



Dedicated to stimulate demand for sustainable
energy skills in the construction sector

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Report:	D.5.5 Storybook on how to increase the demand for EE skills based on BUSLeague experiences
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CHANGE RECORDS

Version	Date	Author	Changes
Version 1	06-10-2022	UT	First draft to get started
Version 2	20-12-2022	UT	Content creation
Version 3	30-01-2023	IVE	Content creation
Version 4	01-02-2023	UT + IVE	Consolidated version
Version 5	10-02-2023	ISSO	Final review

INTRODUCTION

Stories are very powerful ways to share knowledge as the narratives also enable sharing of more tacit aspects of knowledge, norms and values. They help to better understand each other's perspective and will contribute to building trust and commitment within the consortium and BUSLeague stakeholder networks.

Therefore, all BUSLeague consortium meetings started with one of the partners telling a story, preferably in relation to something they experienced with a worker, retailer or producer as part of this project. This was used to trigger discussions between the partners on the meaning of the story in relation to their context, their perspective on the story and lessons learned about BUSLeague objectives. Aside from prompting and pushing knowledge sharing after the live telling of the story, the discussions should help to identify how BUSLeague could be meaningful for similar challenges as described in the story.



In addition to internal use of the stories, the discussion was extended to the outside world using social media (LinkedIn & Twitter). By sharing the stories online, knowledge sharing was scaled beyond the project in the network of all partners and discussions that were started internally could be continued externally. This aimed at increasing the benefits and impact of the internal learning community of BUSLeague.

A storytelling format was provided, as not all types of stories are suitable for knowledge sharing. One week before the meeting, the storyteller submitted his/her story online. Furthermore, the storytelling was recorded and summarized (with member-check).

The stories are presented as part of this deliverable in form of a storybook but also online as part of the BUSLeague website (<https://busleague.eu/stories/>) to increase the demand for EE skills based on BUSLeague experiences also after project runtime.

I STORYTELLING FORMAT



Sharing experiences through stories is emerging in various professions as a powerful way to exchange and consolidate knowledge (Sole & Wilson, 2002). Research suggests that storytelling in organizations builds trust, cultivates norms, transfers tacit knowledge, facilitates unlearning, and generates emotional connections.

All stories are narratives, yet not all narratives are appropriate knowledge-sharing stories (Sole & Wilson, 2002). For example, most movies tell stories to entertain, and which are only secondarily intended, if at all, to share-knowledge, inform others and/or prompt a behaviour change.

Storytelling involves three types of sequences including the preface, the telling and the response sequences (Ta & Filipi, 2020). According to Sole and Wilson (2002), the essence of a knowledge-sharing story is twofold:

1. Good knowledge-sharing stories are simple.
2. The narrative form offers the listener an opportunity to experience the situation that was experienced by the storyteller.

1.1 Story Preface

The story preface is the place where storytellers establish the link between the story and the prior talk (Ta & Filipi, 2020) or the central theme of a project. When designing and telling stories, be clear on why you are sharing those (Sole & Wilson, 2002): what are the knowledge-sharing aims?

1.2 Story Telling

In general, a story has a beginning, a middle and an end and it includes a flow of events that happen involving protagonists who undergo an experience during the story. Furthermore, a story will often involve a challenge or opportunity with an eventual resolution (Tobin, 2006).

As a storyteller, start by identifying the premise, or the general idea of your change story. To create a premise with adequate detail, answer the following questions (Untold Content, 2019):

1. Who (or what) is your protagonist? A protagonist can be an individual, but also an organization, department, or process.
2. What is the situation?
3. What is your protagonist's condition at the beginning of the story?
4. What does the protagonist want?
5. Who is the opponent/who or what stands in the way?
6. How is the conflict resolved?

The telling sequence is the place where the core story is told. It often takes place in one extended turn at a talk in which listeners give the floor to the teller through minimal responses,

and do not take a full turn until a possible story completion is recognised through a response sequence or post-telling, preferably with no or with minimal gap and overlap (Ta & Filipi, 2020).

Parkin (2004) proposes the following structure for a story:

1. Once upon a time: the status quo, where the story begins;
2. Then one day: the protagonists encounter some problems or challenges;
3. Because of this: the story changes direction to deal with the problem;
4. The climax: the protagonists deal with the challenge;
5. The resolution: the results of the action;
6. The moral: their lives are changed.

While telling the story, take into account the following recommendations:

- Keep the story simple and accessible. Remember that effective knowledge sharing stories are streamlined and provide a compelling surrogate experience for the listeners (Sole & Wilson, 2002).
- Truth is critical or the storytelling will be ineffective (Wilson, 2019).
- To engage your listeners, explain the associated feelings, thoughts, and reactions (Untold Content, 2019).
- The story must stimulate a positive emotion, because positive emotion because positive emotion will invoke positive action (Wilson, 2019).

1.3 Response to Story

The post-telling sequence is the place where listeners may show their interpretations of and reactions to the stories. These actions may also involve a negotiation of understanding (Ta & Filipi, 2020).

2 STORYTELLING COLLECTION

At each BUSLeague consortium meeting, at least one partner told a story. The story had been prepared in advance of the meeting with the support of the University of Twente (UT) and the Valencia Institute of Building (IVE) as partners responsible for this task.

To assist in this task, templates were shared with the format and objectives of the story (see annex 5.1) as well as a summary template (see annex 5.2) with a user-friendly version of the story to facilitate its dissemination in the BUSLeague project newsletter but also through social media (see annex 5.2).

As a result, the following 9 stories were told, of which we show the user-friendly version below:

PARTNER	STORYTELLER	LINK
TUS	Seamus Hoyne	https://busleague.eu/a-story-by-seamus-hoyne/
EnE	Dragomir Tzanev	https://busleague.eu/a-story-by-dragomir-tzanev/
PF	Manuel E. Arias	https://busleague.eu/a-story-by-manuel-esteban-arias/
UT	Amber Kornet	https://busleague.eu/a-story-by-amber-kornet-ut-nl/
AEA	Naghmeh Altmann	https://busleague.eu/a-story-by-naghmeh-altmann/
ISSO	Martijn van Bommel	https://busleague.eu/a-story-by-martijn-van-bommel/
IVE	Pepa Esparza Arbona	https://busleague.eu/a-story-by-pepa-esparza/
IGBC	Alice Ryan	https://busleague.eu/a-story-by-alice-ryan/
BCC	Martina Krusteva	https://busleague.eu/a-story-by-martina_krusteva/

2.1 A story by Seamus Hoyne (TUS)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Seamus Hoyne (Limerick Institute of Technology, Ireland)

“If the vision is right from the start, and the thinking and research is relevant, despite the frustrations that people might have in turning a vision into reality and into a policy movement, it is possible if you continue to push the agenda”



Once upon a time

The protagonist: A staff member in an Higher Education Institute (HEI), called John¹. John did research on what was needed for upskilling of carpenters, plumbers, tradespeople, operatives. He previously worked as a carpenter and had worked in the construction sector for nearly 15 years. As a result of the economic crash in 2008, 2009, 2010, in 2011 he had begun work in the HEI. He had deep knowledge of the construction sector but also the intrinsic motivation behind construction workers and their upskilling.

