. Demo process, tasks, events

The 12 events of demo 5 were developed around a set of thematic tracks which are listed below. For each of them, the reference numbers of the related events are indicated following the previous Table 1. Hereafter the main description of each training/raising awareness initiative is given as well as details on training set up and partners involved. Additional material can be found in §8.

Table 2 Thematic tracks of INSTRUCT demo 5 events

Thematic Track	Events included in the track
Legislative frameworks for building renovations and RES integration	1, 2, 10
Sustainable construction/renovation through timber and bio-based solutions	3, 4, 5, 11
ARCA and CasaClima certifications for new and existing buildings	6, 7, 9, 12
BIM and digitalization for sustainability	8

4.1 Superbonus 110% - Fiscal and technical aspects of the national incentive (demo events 1-2)

The initiative was designed as an informative session replicated in 2 different locations: the first one took place in the Municipality of Pomarolo, the second one in the near Municipality of Ala.



The main purpose was to raise awareness on the existing Italian fiscal incentive called Superbonus 110% to perform residential buildings renovations and massive energy refurbishment.

The need to clarify the functioning of this measure emerged widely in Italy at that time, and also at a local level. For this reason, the abovementioned Municipalities decided to support as co-organizers the deployment of 2 Superbonus informative sessions, addressing building, homeowners and citizens in a broad sense, together with a local public welfare association called Distretto Famiglia Vallagarina, which already ensured its support to INSTRUCT at the submission stage.

As Superbonus incentive comprises different legal and technical requirements to effectively boost residential renovations, the topic was approached covering the following aspects: legal/administrative; design and assessment of technical requirements for refurbishment; execution/renovation works and installation.

A case study approach was used to give concrete examples of the costs of interventions, range of refurbishment measures available and improvements of buildings.

Real case studies were presented by a local firm operating as a Superbonus general contractor and were based on local ongoing renovations at that time in Trentino. Different typologies and size of buildings were considered in order to give the audience a comprehensive overview and insights on how best exploit the fiscal incentive at different building scales.

3 experts were involved as speakers in both the informative sessions: an entrepreneur and installer; an engineer, with design and technical assessment skills to ensure that renovation interventions complied with Superbonus; an accountant who provided clients/end users with legal advice on how the incentive could be requested, what were the procedural, fiscal and technical assessment requirements, etc.

Although homeowners were the main target group of the informative sessions, even some policy-makers, city councillors and municipal officers (i.e. technical office staff) seized the opportunity to attend, thus confirming a crosscutting interest in the topic also from public administrations.

Selected materials from the second Superbonus event in Ala are included in Annex 2.

Table 3 Superbonus 110% - Event 1

Training/event name	Superbonus 110% - Event 1
Organisation	On site informative session
Country	Italy
Duration	2h
Partners	Distretto Famiglia Vallagarina (welfare network): sponsorship Comune di Pomarolo (Municipality): practical organization
Target audience	Building and homeowners, tenants, policy-makers and municipal officers
Language	Italian
Time and location	24th September 2021, Pomarolo, Municipal historic building



Table 4 Superbonus 110% - Event 2

Training/event name	Superbonus 110% - Event 2
Organisation	On site informative session
Country	Italy
Duration	2h
Partners	Distretto Famiglia Vallagarina (welfare network): sponsorship Comune di Ala (Municipality): practical organization
Target audience	Building and homeowners, tenants, policy-makers and municipal officers
Language	Italian
Time and location	15th October 2021, Ala, Municipal historic building

4.2 Prefabricated timber facades for energy refurbishment (demo event 3)

The event was a 2-hours webinar intended for professionals and workers from the construction sector willing to improve their know-how on timber-based innovative interventions for refurbishment and certification of quality.

The event was co-designed and arranged in cooperation with R2M and hosted on its digital Academy.

The first part provided attendees with information on INSTRUCT and the EU-funded Lightness Project, participated by R2M, where deep energy renovations are at the core.

Before diving into the main presentations, a quick interactive session was launched, asking participants to indicate their role in the construction sector and how much they were familiar with timber buildings and with certification systems for timber quality.

The main session of the webinar focused on three presentations. The first one concerned the added value of certified timber buildings through the so-called ARCA system¹, an Italian protocol managed by DTTN and focused on durability, well-being and quality for new wooden constructions and renovations. The second presentation regarded a local research project – called Renew Wall² - which developed a technology for energy refurbishment based on prefabricated timber panels. Technical aspects (i.e. the composition of the integrated prefabricated layers) as well as the advantages of this technology (i.e. thermal insulation) were explained by presenting the different project phases. Thirdly, there was a presentation from the EU funded project Build-in-Wood, participated by DTTN as a project partner, on the innovative wooden structural system under development, conceived for new buildings and renovations.

¹ ARCA certification system (in Italian) <https://www.arcacert.com/> (accessed on 15th January 2023).

² More info on the Renew Wall technology (in Italian): <https://www.renew-wall.com/> (accessed on 16th January 2023).



The expert speakers came mostly from R2M and DTTN internal staff; concerning the Renew Wall technology, its scientific project manager was directly involved, whereas the ARCA and Build-in-Wood presentations were held by DTTN-ARCA team.

After the webinar the attendees received some INSTRUCT informative materials, a certificate of attendance produced by DTTN-R2M and part of the training presentations. The link to the online training content is available in Annex 3.