¹ Pseudonym of someone that Seamus worked with

The situation: John and his colleagues were trying to roll out a newly developed skills programme. John was deeply frustrated that his vision of how the sector should upskill was not accepted by national stakeholders. He was also frustrated at the lack of engagement from construction workers themselves in taking opportunity in upskilling and being ready for the energy transition. The slow pace of policy makers and continuous need to engage with stakeholders who would not make a decision was challenging. John's research showed, and he firmly believed, that the programme should be available to all construction workers and crafts at a national level so that the people in the sector understand the importance of a holistic approach to nZEB in new build and renovation.

Then one day

John and many others continued to engage with national stakeholders. This continued years after the end of the funding. Through the continuous engagement, lobbying and networking some ground started to be made with some stakeholders. In addition, John had started to develop other training resources so that the programme could be delivered in blended learning formats so the momentum was growing to commit to something. Unfortunately there was also an issue that some previous partners were now working on other projects or had returned to lecturing. Therefore, some of the expertise had been lost. Despite this, given that the programme had been of such high quality and because of continued networking and discussion an opportunity emerged to develop further training resources and tools which would ultimately be rolled out nationally.

The moral

John, due to his extensive experience of working in the construction sector, had a strong belief that construction workers and trades had the skills to build nZEB - what they lacked was some new knowledge, experience and a mind set of systems thinking. He maintained and stuck to this belief during the period he worked on Build Up Skills and well after this. This approach and consideration is now being accepted and the fruits of his work emerging at a national level, eventually.



Seamus Hoyne

Dean of Flexible and Work Place Learning
Limerick Institute of Technology, Ireland

Seamus is a highly experienced manager with 25 years' experience in energy, education and flexible learning environments. He has developed extensive networks regionally, nationally and internationally in the sustainable energy and higher education fields. Seamus has acquired a thorough knowledge and experience of Europe and national funding schemes with experience of coordinating large scale multi-national projects.

Photo credits: by gpointstudio – www.freepik.es

2.2 A story by Dragomir Tzanev (EnE)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Dragomir Tzanev Center for Energy Efficiency EnEffect, Bulgaria

“Despite the systematic approach we undertook, it still turns out that the human factor is extremely important”



Once upon a time

The protagonist: Our ex-boss, myself and our team

The situation: We are looking for a hosting VET institution to share space, so that we could equip and operate the Bulgarian Building Knowledge Hub (BKH) that can host the centre and use it for free for their educational purposes. We have an operational concept, financial and human resources and unique equipment to make available to an interested VET institution. This is an excellent opportunity because the materials base in educational institution is outdated and malfunctioning. In turn, we want to conduct our own training courses in the BKH a shared-use mode.

Then one day

In the beginning, there is no interest from the management of the University despite the freely available space. After that, we start to look for other hosts and enter in long negotiations with 3 high schools in Sofia, which we have been working with through BUS courses and enjoyed them. However, after reaching principle agreements with all of them, all three schools begin to stall and continuously delay signing the contract, in all three schools.

Because of this, we change strategy and start talking to young professors in the university, trying to look for additional motivation for them. Then, some professors find internal powers, giving us a lifeline. We agree to support them and our ex-chairman, with the support of our team, develops 3 disciplines for the Master's programme for less than 3 months. I start and win a new H2020 proposal for the University. Based on that – and with official letters from the Bulgarian Construction Chamber and the Sustainable Development Agency, we approach the Rector and press him to open the center. He finally agrees and we find a way to provide, construct and install all necessary equipment in another 3 months and we are ready for opening.

The moral

At the end, there are more than 2000 people trained in and around the BKH. Many solid partnerships are found, and awareness on nZEB is largely increased within the university. The supply of training and educational services is improved through the new training programmes we have piloted successfully and training aids we have produced. However, despite the systematic approach we undertook, it still turns out that the human factor is extremely important – and without a few dedicated professors who wanted to start something new, we could have never succeeded.



Dragomir Tzanev

Executive Director

Center for Energy Efficiency EnEffect, Bulgaria

Dragomir Tzanev is Executive Director of Center for Energy Efficiency EnEffect – Bulgaria. Coordinator of the successfully completed BUILD UP Skills – Bulgaria, BUILD UP Skills EnerPro, Train-to-NZEB and Fit-to-NZEB projects (IEE and Horizon 2020 program of the European Commission); team leader of EnEffect for more than 20 international projects.

Photo credits: unknown

2.3 A story by Manuel Esteban Arias (PF)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Manuel Esteban Arias (Practee Formations, France)

“The rupture of information flux has facilitated the outdated of qualified professionals towards other professionals’ missions on the construction site beyond their own one. This can be translated into 1. negative impact of their work on others’ results and 2. a waste of potential synergies derived from the cross-work coordination.”



Once upon a time

The protagonist: During more than 28 years, an electrical technician enterprise has been working in the building and construction sector. They decided to join a tender for the construction project of La Vallée residence, which included 24 lodgings with a surface of 612 m² at Origny-Sainte-Benoite in the Hauts de France region. Given their knowledge and experience in implementing electrical installation projects, the enterprise was hired for the project. As part of the contract, it agreed to a training clause that required their employees to pursue a training program, namely the Formation Intégrée au Travail (FIT on its french acronym).

The situation: Given the necessary order of the construction and building process, the electrical technicians joined the project a few months after its launch when the walls were ready. Their arrival was accompanied by an observation of the progress of the project. Their discussion about the project status was heard by a member of another professional team, as the electrical technicians criticised the construction of a “blue wall”. The wall was built with hollow brick that

contained pores in the surface, letting the air, water, and even light pass through. In their uninformed opinion, this compromised the building airtightness.

However, the technicians did not pay further attention to this finding, they resigned and started their usual procedure: drill for installing the wires, as they always did. They let their old experience and knowledge on the field guide their assessment about the practices of the other professions.

This coincidence of several work teams at the same time in the worksite created the conditions for deploying the FIT training. The training occasion permitted the different professions to meet in one space, discuss their different missions and build a shared understanding.

Then one day

At the beginning, the technicians rejected the training. The opportunity to train without assuming any transportation cost, and the fact of the training taking place at the worksite, were attractive to them however. The updating in regulations, materials and techniques were appreciated by the candidates as well.

The first of the FIT modules addressed cross-working skills and brought the opportunity to update their knowledge about other professions' missions and raised their awareness on the impacts of their work on others' contributions.

Only through deploying these training modules, the electrical technicians knew that the blue walls were not blue because of the material colour but because it has an airtight membrane, called "[aéroblue](#)". It is applied on the hollow bricks surface achieving an insulated performant wall. Additionally, they understood that drilling that wall would make the wall no longer tight, so they redesigned their installation plan and for future project drilling is no longer an option.