Table 5 Prefabricated timber facades webinar – Overview

Training/event name	Prefabricated timber facades for energy refurbishment
Organisation	Webinar
Country	Italy
Duration	2h
Partners	R2M Solution – INSTRUCT partner
Target audience	Architects, engineers, surveyors, design practices and construction firms
Language	Italian and English
Time and location	3 rd March 2022, online environment

4.3 Building in Wood: renovation of existing buildings (demo event 4)

This online workshop was part of the so-called “ARCA in Tour” initiative, a yearly event cycle organized by DTTN to share best practices, methodologies and case studies on wooden buildings and the ARCA Certification System. The present workshop focused on building renovations using timber structures and components, approaching this general topic through the following in-depth analysis: design guidelines to enhance durability in timber buildings; 2 case studies on rehabilitation of existing wooden buildings; dry foundation for light structures; protection and maintenance of wood components; structural thermal-acoustic insulation; energy and architecture renovation case study through prefabricated wooden panels (Renew Wall technology).

Speakers were mostly affiliated to the ARCA Certification network of professionals and construction firms and represented different actors from the value chain and industry: engineers, architects, wood technical experts in prefabricated components, suppliers of construction materials.

The workshop was accredited to the Order of Architects of Florence (local professional branch of the national Order of Architects). By this way, the training contributed to the recognition of Continuing Professional Development (CPD) Credits for participating architects from Florence enrolled (1 CPD Credit per training hour = 4 Credits).

Table 6 Building in Wood: renovation of existing buildings – Overview

Training/event name	Building in Wood: renovation of existing buildings
Organisation	Online workshop



	4 CPD Credits issued to architects affiliated to the Order of Architects of Florence
Country	Italy
Duration	4h
Partners	Designers, construction companies, construction materials suppliers affiliated to the ARCA network
Target audience	Mainly architects, but also engineers, surveyors, construction firms
Language	Italian
Time and location	23 rd March 2022, online environment

4.4 Sustainable renovation and energy efficiency (demo event 5)

This in-presence training was dedicated to design guidelines and case studies related to residential buildings. The main focus was on the use of sustainable and biobased materials, such as wood and straw, to undertake deep energy renovations combined with aesthetic, comfort and well-being of occupants.

The content of this training was based on a slideshow of residential case studies mostly certified under ARCA and/or Casa Clima³ protocols for sustainable buildings. Italian leading certification of green buildings were at the core, as the expert speakers concerned are accredited professionals to both the certification systems.

Particular attention was paid on the early design concept of the renovation projects addressed. Furthermore, some insights on the biobased materials and their quality (i.e. carbon sequestration, low environmental impact, insulation properties, etc.) were equally provided. With regards to straw renovation case studies, the training aimed at underlining the concept of zero embodied energy in buildings. Connections between the design and construction stages were remarked, as well as considerations on appropriate combination of the single interventions with the urban and territorial context of reference.

As for the typology of buildings, a wide range of renovation solutions was presented for single-family buildings, small and large apartment buildings, historic buildings, both for social housing and private households. Wood prefabrication schemes for deep renovation applied to social housing were largely addressed.

The seminar was held in the premises of the Klimahouse Fair, a national leading exhibition yearly organized in Bolzano, Italy, which deals with sustainability and energy efficiency in the built environment.

³ <https://www.agenziacasaclima.it/it/certificazione-edifici-1405.html> (accessed on 16th January 2023).



Table 7 Sustainable renovation and energy efficiency training - Overview

Training name	Sustainable renovation and energy efficiency: best practice and residential case studies
Organisation	On site seminar
Country	Italy
Duration	2h
Partners	2 architecture practice from Northern Italy involved as speakers
Target audience	Mainly architects and designers; ARCA and CasaClima certified professionals
Language	Italian
Time and location	19 th May 2022, Bolzano, Klimahouse Fair

4.5 ARCA – CasaClima Sustainability Certifications #1 (demo event 6)

This event marked the launch of a raising awareness mini-tour specifically focused on the ARCA and CasaClima certifications, their features and pragmatic applications to case study of a wide range of buildings. The main objective of this initiative was to spread information at a local scale – namely in the Trentino region – on the added value of certified buildings from different perspectives: economic value, cost-effectiveness, environmental quality, complementarities of the two protocols, reliability of independent evaluators. In this context, INSTRUCT focus on skills and certified qualification was a cornerstone, since experts involved as speakers were accredited professionals and trainers from the ARCA and CasaClima training centres, with proved experience in sustainable design and construction works. DTTN-ARCA team and CasaClima Energy Agency personnel cooperate for the design and implementation of these trainings.

The first CasaClima-ARCA event took place in Fiera di Primiero and was intended for building, homeowners and hotel owners/managers. The latter sub-target group is justified considering that the selected location is a relevant Alpine destination and there are several tourist accommodation and facilities which are in need for renovation. For this reason, residential and hotel renovation case studies were equally presented. Moreover, the venue selected to host the event was a local hotel recently renovated and extended using wood, which also served itself as a case study.

Attendees were firstly introduced to the basic features of the ARCA and CasaClima protocols. Technical aspects were addressed in a certain measure, but the focus was on the description of the certification process, the independent audit put in place and the high-level standard required to certify a good quality renovation. At the same time, most common mistakes in renovation works were mentioned (i.e. thermal bridge, lack of air tightness, indoor air quality shortcomings, etc.) together with guidelines offered by the concerned certification schemes to avoid them.

The second session of the event was dedicated to the presentation of some case studies of certified buildings under the “CasaClima R” protocol and ARCA guidelines for wooden extensions of existing buildings. A step-by-step presentation of the design and renovation processes was put in place,



showing the consistency of the measures applied and the actions undertaken to respect the clients expectations.