The moral

Beyond the improvements in gestures, techniques, and raw materials selection, one major contribution of the training on the worksite comes from the social interaction among workgroups. The market development drives enterprises to specify in certain tasks, which makes it increasingly hard to hold a high level of communication among different professionals enrolled in the same project. This rupture of information flux has facilitated the outdated of qualified professionals towards others' missions beyond their one. This can be translated into 1. negative impact of their work on others' results and 2. a waste of potential synergies derived from the cross-work coordination.

Therefore, it becomes relevant to observe in detail the candidates' behaviour, the interactions with their colleagues and their notions about their knowledge and skills. Understanding this kind of dynamics can be essential for succeeding in the project interventions, in particular the actions for training and for encouraging upskill among the DIY workforces and the strategies for assessing workers of small worksites. It is important to share information across professions at the worksite and contribute to the deconstruction of the prejudices of the different professionals towards each other.



Manuel Esteban Arias

Intern, project manager

Practee Formations, France

Manuel Esteban is a Colombian economist with experience in academia, as economic history assistant, and with experience in research, for the public sector in topics like financial markets and value chains. After pursuing his master's degree in sustainable development economics in the University of Paris Pantheon-Sorbonne, Manuel joined Practee as an intern.

Photo credits: Own file.

2.4 A story by Amber Kornet (UT)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Amber Kornet (University of Twente, the Netherlands)

“Dealing with challenges and educating employees at the same time: The Building project as Learning Community”



Once upon a time

The protagonist: Paul is director of Installation company Whetherwood in the eastern part of the Netherlands. He has long time experience in the installation sector and sees the consequences of the energy transition on his company.

The situation: Due to the energy transition work is piling up at Wetherwood. Everybody wants to have sustainable energy. However, in utilization it is hard to keep up as the workforce is not ready for new ways of working including the collaboration and communication between professions on the construction site. Engineers and building site workers are doing their best, but projects keep being postponed because of new demands and later delayed because of errors. For example, workers keep making errors because the engineers' drawings are behind or issues at the building site aren't communicated back to the engineers at the drawing table which leads to a delay of deadlines.

Then one day

Paul learns of the initiative of The Topsectors in the Netherlands who encourage Learning Communities to help the energy transformation. Learning communities are public-private collaborations where employees of installation companies, students and teachers of higher and vocational education work together on challenges regarding the energy transition. Paul decides to form a learning community. Engineers, building site workers, students and teachers work together, lead by a facilitator, for ten weeks on the challenge. They meet weekly and through watching video's, experimenting with the software and also experiment working together, they

produced a new organizational structure and handbook to work together with the software. Students learned the work of the installation workers and how to perform the tasks with help of the software. Teachers learned how they could teach other students in how installation companies work with the collaboration software. Paul is very pleased with this, because the Installation Sector is suffering from shortage of employees and now these students could potentially start working this way tomorrow. After the ten weeks engineers and building site workers learned to work together more effectively, reported understanding each other better and see the need for proper communication. (150)

The moral

Good communication between building site and drawing table is of great importance to reduce flaws and thereby reducing building projects becoming delayed. Collaboration software can help solve a part of this problem, but workers also need to adjust their collaborative behavior. In Learning Communities employees (building site workers and engineers) together with students and teachers led by a facilitator, can pick up a challenge and come up with solutions within a ten week period. And after that can continue to collaborate and work better with what was learned.



Amber Kornet

Researcher

University of Twente, the Netherlands

Amber has been working on the Project “Hit the Gas” where learning communities are implemented to accelerate the energy transition. She investigates how and what is learned in these communities.

2.5 A story by Naghmeh Altmann (AEA)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Naghmeh Altmann (Austrian Energy Agency, Austria)

"If the building professionals are not coming to corresponding trainings, the trainings have to come to construction site"



Once upon a time

The protagonist: Alex is an architect, trainer and energy advisor. He checks the quality of installed elements and locates the leakages of the building shell on the construction site. He has been working in this field for many years and has experienced various challenges during his work. He proves his engagement in construction of energy efficient buildings in supporting the building owners and in training construction workers as well as installers.

The situation: In Austria, energy advisors are trained and educated to evaluate the efficiency and sustainability of buildings and give according recommendations to the building owner. They visit building owners at the point of renovation and/or new construction and recommend specific energy efficiency or sustainability measures to avoid construction errors. The work of energy advisors is very useful to ensure the quality of work, but up to now this kind of end user consultancy is supported by only one federal province in Austria by subsidies, namely Carinthia.

Then one day

In his function as an energy expert, Alex carries out blower-door tests, thermography and teaches about energy efficiency measures at different institutions. He knows that construction companies often are not willing to send their employees to trainings, because either they are needed at the construction site or the professionals themselves believe they have been trained enough and they know how to do their work.

Alex also knows that a blower-door test makes leakages of the building shell (failures according to energy efficiency) clearly visible. So, he integrated the blower-door test on the construction site into his training. During the training, first the attending building professionals show confidence that they had performed their work perfectly. Then, they see the air (smoke) that goes through leakages and they start to think about where the construction error has occurred.

Only afterwards, the building professionals realise how important it is to go beyond their professional expertise in their own profession and how easily an airtight building envelope can be damaged. Moreover, they recognize that a highly energy efficient building can only be constructed in seamless cooperation with the other crafts on the construction site.

The moral

Even small mistakes in the construction can lead to increased energy consumption and loss of indoor comfort. Therefore, the quality of construction work is immensely important when constructing nearly zero-energy buildings. The correct installation of the building elements and products is important to minimise construction errors.

If the building professionals are not coming to corresponding training, the training has to come to the construction site in the opinion of Alex. He is convinced that regular quality checks all through the construction phase avoid respective construction errors and guarantee low energy costs in the operation phase of nearly zero emission buildings (nZEBs).



Naghmeh Altmann-Mavaddat

Senior expert in buildings

Austrian Energy Agency (AEA), Austria

Naghmeh has been working for the Austrian Energy Agency in the building department and is involved in Build Up Skills and other European funded projects dealing with implementing energy efficiency in the buildings.

Photo credits: Styrian Energy Agency, Austrian Energy Agency

2.6 A story by Martijn van Bommel (ISSO)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Martijn van Bommel *ISSO, Netherlands*

“Something has to change”, thought the queen. “The most skilled tradesmen are stuck in the mud to get firewood.”



Once upon a time

The protagonist & the situation

Once upon a time, long, long ago, Queen Crystal ruled the ‘Land of Glass’. The land was large, rich and prosperous, but not all was well. The land was running out of resources, and its citizens had to work too hard to be able to provide everyone with the food and housing they needed.

Then one day

So the Queen called on Knight Jan to gather all the strong, smart and skilled workers they had and re-train them into bricklayers, seamstress and heater-craftsmen. So in the early morning, the Knight went to the market square, where the workers gathered to divide the work and stuck up on supplies.

Knight Jan prepared a speech to announce that he will build a school and re-train the craftsmen, so that all will be well. However, this idea was not met with enthusiasm; it was met with great resistance. The people on the market square told the Knight that building a school is not allowed, that the blacksmith can close shop now, that the contracts for firewood have just been

renewed and the message comes too late... He was confronted with many reasons why the school for re-training could not be organised.

While speaking to the Innkeeper that night, Knight Jan came up with a solution. He now understood that he needed to talk to the people involved. He went to talk to them and listen to them, and tried to come up with solutions. The Queen's mission took one full year instead of a week, but the land slowly changed and became more prosperous than ever.

The moral

In this story, Knight Jan represents the consortium of the BUS League project, the Land of Glass represents the European Union, and the marketplace represents DIY-stores. During BUSLeague, ISSO wants to collaborate with a Dutch DIY-store to guide craftsmen to relevant training for the energy transition, but ideas are often met with setbacks, for example because of regulations, time restraints, and existing plans.

The moral of the story is: Don't give up! Sometimes, setting up initiatives and pilots in collaboration with partners within the project and with external partners is difficult, and there are processes that slow your work down and make things more difficult. But don't give up: Pay attention to what other people's and organisation's interests are, and try to listen to them. Try to walk together with the difficult processes, instead of fighting them. If you do this, you will be surprised by the positive things that emerge.



Martijn van Bommel

Project Leader

ISSO, the Netherlands

Martijn studied structural engineering and pedagogy. After graduating, he started working as a trainer and course developer. Here, he gained a lot of experience with different working methods and translating abstract goals of construction companies into a programme that appeals to practical people.

Photo credits: ISSO

2.7 A story by Pepa Esparza (IVE)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Pepa Esparza (Valencia Institute of Building, IVE, Spain)

"Personal attitude in critical situations can make the difference between success and failure if you manage to turn difficulties into opportunities and reorient your career in the right direction without leaving behind your initial motivation".



Once upon a time

The protagonist: José is an architect from Valencia (Spain) who founded his own office about 30 years ago in the 1990s. Since he was a child, he had dreamed of being an architect and designing beautiful buildings in his hometown to be proud of.

The situation: At the beginning of his career, the city of Valencia was growing and growing, new neighbourhoods were emerging, and many buildings were being built and sold quickly at very high prices. Also, the municipalities close to the city of Valencia, especially those located on the Mediterranean coast, underwent significant urban growth with the creation of new infrastructures, housing and tourist flats.

José, like most architects at the time, was overwhelmed with work, designing new buildings and supervising their construction. But the reality is that, on many occasions, the speed of the

process took precedence over the final quality. José did enjoy his work but did not want to build lower quality houses – yet he was forced by the contractors to build faster and faster.

Then one day

But from 2007 onwards, the urban planning scenario changed drastically due to the real estate crash. José analysed the scenario he faced and considered that the expansion of the city was over. He assumed that architects would soon be required to maintain and rehabilitate the huge built stock and concluded that he needed to acquire knowledge, skills, and competences in this area.

José enrolled for 9 months in the master's degree in building renovation organised by IVE. In its final phase, students were required to do an internship for two months. José was so satisfied with the skills acquired so far that he offered placements within his own office to which some of his fellow students applied. Once the internships were over, he hired one of those colleagues who is still working alongside José today.

Therefore, taking the master's degree had two satisfying results: on the one hand José learned about rehabilitation, but he was also able to find other colleagues with whom he could work from now on.

Every year he grants a scholarship to one of the students of the master's degree so that they can study for free and gives a "master class" where he relates his experience as a success story. At IVE we remember José fondly as he was a student in our first edition of the master's degree and we keep in touch with him because he continues to be a dynamic, proactive person, interested in learning and exchanging enriching experiences.

The moral

José became stronger in the face of adversity, confronted the problem, and took on the crisis in the sector as a challenge. He realized the importance of being a qualified professional and offering a quality service. Thanks to his tenacity he managed to transform his modest office into a prestigious one in the region as he was one of the first professionals to specialise in energy rehabilitation.



Pepa Esparza Arbona

Architect

Valencia Institute of Building, IVE, Spain

International R&D Department and Communication Officer at Valencia Institute of Building (IVE). Responsible for communicating, disseminating, exploiting, and replicating the results of international projects. Experience in research and participation in competitive projects at national and international level (Horizon 2020, INTERREG MED Program, ENI CBC MED, Climate KIC) mostly related to education and training.

Photo by [Deleece Cook](#) on [Unsplash](#)

2.8 A story by Alice Ryan (IGBC)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Alice Ryan (Irish Green Building Council, Ireland)

“Using green building certification as a ‘carrot’ can have knock on benefits across the industry and can really encourage upskilling”



Prelude

The Irish Green Building Council has developed a certification system for new housing called the [Home Performance Index \(HPI\)](#). This encourages architects and developers to design and build more sustainable homes by giving them a badge of approval if they achieve certain sustainability criteria. One of the indicators in HPI is “Water Consumption” which enables water efficiency through the design and specification of water efficient fittings, appliances and recycling systems.

Once upon a time

The protagonist: Simon is an IGBC member from a large architectural practice in Dublin. He is very committed to delivering high quality, sustainable developments. He is a great champion of the HPI certification and was keen to use it for his projects.

The situation: Simon started to use the HPI certification scheme on a new social housing project he was designing in Wicklow. In order to achieve the highest level of points in the Water Consumption indicator the calculated water use of all the specified sanitaryware should be ≤ 80 litres of water usage per person per day. Simon got in touch with Michael at Sonas Bathrooms, which is Ireland’s largest supplier of sanitaryware. Simon was looking for sanitaryware products that would be able to deliver on the HPI water efficiency targets.

Then one day

Michael had no experience in delivering for a project that was trying to achieve sustainability criteria. He did not know what products to recommend in order to fulfill the criteria of the Water Consumption indicator. Simon worked with Michael outlining the intention of the Water Consumption indicator and how to use the [European Unified Water Label calculator](#). Michael was able to use the calculator to see which products he had in stock would meet the criteria to achieve ≤ 80 l / person / day in order to gain the points that Simon needed. Michael then put together a range of sanitaryware that Simon could choose from which would meet the criteria.

This experience was a very positive one for Michael. He understood that in the future more architects and specifiers would be choosing their sanitaryware based on their efficiency and therefore he went on to arrange training for his staff in understanding the implications of the near zero energy standard (NZEB) for sanitaryware providers.

The moral

What we have seen in Ireland is that green building certification going beyond building regulations can really encourage upskilling. In this specific example, it made a hardware store provider aware of the urgency of upskilling staff. This was something we were able to help him with through BUSLeague. This story is an example of how using sustainability certification systems as a “carrot” can have positive knock-on effects throughout the industry.



Alice Ryan

Membership & Education Manager

Irish Green Building Council, Ireland

Alice coordinates the IGBC membership and education programmes. In addition, she works on the BUSLeague and DASBE projects. Previously Alice worked in the area of Green Building and Sustainability for more than 8 years organising conferences, events and education programmes.