This practical session culminated in the site visit to the upper part of the event venue, a wooden extension of the existing hotel including a SPA centre and swimming pool. Participants had the chance to see in person the technical details and quality of the structure which followed the ARCA guidelines.

Table 8 CasaClima Sustainability Certifications and case studies #1 - Overview

Training name	CasaClima Sustainability Certifications and case studies #1
Organisation	On site seminar + site visit
Country	Italy
Duration	2h
Partners	CasaClima Energy Agency; CasaClima and ARCA certified professionals
Target audience	Building and homeowners, hotel owners and managers
Language	Italian
Time and location	30 th May 2022, Fiera di Primiero, Brunet Hotels Conference Room

4.6 ARCA – CasaClima Sustainability Certifications #2 (demo event 7)

This training was the second dedicated to ARCA and CasaClima certifications.

It was held as a hybrid event in the premises of Cassa Rurale Alta Valsugana, a local retail bank based in Pergine (Italy).

The event was designed and implemented in line with the previous one (S4.5), focusing on the features of both the already mentioned green building schemes and providing the audience with case studies of residential and hotel buildings. The choice to take in consideration again this double typology of buildings was due to the high potential for renovation in Pergine and its surroundings related to touristic facilities. Building and homeowners were the main target group.

After the introduction on CasaClima and ARCA protocols, a design firm representative who is also an ARCA, CasaClima and Passivhaus accredited professional, showed some case studies where the 3 protocols were applied. The main intervention regarded a sustainable renovation design and application to a hotel building which was completely restored as a “ecologic hotel”. Monitored data on post-renovation energy consumption and savings were also showed in order to evaluate the optimization work carried out and the return of the investment for the building owner.

In conclusion, there was a presentation from the retail bank personnel who explained the lending opportunity for private building and homeowners who intend to build, refurbish, or purchase certified buildings under the CasaClima and ARCA protocol. This sort of local “energy efficiency and sustainability” mortgage initiative was made possible thanks to a specific partnership agreement with CasaClima and DTTN.



Table 9 CasaClima Sustainability Certifications and case studies #2 - Overview

Training name		CasaClima Sustainability Certifications and case studies #2 - Overview
Organisation		hybrid event
Country		Italy
Duration		2h
Partners		CasaClima Energy Agency; ARCA, CasaClima and Passivhaus professionals
Target audience		Building and homeowners, hotel owners and managers, retail bank personnel
Language		Italian
Time and location		8 th June 2022, Pergine, Cassa Rurale Alta Valsugana office building

4.7 BIM and digitalisation for a sustainable built environment (demo event 8)

This training was conceived as a 3-hours event to couple digital tools and technology, especially BIM-based, with sustainable renovation of existing buildings. The aim was to showcase how BIM can support and streamline renovation processes, increasing the quality and accuracy of the intervention and contributing effectively to reach high-standard sustainability goals for the built environment.

The training mostly focused on the design stage and took in consideration both private and public buildings as case studies (i.e. office buildings, large company headquarters, residential apartment buildings, etc.). Given the lifecycle stage in consideration, the target group mostly consisted of designers.

In parallel, the training provided a robust introduction focused on INSTRUCT approach related to skills, competencies and training needs for the construction value chain. This topic was introduced through an overview presentation of R2M partner on local accreditation bodies for skill recognition across Europe, together with the set-up of an EU Level Forum for these entities in the framework of INSTRUCT. The connection between skills, BIM and digital twins was ensured by LIST partner presentation on the added value of these resources to deliver low-carbon and sustainable buildings. Connections between INSTRUCT, BIM4VET and BIMEET projects were established to show participants the importance of shaping consistent professional profiles and learning outcomes for those working in this field.

The main session on BIM for renovation started with an overview of the EU funded project BIM4REN by R2M. It focused on the benefits of developing a digitized one-stop-shop to supervise and implement all the renovation process, by showing use cases of concrete application and the integration of research tools helping the collection and management of data.

The following presentations conducted an in-depth analysis of the opportunities given by BIM to optimize renovations in compliance with sustainability standards. One renovation use case of office building which obtained LEED certification was presented. Furthermore, the whole process from laser



scanning to point clouds to the development of tailor-made renovation models was tackled, where applied to municipal buildings and residential ones, the latter also connected to Superbonus incentive.

Attendees were finally invited to make their contribution to skill needs and state of the art of BIM application according to their personal experience as professionals.

The training took advantage of the cooperation with ASSOBIM, one of the main networks of BIM businesses, practitioners, and stakeholders in Italy. The event was additionally sponsored by relevant Italian associations and networks of enterprises from the construction sector, such as Polo Edilizia 4.0, Rebuilding Network, Edinnova.

Finally, the training was affiliated to the EU Sustainable Energy Week 2022 and recognized by EUSEW organizers as a “Sustainable Energy Day” linked to the initiative.

Table 10 BIM and digitalisation for a sustainable built environment - Overview

Training name	BIM and digitalisation for a sustainable built environment
Organisation	hybrid event
Country	Italy
Duration	3h
Partners	R2M, LIST, ASSOBIM, BIM engineering and design firms
Target audience	Architects, Engineers, BIM experts
Language	Italian/English
Time and location	10th June, Milan, Voco Hotel Conference Room

4.8 ARCA – CasaClima Sustainability Certifications #3 (demo event 9)

The event was the third one dedicated to the CasaClima and ARCA certifications for building and homeowners. It was designed following the previous content structure (§4.5, §4.6), but focused only on case studies of residential new constructions and renovations.