2.9 A story by Martina Krusteva (BCC)



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by Martina Krusteva (Bulgarian Construction Chamber)

“It both hurts and it itches, companies want to work with qualified specialists, but they are not willing to send them away during working hours and the time of the training is usually not convenient”



Once upon a time

The protagonist:

In 2014, the Bulgarian Construction Chamber (BCC), having realized that construction companies experience significant skills gaps, decided to expand its services to member companies and include educational services in its portfolio. The key policies were then divided into two components - policies and measures:

- Design strategic policies: Two devoted FTEs were hired to perform an extensive research, to analyze and understand companies' training/skills needs and launch active policies for skills development.
- Taking active measures to build capacity and create sustainable employment: BCC founded its own subsidiary - Construction Qualification Ltd., aimed to directly support the inscribed construction companies, who are paying annual fee, by training their workers based on their actual needs.

The situation:

Before we launched the training services we conducted an extensive primary and secondary research among the construction companies to understand what are their needs for skills? What type of trainings and how long should these be. What are companies willing to pay? Based on the identified actual needs BCC, through Construction Qualification Ltd., started providing training services to the construction workers of the inscribed companies. The trainings back then were for free, the lecturers were well known trainers and the practical trainings were provided by the best equipped practical

halls in Pleven and Stara Zagora. We were motivated and convinced that skills development in general, and energy efficiency in particular, is the right direction and we wanted to position BCC and its subsidiary as expert in the field of professional trainings, who understands the education market, balances between actual needs and policies to find a win-win solution for both workers and employers.

Then one day

At first, we stumbled across the following folk psychology phenomenon – high level of criticism, combined with expectations that “someone has to do something for me”, and in particular, education and well trained workers are supposed to come for free. This situation is perfectly illustrated by the Bulgarian proverb “it both hurts and it itches” - companies want to work with qualified specialists, but they are not willing to send them away during working hours and the time of the training is usually not convenient. Also, there are only two well-equipped practical training centers in Bulgaria and companies had to send their employees away for a practical training at their expenses. Last but not least, we realized that the demand for training services is normatively conditioned, e.g. the demand for trainings in construction is driven by legislation changes and compulsory requirements for skills, rather than by free market signals.

The moral

Having realized this particular behavior of construction companies BCC slowly started changing our approach to the market. We explored the virtual opportunities for provision of theoretical trainings and we speeded up their implementation when the pandemic started. We also moved the practical trainings from the training centers into the premises of the company, which are now accompanied by appropriate online theoretical courses. In addition, BCC recognized that paid trainings gather more trainees and we introduced a new funding scheme, based on which companies need to cover some of the expenses for the trainings. Finally, we are now trying influence legislative changes to boost skills development - BCC has recently submitted a proposal for Ordinance for design, implementation, control and acceptance of thermal insulation systems of buildings.

Our story is open-ended as skills development turned out to be a long term task, requiring a lot of efforts, motivation, learning and exploring. We have made some little steps and we know that many more are to come. We have realized that if we want to be successful we should try to change mindsets to convince companies that energy efficiency in buildings is the future and we should be ready to meet the market challenges. It won't be easy, however, what we can tell for sure is that teaming up, partnering, supporting each other, learn from each other and thinking out of the box always bring good results.



Martina Krusteva

Head of Dept., Professional Qualification and Analyses in Construction
Bulgarian Construction Chamber, Bulgaria

Masters in Labour Psychology, with expertise in VET matters, professional qualification and social dialogue. Involved in the implementation of BCC's strategic policies and measures in the field of VET, aimed at skills improvement, and continuous further education of construction workers.

Photo credits: BCC

3 STORYTELLING EVALUATION

3.1 INTERNAL EVALUATION

3.1.1 Background of the Evaluation

During the consortium meeting in month 26, we surveyed project partners to understand the fulfilment of the initial goals of storytelling within BUSLeague and its impact on the project objectives. To check the fulfilment of the initial goals, we inferred the potential benefits of storytelling from literature (see Chapter 1). We concluded that storytelling could potentially contribute to:

1. sharing existing norms and values from a project, company, or country.
2. building trust within the group.
3. establishing commitment within the consortium.
4. generating (emotional) connection.
5. understanding similar challenges and responding to them in the future.
6. helping to better understand each other's perspective.
7. establishing knowledge sharing mentality and respective community.
8. knowing each other and becoming more aware of each other's expertise.
9. exchanging new ideas and learning from mistakes etc.

In terms of the impact on the project objectives, each storyteller first had to relate her story to the project objectives in the long form (see Chapter Appendix). These objectives included:

- Objective 1. Easier access to skilled workforce easier by providing qualifications and recognition of energy skills
- Objective 2. Awareness and legislative changes that will stimulate and advance the demand for energy skills.
- Objective 3. Upscaling use of successful training methods and techniques.
- Objective 4. Demonstration of increased demand and proof of successful upskilling.
- Objective 5. Expenditure of BUSLeague on national and EU-level by a communication and replication strategy

3.1.2 Procedure

At the consortium meeting, the survey was implemented with an audience interaction tool. It allowed us to gather the data and show the results then directly to the project partners. All consortium partners participated in the internal evaluation of storytelling. 13 persons joined the audience interaction tools and filed 161 votes in total.

We explored the fulfilment of the initial goals of storytelling by asking the partners for their agreement with the above statements on a 6-point rating scale: 1 = strong disagreement to 6 = strong agreement. For the exploration of the impact on project objectives, we asked the partners to rank the objectives according to the extent that storytelling contributed to them (starting with highest contribution).

3.1.3 Results 1 – Fulfilment of Initial Goals (Benefits)

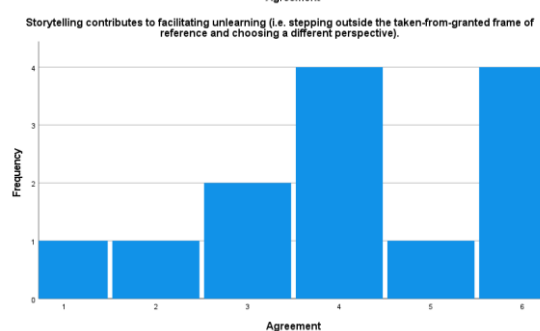
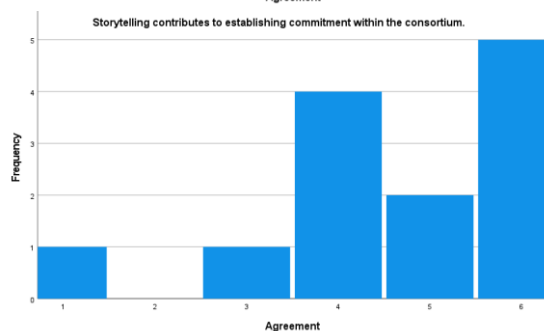
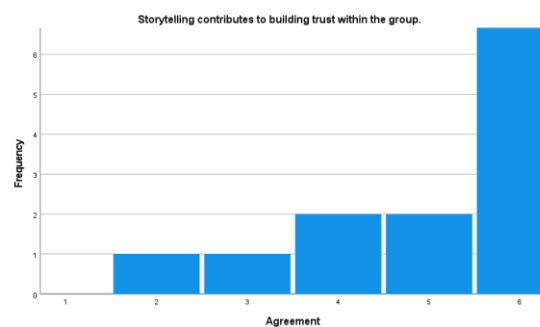
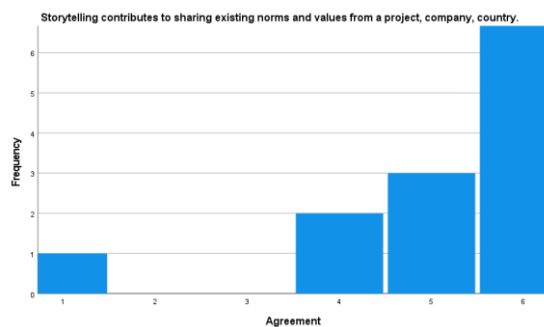
The number of participants (N), minimum (Min), maximum (Max), arithmetic mean (M) and standard deviation (SD) of all rating scale items on the initial goals of storytelling is reported in Table I, whereas the frequencies are depicted in histograms in Figure I.

All participants reported their agreement with the benefits of storytelling, except for the “exchanging new ideas and learning from mistakes etc.” with only 12 answers. The participants

agreed to all statements about benefits, but only somewhat agreed that “storytelling contributed to facilitating unlearning” and “storytelling contributed to transferring tacit knowledge”.

Table 1: Descriptive Statistics on Fulfilment of Storytelling Goals

Storytelling contributed to...	N	Min	Max	M		SD
...sharing existing norms and values from a project, company, country.	13	1	6	5,08	Agree	1,44
... building trust within the group.	13	2	6	5,00	Agree	1,35
... establishing commitment within the consortium.	13	1	6	4,62	Agree	1,50
... facilitating unlearning.	13	1	6	4,15	Somewhat agree	1,63
... transferring tacit knowledge.	13	2	6	4,08	Somewhat agree	1,26
... generating (emotional) connection.	13	1	6	5,31	Agree	1,44
... understanding similar challenges and responding in the future.	13	3	6	4,85	Agree	1,07
... helping to better understand each other's perspective.	13	3	6	5,31	Agree	,86
... establishing knowledge sharing mentality and respective community.	13	3	6	5,00	Agree	1,00
... knowing each other and becoming more aware of each other's expertise.	13	2	6	4,85	Agree	1,14
... exchanging new ideas and learning from mistakes etc.	12	3	6	5,08	Agree	1,08



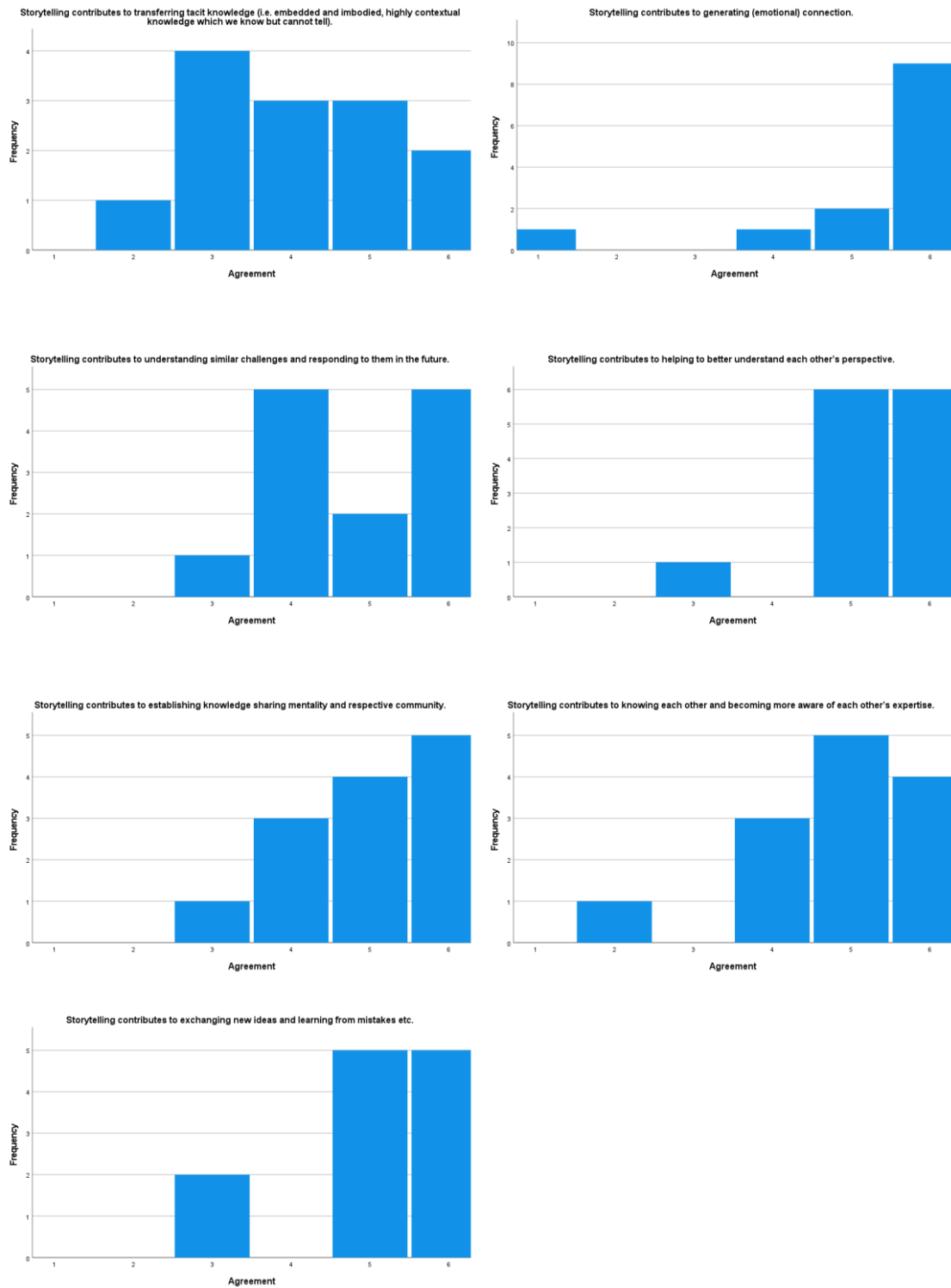


Figure 1: Histograms on Benefits of Storytelling (Frequencies on 6-point Agreement Scale)

3.1.4 Results 2 – Impact on Project Objectives

The exploration of the impact on project objectives resulted in voted ranks. In total, the participants voted 50 times on the extent to which storytelling contributed to the project objectives of BUS League (see Table 2).