It took place in Isera and was arranged in cooperation with the municipality, which recognized in it a good opportunity to raise awareness on sustainability and energy savings in light of the ongoing energy crisis in Europe and cost-related concerns widely raised by building owners and occupants.

For this reason, the event was slightly adapted to the new context and provided an initial overview on ways to effectively decrease energy consumption through renovation works.

A cost estimation overview of typical works (i.e., ETICS, thermal insulation, windows/frame replacement, etc.) and related energy savings and benefits were presented. This session was held by a CasaClima certified system designer and installer.

The ARCA-CasaClima green building rating schemes were thus explained as an additional way to improve building performance according to high-level quality standards. Economic savings were



coupled as usual with air and environmental quality advantages, building durability and attention to technical details, all of which are addressed by independent auditors.

The case studies were presented by a CasaClima-ARCA engineer and regarded two residential buildings under development and thus still pending the final sustainability labels. Explaining the ongoing construction works allowed to describe the design specifications, construction works and the whole process step by step.

Table 11 ARCA – CasaClima Sustainability Certifications #3 – Overview

Training name		ARCA – CasaClima Sustainability Certifications #3
Organisation	On site event	
Country	Italy	
Duration	2h	
Partners	CasaClima Energy Agency, Municipality of Isera, CasaClima and ARCA accredited experts	
Target audience	Building and homeowners	
Language	Italian	
Time and location	21 st September 2022, Isera, Municipal Hall	

4.9 Energy Communities and collective self-consumption groups (demo event 10)

This training was held online and intended to tackle energy communities and available solutions to implement and share RES at the scale of one (or more) residential buildings.

The topic was defined in cooperation with the provincial association representing condominium administrators (CONFAICO Trentino) and with the Provincial Agency for Energy (APRIE) to make learners aware of the most updated normative and technical aspects related to RES integration in buildings and to showcase some real case studies developed in Trentino over the last years.

The co-organizers of the training, together with DTTN, are members of the so-called “Condominium Working Group” established by Trentino provincial government in order to face all the questions and issues related to energy refurbishment, sustainability and proper management of residential buildings.

The rationale to provide a training session on the aforementioned topics was the limited knowledge and information on new rules and opportunities to improve sustainability of residential buildings through RES and organizational models such as energy communities. Furthermore, a need for more information to share with tenants and homeowners was recognized by building managers and condominium administrators as well.

APRIE introduced the normative framework, functioning, multiple benefits to establish energy communities and the so-called RES self-consumption groups at residential scale. Indeed, the energy agency has wide expertise and a specific mandate from the local government to inform all the relevant



stakeholders on these aspects as well as to cooperate with Municipalities and research entities to identify energy potential and optimized dimensions for energy communities.

The following two presentations were respectively delivered by representatives from a local social energy cooperative and from an energy provider operating at local and national levels.

The main purpose was to further detail the differences between energy communities and RES self-consumption groups through practical examples. The advantages were presented considering the economic, environmental and social impacts related to their deployment. In addition, there was also an overview of possible combinations with national/local fiscal incentives to install photovoltaic systems at condominium level.

Energy communities were explained in relation to actors involved (i.e., consumers/prosumers, energy producers, community managers, RES system owners, etc.) and to some deployment at local scale, highlighting the design and aggregation process and some lessons learnt.

Table 12 Energy Communities and collective self-consumption groups – Overview

Training name	Energy Communities and collective self-consumption groups
Organisation	Webinar
Country	Italy
Duration	2h
Partners	CONFAICO, APRIE Agency, local energy providers from Trentino
Target audience	Condominium Administrators
Language	Italian
Time and location	21 st October 2022, digital environment

4.10 Building in Wood: durability, well-being, energy efficiency (demo event 11)

This training was offered in the framework of the so-called “ARCA in Tour”, as previously done for demo event n° 4 (§4.3).

This time the event took place physically as a 5-hours integrated conference and workshop session for architects, engineers, and technicians of the construction sector. Starting from the ARCA certification, the objective was to provide learners with a comprehensive overview of quality, durability and well-being when building in wood through insights and case studies. A value chain approach was adopted, since the speakers represented accredited firms to the ARCA system, whose competencies ranged from design and construction to the development and supply of building components and systems.

The working sessions were split in 2 thematic parts. The first one focused on how durability of wooden structures can be ensured. In this framework, trainers presented one by one the following insights: design guidelines, “do and don’ts” to deliver quality timber buildings; waterproofing and air tightness; protection and maintenance solutions for the envelope.



The second thematic session concerned indoor environmental quality and energy efficiency, addressing the following insights: energy efficiency protocols; comfort solutions related to ventilation and cooling systems; insulation systems, design of thermal and ETICS systems tailored for building structures.

An overarching introduction on “Why build in wood today” was delivered to underline the importance of wood as a sustainable construction material in view of the current national and international policy trends and the construction market trajectories.

Case studies for each topic were presented and discussed with participants.

Table 13 Building in Wood: durability, well-being, energy efficiency – Overview

Training name	Energy Communities and collective self-consumption groups
Organisation	On site congress and workshop
Country	Italy
Duration	5h
Partners	Firms and professionals from the ARCA certification network
Target audience	Engineers, Architects, Surveyors, technicians of the built environment
Language	Italian
Time and location	26 th October 2022, Bari, Nicolaus Hotel Conference Centre

4.11 ARCA – CasaClima Sustainability Certifications #4 (demo event 12)

This training was the final one of both the ARCA-CasaClima mini-tour and INSTRUCT demo 5 itself. It was conceived slightly differently than previous trainings, as it was fully dedicated to a timber building case study which was also selected as the venue of the meeting.