Table 2: Frequencies of Ranks for Impact of Storytelling on Objective with Scoring

Objectives	Rank1	Rank2	Rank3	Rank4	Rank5	Score	Rel Score
Objective1	1	3	1		2	22	1,69
Objective2		2	4	3	3	29	2,23
Objective3	4	3	2	2		42	3,23
Objective4	4	5	2	1		48	3,69
Objective5	4		2	1	1	29	2,23

We then translated the frequencies of the scores per objective into a score assigning 5 points to the first rank, 4 points to the second rank, 3 points to the third rank, 4 points to the fourth rank and 1 point to the fifth rank. This absolute score was then divided by the total number of thirteen participants to receive a relative ranking and an indication of the perceived impact of the storytelling on the project results.

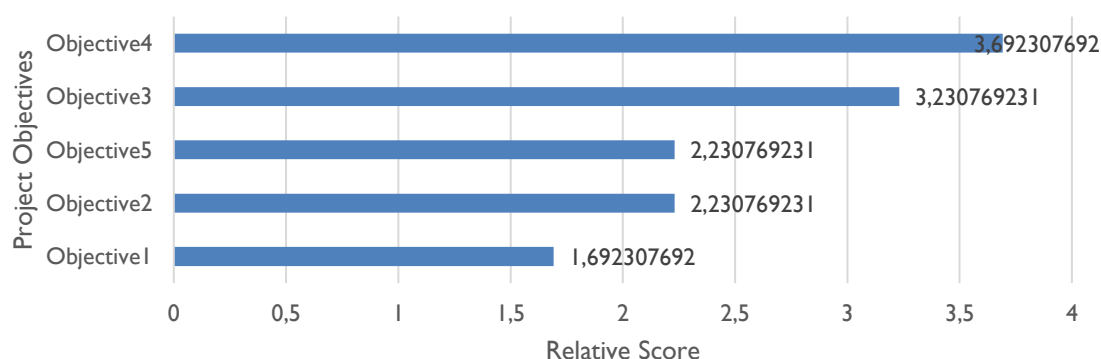


Figure 2: Impact of Storytelling on Project Objectives

Figure 2 depicts the results of the ranking of the 13 participants. They ranked the impact of the storytelling on objective 4 “Demonstration of increased demand and proof of successful upskilling” highest, followed by objective 3 “Upscaling use of successful training methods and techniques”. Less impact is seen on objective 2 “Awareness and legislative changes that will stimulate and advance the demand for energy skills” as well as objective 3 “Upscaling use of successful training methods and techniques”, and the least on objective 1 “Easier access to skilled workforce easier by providing qualifications and recognition of energy skills”.

3.1.5 Conclusions

The survey of the small sample indicates that the storytelling approach for knowledge sharing in the BUS League project achieved its initial goals in the perception of the representatives of all partners. This includes benefits like knowledge sharing, trust building, community building, mutual understanding and identification as well as resolution of similar challenges. Furthermore, the partners also saw an impact of the storytelling on the project objectives, mainly in terms of demonstrating increased demand as well as successful upskilling, and at the same time upscaling the use of respective training methods and techniques. The dissemination of the stories in social media might have contributed to both, the storytelling benefits as well as the impact.

3.2 EXTERNAL EVALUATION: SOCIAL MEDIA STATISTICS

To increase the benefits and impact of the internal learning community of BUSLeague the stories were also shared externally by publishing them on social media as follows:

Author	Channel	URL	Likes	Shares	Impressions
TUS Seamus Hoyne	Web	https://busleague.eu/a-story-by-seamus-hoyne/			
	Newsletter	Click HERE			
	Twitter	Click HERE	9	4	482
	LinkedIn	Click HERE ¹	n.a.	n.a.	n.a.
	Total		n.a.	n.a.	n.a.
EnE Dragomir Tzanev	Web	https://busleague.eu/a-story-by-dragomir-tzanev/			
	Newsletter	Click HERE			
	Twitter	Click HERE	8	6	545
	LinkedIn	Click HERE	8	2	n.a.
	Total		n.a.	n.a.	n.a.
PF Manuel E. Arias	Web	https://busleague.eu/a-story-by-manuel-esteban-arias/			
	Newsletter	Click HERE			
	Twitter	Click HERE	8	4	463
	LinkedIn	Click HERE	10	2	205
	Total		18	6	668
UT Amber Kornet	Web	https://busleague.eu/a-story-by-amber-kornet-ut-nl/			
	Twitter	Click HERE	3	4	316
	LinkedIn	Click HERE	8	2	168
	Total		11	6	484
AEA Naghmeh Altmann	Web	https://busleague.eu/a-story-by-naghmeh-altmann/			
	Twitter	Click HERE	9	5	450
	LinkedIn	Click HERE	29	3	649
	Total		38	8	1099

¹ LinkedIn statistics were not found because published more than 1 year ago

ISSO Martijn van Bommel	Web	https://busleague.eu/a-story-by-martijn-van-bommel/			
	Twitter	Click HERE	7	7	282
	LinkedIn	Click HERE	14	2	457
	Total		21	9	739
IVE Pepa Esparza Arbona	Web	https://busleague.eu/a-story-by-pepa-esparza/			
	Twitter	Click HERE	7	5	242
	LinkedIn	Click HERE	11	0	180
	Total		18	5	422
IGBC Alice Ryan	Web	https://busleague.eu/a-story-by-alice-ryan/			
	Twitter	Click HERE	11	6	294
	LinkedIn	Click HERE	23	4	222
	Total		34	10	516
BCC Martina Krusteva	Web	https://busleague.eu/a-story-by-martina-krusteva/			
	Twitter	Click HERE	1	1	48
	LinkedIn	Click HERE	11	2	304
	Total		12	3	352

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5 ANNEXES

5.1 Template to assist partners in the creation of their story

(Fill in one week before the meeting)

Partner: _____

Name: _____

Date: _____

STORY PREFACE

1. To what objective of BUSLeague is your story linked? (Multiple answers possible)

- ☐ Objective 1. On demand side: to provide access to skilled workforce easier and more attractive for companies and building owners alike, by providing recognition of energy skills and qualifications in the construction sector
- ☐ Objective 2. Awareness and influence legislative changes that will stimulate and advance the demand for energy skills.
- ☐ Objective 3. Upscaling use of successful training methods and techniques which have already been applied in previous EU and National initiatives such as BUILD UP Skills.
- ☐ Objective 4. To demonstrate increased demand and evidence-based proof of successful upskilling.
- ☐ Objective 5. To expand the BUSLeague on the national and EU-level by developing and implementing a communication and replication strategy
- ☐ Other, namely (*please describe*): ...

2. Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country;
- Building trust within the group;
- Facilitating unlearning (i.e., stepping outside the taken-for-granted frame of reference and choosing a different perspective);
- Transferring tacit knowledge (i.e., embedded and embodied, highly contextual knowledge which we know but cannot tell);
- Generating (emotional) connection to offer a way of understanding and responding to similar situations in the future.