The so-called ALPENOS building was designed and built by STP/ALPENOS firm as its new headquarter and as a showcase of its commitment to wood-based sustainability. Being subject to a double certification process under the ARCA and CasaClima labels, the building was also identified as the core of the training session due to its regeneration value and potentials. It lays on a misused mixed industrial-commercial area and was designed in close cooperation with the municipal authorities to ensure a proper inclusion in the surrounding rural environment and to become a sustainability landmark for the territory.

The target group of this training consisted of professionals from the construction sector, who could take advantage of a peer-to-peer exchange with STP staff especially during the site visit to the building.

The training was split in two sessions. The first one dealt with the ARCA-CasaClima certifications and the project development of the ALPENOS building. Given the target addressed, ARCA and CasaClima presentations focused both on quality requirements for sustainable buildings as well as on upskilling and training opportunities offered by the respective Academies. A second presentation delivered by STP staff framed the regeneration project and provided information on the misused area where the office building was constructed. Design and urban-rural planning concerns were taken into account.



The second session of the training took place as a guided tour through the internal and external parts of the building. Given that it was still under construction in some limited parts and/or pending finishings, attendees could see the step-by-step process still ongoing.

STP staff described the functionalities of internal spaces, materials selected and structural choices for the timber frame. Valuable considerations were also dedicated to energy efficiency, high performance of the building and indoor comfort for occupants and workers. Finally, some insights were provided on challenges faced during the construction works and renovation of the misused commercial area.

Table 14 ARCA – CasaClima Sustainability Certifications and case studies #4 – Overview

Training name	ARCA – CasaClima Sustainability Certifications and case studies #4
Organisation	Physical event and site visit
Country	Italy
Duration	2:30 h
Partners	STP/ALPENOS firm, CasaClima Energy Agency
Target audience	Engineers, Architects, Surveyors, technicians of the built environment
Language	Italian
Time and location	28 th October 2022, Predaia, ALPENOS new office building

5. Results

The process discussed above leads to a set of assumptions reflecting in the results of demo 5. They help frame the state of the art, perspectives and viewpoints of different target groups involved in training activities. Furthermore, the results underline valuable aspects related to skills, knowledge and training needs of multiple stakeholders when energy efficiency and sustainability are taken in consideration.

The results presented below emerged clearly during the training process, but in particular over the Q&A sessions and even through the feedback provided by learners, trainers and experts afterwards.

To present them consistently, the results are grouped below by the original 4 thematic tracks mentioned at the beginning of the previous paragraph (§4) and recalled hereafter in Table 15.

Table 15 INSTRUCT demo 5 by thematic track

Thematic Track	Events included
1. Legislative frameworks for building renovations and RES integration	1, 2, 10
2. Sustainable construction/renovation through timber and bio-based solutions	3, 4, 5, 11
3. ARCA and CasaClima certifications for new and existing buildings	6, 7, 9, 12



4. BIM and digitalization for sustainability	8
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5.1 Takeaways from thematic track 1

From sessions dedicated to the **Superbonus incentive** for residential buildings renovation, the following inputs were collected:

- Homeowners demonstrated a remarkable interest for the functioning and requirements to access the incentive. **Legal and economic aspects** were though considered more relevant than quality of the interventions and technical skills needed to perform such works;
- Homeowners found somehow **difficult to distinguish between renovation works covered** by Superbonus – only energy improvements - and those not covered, such as painting works, finishings, maintenance of facades, apartment layouts, etc. Probably this was due to the large number of incentives for renovation existing in Italy and to the lack of accurate information to move through them. Experts intervening in INSTRUCT demo helped clarify on this point, providing concrete examples of what can and cannot be funded through Superbonus and what is the range of interventions available to improve energy efficiency;
- There was **no particular concern on certified skills** from professionals/workers involved in Superbonus renovations. This can be partially explained considering that this fiscal incentive does not imply as mandatory the use of certified workers. Nevertheless, participants recognized that **close cooperation among professionals and technicians** from different backgrounds is highly recommended to carry out renovation processes in a cost-effective and efficient way. Such integration often leads to time saving and an easier activation of the subsidy's procedure. It can also speed up the technical assessment procedure, avoiding common issues and proving that energy interventions performed comply with the requirements set by the national authorities.

From the single session on **energy communities and RES integration** at residential level, the target group of condominium administrators remarked the following points:

- The national **legal framework** on these topics is **quite uncertain** so far and it is often unclear how to operate at the building level to integrate RES shared systems or benefit from energy communities. Administrators stressed that specific rules on the so-called „self-consumption collective groups” are still missing. This aspect discourages condominium administrators as well as homeowners to seize the fiscal and energy advantages associated to such interventions;
- Beside these shortcomings, administrators find **difficult to properly inform homeowners** on new opportunities related to renewables. On the one hand, this is due to a **lack of expertise** from their own, considering the novelty of these opportunities; on the other hand, they admit to be overwhelmed by renovation procedures activated through the Superbonus incentive. This last aspect, together with the complexity of renovation procedures, leaves little room to consider other energy efficient and sustainable solutions or schemes. These issues may finally lead to overlook the potentialities at stake or to collect lower support and interest by homeowners than required to launch the installation procedures for RES systems at building level or to enter in a developing energy community;



- An urgent **need for more information, training and upskilling** on the concerned topics was then broadly confirmed by the audience. Administrators consider energy agencies and in general the public authority as the main actors who should facilitate the dissemination of basic information and organize training, both on the legal and practical requirements related to RES systems and energy communities. Anyway, skilled workers (mostly designers and installers) are assumed to be decisive to guide building managers and occupants through the implementation process.

5.2 Takeaways from thematic track 2

These training sessions were exclusively intended for **professionals, workers and contractors** from the construction value chain. In this framework the following elements and inputs were collected:

- In terms of **educational background**, most of attendees were graduated in architecture and engineering⁴. This should imply a quite elevated level of entry knowledge and skills when dealing with the topics of the sessions. Lower numbers were surveyors and industrial experts. In certain cases, also few researchers in sustainable construction and energy efficiency took part. Concerning the **prevailing areas of specialization** of the attendees, designers represented the vast majority. This was sometimes combined with energy auditor roles. Construction companies and system installers represented a minority, but where somehow always present during the concerned events;
- As regards **sustainability research projects and innovations** for new and existing buildings, attendees asked more information on the practical installation of such technologies, their performance and market availability, as well as on challenges faced by developers to produce and adapt them to the built environment. Similar questions arose for example throughout the presentation of the Renew Wall and Build-in-Wood prefabricated systems (§4.2, §4.3);
- A cross-cutting theme was the request from attendees of more information on **skills required and training available to work in the field of timber and bio-based solutions**. Insights were provided by trainers to explain the available opportunities and the pathways to follow to become experts in this field. Accreditation and certification of skills delivered by private and public entities/agencies in Italy were equally mentioned;
- A peculiar interest on **quality and performance of bio-based materials** emerged frequently. Learners were keen on knowing details on the performance and properties of wood and straw for example, their combination with other materials (i.e., steel): all these aspects were tackled through the case studies presentations;
- The **integration of such materials across the building lifecycle** was another topic of interest. This aspect could be addressed considering all the stages of buildings, from the design to the construction/renovation phase, up to the dismissal and circular reuse of certain components. As the main perspective of trainers was an integrated approach, it was easier for learners to understand the multiple implications of bio-based materials over the whole project of construction/renovation.

⁴ This assumption draws upon data collected by DTTN in the registration phase for physical and/or online events.



5.3 Takeaways from thematic track 3

These training sessions were mostly intended for homeowners, building owners and generally for end-users interested to be informed on the advantages stemming from green building certifications. Only one session was specifically designed for professionals of the construction sector (§4.11).

- Homeowners and end users demonstrated particular attention to **the features of sustainable and energy efficient buildings**. These aspects went hand in hand with CasaClima and ARCA certifications, as the respective schemes guide the delivery of quality building under certain rules. The most requested information regarded fire resistance requirements (for wooden buildings), thermal insulation standards, indoor air quality and well-being, air tightness;
- Given the raging of energy crisis in Europe in 2022, participants drew particular attention to **energy savings**. As both the concerned certifications imply the respect of high energy performance standards for new and renovated buildings, as well as specific tests undertaken by independent assessors, their added value could be easily perceived. Expert speakers provided concrete examples on these tests during case studies presentations;
- Beside their quality assurance, **green building certifications** were also investigated for their **cost-efficiency** and **economic added value**. Attendees asked details on the return of the investment related to certification schemes and an estimation of the increased value of certified buildings. Insights on the economic side came also from bank experts and lending institutions (§4.6), which underline existing agreements at local level with ARCA and CasaClima certification bodies to issue energy efficiency mortgages for certified renovation/construction works of residential buildings.

5.4 Takeaways from thematic track 4

This training involved professionals from the BIM environment as the main target group, together with professionals who would like to increase their skills in this field. The following inputs were collected during the Q&A session:

- BIM procedures are only partially deployed and acknowledged in the construction and renovation market. A point broadly recognized by attendees is the **digital divide still affecting the construction sector**, combined with a traditional approach to the building lifecycle, where the use of relatively new technologies and tools is limited;
- BIM technologies are a valuable tool when deployed to support sustainability renovation works. They help streamline and optimize the whole process – both in the design and implementation phase, but their **acceptance by clients and end users is still limited**. This is linked to real (or perceived) higher costs of the final works, but mostly to a limited knowledge of the support that BIM can provide in building projects. In this framework, designers remarked the difficulties to cooperate on BIM projects when clients are public entities, despite the results are usually well accomplished;
- Considering **BIM-based skills** of professionals and workers, a large number of the attendees noticed that at least in the Italian market **a step forward would be necessary**. Upskilling and training on new approaches is urgent to effectively tackle contemporary building projects. A possible reason for a slow development of this skills is identified in a **generation gap** in the



labour market. It can be reasonably assumed that in the near future the number of qualified workers will rise faster, as BIM technologies are increasingly embedded in university programmes and in vocational training.

- Finally, participants noticed that a **new visibility for the role of “BIM and sustainability expert”** could be gradually developing. This is due to complementarities and the added value of this combined expertise, especially when it comes to challenging renovation projects which implies quite advanced knowledge and skills to manage the process in a systemic and efficient way.

6 Further development

This paragraph comprises some considerations and improvements that could be applied for optimizing the design and implementation of training and information sessions delivered in INSTRUCT demo 5. They are based on an ex-post evaluation of the entire event cycle and on the feedback received by participants, trainers, and co-organizers.

As a general remark, the case study approach undertaken can be considered a valid and effective learning resource. It allowed participants to feel constantly engaged and to see how the assumptions on energy efficiency and sustainability can be deployed.

In this framework, the “case study combined with site visit” approach revealed particularly effective and welcomed by the audience and the organizers. Extending it as much as possible in the future is highly recommended for the increased likelihood of participants to be actively involved in the discussion and to directly experience the addressed topics. Furthermore, this dynamic approach streamlines interactions between learners and trainers/experts, facilitating the understanding in a practical way.

Concerning demo events intended for building and homeowners, the close cooperation with municipal authorities and local organizations proved crucial. Such a local engagement is necessary to raise awareness and interest at the local level, especially when the co-organizing entity is committed to promote sustainability in the built environment. This allows to communicate more effectively towards the target audience when spreading details on the informative sessions, as well as to make more tangible the commitment to certain aspects by the co-organizer. This proved especially true when it comes to municipal authorities.

Structured informative sessions focused on fiscal incentives for renovations (i.e., Superbonus 110%) were perceived beneficial by all the actors involved and by attendees themselves. Further developments in this direction should be stimulated to cover incentives that will be made available in the next years in Italy at the national, regional, or local level. As far as a tailored approach remains pivotal when approaching building and homeowners, INSTRUCT demo events confirmed that the involvement of different professional backgrounds is recommended to facilitate clear and complete information and to respond to any doubts set by the audience.

In the long-term, a structured approach to fiscal incentives for renovations and green building certifications could lead to the creation of “permanent fora”, at least at the local level. Demo 5 were put in place mostly in Trentino region and proved that a broad cooperation between multiple actors is



possible to raise awareness of homeowners on energy efficiency and qualified construction and renovation works. Such a cooperation between professionals, technicians, energy agencies, certification bodies and municipal authorities could represent an added value to deliver additional informative sessions in the future. Some exploitation pathways in this direction have been considered in INSTRUCT WP6 and discussed among project partners.

On the other hand, demo events for professionals of the construction value chain revealed useful to further improve their knowledge and skills in the direction of an integrated approach to sustainable design and implementation of works. Intensive sessions were focused especially on wooden buildings and timber renovations combined with ARCA and CasaClima sustainability protocols. These training were based on existing and already tested events for professionals which DTTN have been organizing for several years at different territorial scales. Improved combination of wood training sessions with both the sustainability protocols could prove further beneficial for attendees in the future. INSTRUCT demo 5 remarked complementarities of ARCA and CasaClima systems and emphasized the value of certified skills to deliver quality buildings. Furthermore, it helped identify skill gaps over the whole construction process, by emphasizing the needed competences in each stage of work.

Concerning the organization aspects of training for professionals, representative associations (i.e., architects and engineers' orders) are definitely core actors, whose cooperation can spread the voice and provide a guarantee of quality training by recognizing and issuing CPD Credits which are mandatory and required on an annual basis to perform working activities in the construction sector.

A final comment can be done in relation to the overall methodology and structure given to the events cycle. Combined theoretical and practical sessions proved useful for learners and were appreciated by trainers and experts involved. To go a step further in the future, it could be reasonable to introduce online, or on-site interactive sessions based on digital tools (i.e., surveys, quizzes, word clouds, etc.). This could make the training more dynamic and help collect relevant information on participants background as well. The latter point could be useful also for training design aspects, in order to fine-tune the content in relation to actual skills, training needs and gaps remarked by the target group.

7 Impact

To take in account the energy/environmental/investment impacts of demo 5 and its training activities, the methodology presented in the technical annex of INSTRUCT project Grant Agreement is followed. The number of trainees, learners and participants is split in 3 main categories already introduced in §1.1. They represent the primary target groups assigned to demo 5.

The impact is given as follows, with the specific indexes defined in the methodology in terms of **energy savings, renewable energy production and investment in sustainable energy**.

The total number of attendees in INSTRUCT demo 5 is 762, against an expected number of 600 at the proposal stage. The distribution of participants is quite different from what expected originally. What is immediately clear is that the main target group reached consists of professionals and workers from the construction sector value chain, corresponding to around 536 attendees. The second group is represented by homeowners, who are equal to 198. The last and lowest group by far is given by condominium administrators, corresponding to 28 trainees.



Compared to INSTRUCT technical annex, professionals and contractors were coupled, as it was particularly complicated to separate them in specific sub-groups. Most of them belong to both the categories, so they have been considered jointly. In any case, this fact does not affect the final calculation of impacts, being expressed in technical annex as the same – 30% effectiveness ratio – for both the categories.

Impacts are expressed below by single table.

Table 16 Primary energy savings triggered by INSTRUCT demo 5

Attendees by category	Number	N° of homes	Energy saving (MWh/yr/home)	Effectiveness ratio (*)	Energy saving (MWh/yr)
Homeowners	198	1,3	7	10%	180
Professionals and contractors	536	17,8	7	30%	10.017
Condominium managers	28	3,7	7	10%	103
Totals	762				10.300

Table 17 Estimated energy produced from RES in INSTRUCT demo 5

Attendees by category	Number	N° of homes	From RES (MWh/yr)	Effectiveness ratio (*)	Total energy from RES (MWh/yr)
Homeowners	198	1,3	1,25	10%	32,17
Professionals and contractors	536	17,8	1,25	30%	1.789
Condominium managers	28	3,7	1,25	10%	12,95
Totals	762				1.834,12

Table 18 Investments in sustainable energy triggered by INSTRUCT demo 5 (in million Euro)

Attendees by category	Number	N° of homes	Estimated investment per home (€)	Effectiveness ratio (*)	Total investment (€)
Homeowners	198	1,3	30000	10%	772.200



Professionals and contractors	536	17,8	30000	30%	85.867.200
Condominium managers	28	3,7	30000	10%	310.800
Totals	762				86.949.400

8 Annexes

Annex 1: online questionnaire on skill gaps, training needs and learning outcomes

In close connection with demo 5, a survey was conducted by DTTN to inform some WP2 research and investigations and to contribute to D2.3 developed by Cardiff University.

The main purpose of the survey was to collect specific data and insights from Italian construction workers around key topics addressed in D2.3, namely skill gaps, training needs and learning outcomes.

The survey has been conducted online via Microsoft Forms from December 22nd, 2022, to January 14th, 2023. It was disseminated through online channels (email and newsletter) to selected participants of demo 5 training, when they had explicitly given their consent to receive further information on INSTRUCT. Furthermore, professionals from the “ARCA Network” – the timber certification broadly addressed across demo 5 – were invited to take part in the consultation. Their contribution could be potentially valuable, as some of them are certified practitioners, somehow sensitive to skills and related topics.

Structure and questions of the survey

The survey is developed around 4 parts:

1. Introduction: purpose of the survey in the context of the INSTRUCT project, description of the target group and focus of the technical domain (energy efficiency and sustainability in the construction sector);
2. Ethics;
3. General information of the respondent;
4. Skill gaps, training needs and learning outcomes according to the respondent.

The survey was written and handed out in Italian. What follows is the English transcript.

Introduction

Habitech - Distretto Tecnologico Trentino S.c. a r.l. SB - intends to involve you in the demonstration activities conducted in Italy and other European countries as part of the INSTRUCT project (Grant Agreement No. 894756).

The INSTRUCT project is currently investigating the link between training and energy efficiency in buildings with the aim of proposing a comprehensive operational framework capable of preparing a new generation of technicians and professionals in the sector.



This consultation focuses on the issues of skill gaps, training needs, and learning outcomes and intends to analyze how they are perceived and experienced by construction professionals, with particular reference to the areas of energy efficiency and sustainability in construction.

The results of this consultation will inform, in aggregate and anonymously, the research activities currently underway within the project.

For more information on INSTRUCT: <https://instructproject.eu/>

Informed consent

1. This consultation is conducted by Habitech - Distretto Tecnologico Trentino S.c. a r.l. SB - as a partner in the European project INSTRUCT (Grant Agreement No. 894756).

We invite you to participate in this survey as a professional, technician or practitioner in the building sector in Italy.

Your participation in this survey is voluntary. If you decide to participate, you will still be able to stop filling out the form at any time. If you decide not to participate or stop filling in, there will be any penalty.

To participate in the research, you will need to fill out the following online form, which will take about 5 minutes of your time. Your answers will be confidential, and no data will be collected that can identify you. The results of this study will be used for research purposes only and may be shared in aggregate and anonymous form with other INSTRUCT project partners and/or within project reporting.

If you have any questions about this consultation please contact Marcello Curci, EU Project Manager at Habitech, at the following email address: marcello.curci@dttn.it

By clicking "I agree" you declare that:

- I have read this notice
- To voluntarily participate in the consultation
- Be at least 18 years old

If you do not wish to participate in the consultation, please decline by clicking "I do not consent".

General information [Mandatory question]

2. Gender:

- a) M
- b) F
- c) Other

3. What's your age group? [Mandatory question]

- a) 18-30
- b) 31-40
- c) 41-50



d) 51-60

e) 60+

4. What's your role in the construction value chain? [Multiple choices possible, mandatory question]

a) Designer

b) Construction company

c) Producer of building components/materials

d) Installer

e) Energy assessor and certifier

f) Energy efficiency and sustainability consultant

g) Building/condominium manager

h) Other

Skill gaps, training needs, learning outcomes

5. How often have you faced skills gaps in the implementation/management of sustainable and/or energy efficiency interventions? [Single choice possible, mandatory question]

[Never; Rarely; Occasionally; Often; Very often]

6. Could you please elaborate more on these skill gaps and the ways in which they are usually addressed in construction projects? [Optional question]

[Open question]

7. How often have you relied on training to fill skill gaps, improving your skills or those of your staff? [Single choice possible, mandatory question]

[Never; Rarely; Occasionally; Often; Very often]

8. Are you satisfied with the learning outcomes reached personally or by your staff? [Single choice possible, mandatory question]

[Not at all; Little; Average; Much; Very much]

9. 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) acquired?

[Open question, optional]

10. Has the process of reducing energy skill gaps increased the profitability of your organization? [Mandatory question]

Yes/No



11. Has the process of reducing energy skill gaps and energy skills increased the added value of your organization? [Mandatory question]

Yes/No

Annex 2: Selected training materials from the Superbonus 110% event in Ala

<https://www.comune.ala.tn.it/Novita/Avvisi/SUPERBONUS-110-Aspetti-tecnici-e-pratici>

Annex 3: Course content of demo event 3

Training content is available on R2M Academy YouTube channel at the following link (accessed on 16th February 2023): <https://www.youtube.com/watch?v=JmWkWqI-2HM>

Annex 4: Course content of demo event 7

Training content was made available and streamed live on “Cassa Rurale Alta Valsugana” YouTube and social media channels (accessed on 16th February 2023)

<https://www.youtube.com/watch?v=W5WkCzWo4ws>



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





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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