What do you aim to achieve by sharing your story? (Multiple answers possible). Please explain briefly, possibly in relation to (one of the) BUSLeague objectives as chosen above.

- ☐ Sharing norms and values about: ...
- ☐ Building trust on: ...
- ☐ Facilitating unlearning regarding: ...
- ☐ Transferring tacit knowledge about: ...
- ☐ Generating emotional connection regarding: ...
- ☐ Other, namely: ...

STORYTELLING

START

Once upon a time...

3. Who (or what) is your protagonist? A protagonist can be yourself but also somebody else. Preferably a worker, retailer or producer as part of this project.

4. What is the situation?

5. What is your protagonist's condition at the beginning of the story?

6. What does the protagonist want?

MIDDLE

7. *Then one day...* Please describe what the challenge is/who is the opponent is/who or what stands in the way.

8. *Because of this...* Please describe how the story changes direction to deal with the challenge.

END

9. *The climax...* Please describe the results of the action/how is the conflict resolved.

10. *The moral...* Please describe how (work) lives are changed, in relation to the (one or more) BUSLeague objectives as chosen above.

STORY PREFACE (1 minute) – by storyteller

- Establish a link between the story and central theme of the project
- Be clear on the knowledge-sharing aims

STORYTELLING (5 minutes) – by storyteller

Start		
1. Once upon a time...		
- Who (or what) is your protagonist? A protagonist can be yourself but also somebody else.		
- What is the situation?		
- What is your protagonist's condition at the beginning of the story?		
- What does the protagonist want?		
2. Then one day...What is the challenge/who is the opponent/who or what stands in the way		
3. Because of this...The story changes direction to deal with the problem		
4. The climax... The results of the action, how is the conflict resolved		
5. The moral... Their (work) lives are changed		
End	Middle	Instructions to the storyteller:
		- <i>Keep the story simple and accessible</i>
		- <i>Only tell the truth</i>
		- <i>Describe feelings, thoughts, and reactions</i>
		- <i>Stimulate a positive emotion</i>

RESPONSE TO STORY (14 minutes) – by listeners, moderated by UT

1. Listeners may ask clarifying questions in the chat throughout the storytelling (1 min.)
2. UT will choose several clarifying questions to be answered by the storyteller (3 min.)
3. One or more listeners (depending on the available time) may respond to the story by (10 min.):
 - Reflecting on the meaning of the story in relation to their own context
 - Sharing their perspective on the story
 - Distilling insights and lessons learned in relation to the BUSLeague objectives
 - Exploring how BUSLeague can be meaningful for similar challenges as described in the story

5.2 Template for creating a user-friendly version of the story



STORYTELLING
Lived experiences shared
by BUSLeague partners.

A story by [1. Name] ([2. Entity, Country])

*"[3. A quote of max. 40 words must be inserted here, which is
extracted from the story]"*

[An illustrative picture can be inserted here]

Once upon a time

The protagonist: [4. Add a description of the protagonista, +/- 75 words]

The situation: [5. Briefly describe the situation, +/- 125 words]

Then one day

[6. Briefly describe what happened, +/- 150 words]

The moral

[7. Briefly describe the moral of the story, +/- 125 words]

[8. Insert a profile
picture here]

[9. Name]
[10. Job title]
[11. Entity, County]
[12. Biography, +/-50 words]

Photo credits: [to be added]

5.3 Full stories of partners

5.3.1 A story by Seamus Hoyne (TUS)

STORY PREFACE

To what objective of BUSLeague is your story linked?

- On demand side: to provide easier access to a skilled workforce easier and a more attractive for companies and building owners alike, by providing recognition of energy skills and qualifications in the construction sector
- Upscaling use of successful training methods and techniques which have already been applied in previous EU and National initiatives such as BUILD UP Skills.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country.
- Facilitating unlearning (i.e., stepping outside the taken-for-granted frame of reference and choosing a different perspective).

What do you aim to achieve by sharing your story?

- Sharing norms and values about: ...the best approach to training on nZEB and understanding that the entire value chain needs to upskill.
- Facilitating unlearning on getting construction workers and craftworkers to understand that NZEB buildings require a systems thinking approach rather than a silo approach.

STORYTELLING - START *(Once upon a time...)*

Who (or what) is your protagonist?

A staff member in another Higher Education Institute (HEI) who researched the needs for upskilling the construction sector for nZEB and worked on the development of Foundation Energy Skills (FES) programme as part of the Build Up Skills programme. He was previously a carpenter and had worked in the construction sector for nearly 15 years. Because of the economic crash in 2008, 2009, 2010, in 2011 he had begun work in the HEI. He was particularly interested in upskilling the construction sector for the energy transition that was coming. Therefore, he began work on the BUS initiative with us, LIT, and other colleagues. He did research on what was needed for upskilling of carpenters, plumbers, tradespeople, operatives. He had a deep knowledge of the construction sector but also the intrinsic motivation behind construction workers and their upskilling. He was an ideal partner to work with within the construction skills and BUS initiative because he understood the thinking of the people but also their skills and knowledge. He looked at developing short courses for the construction sector and was interested in what could be done. He had connected with me, Seamus Hoyne, as part of this.

What is the situation?

Having secured the funding under the IEE Build Up Skills programme we were at a point in 2014 where we had developed a Foundation Energy Skills Programme (FES) and we were trying to roll out the FES so it would be rolled out nationally. Mark had also developed a Train the Trainer programme to support FES as he was strong of the opinion that trainers in the further and higher education sector did not have the knowledge on nZEB. The FES had been designed to address

the concept of systems thinking for construction workers and crafts. FES had been piloted to 200 learners and the FES team was trying to get it adopted nationally.

What is your protagonist's condition at the beginning of the story?

Mark, as a practitioner and former tradesperson, was deeply frustrated that his vision of how the sector should upskill was not accepted by National stakeholders. He wanted FES to be adopted nationally. He was also frustrated at the lack of engagement from construction workers themselves in accessing/taking opportunities in upskilling and being ready for the energy transition. The slow pace of policymakers and the continuous need to engage with stakeholders who would not make a decision was challenging.

What does the protagonist want?

Mark's research showed, and he firmly believed that FES should be available to all construction workers and crafts at a national level so that the people in the sector (that he would have worked with) understand the importance of system thinking i.e., a holistic approach to nZEB in new build and renovation. He also firmly believed that trainers needed to learn both new knowledge and also new ways of training if the sector was to evolve.

STORYTELLING – MIDDLE

Then one day

The Build Up Skills team including Mark and many others continued to engage with National Stakeholders. This continued years after the end of the Build Up Skills funding. Through continuous engagement, lobbying and networking some ground started to be made with some stakeholders. In addition, Mark had started to develop other training resources so that FES training could be delivered in blended learning formats, so the momentum was growing to commit to something.

However, unfortunately there was also an issue that some of the team who had worked on FES and the Train the Trainer programme were now working on other projects or had returned to lecturing. Therefore, some of the expertise had been lost.

Despite this, given that the FES and the Train the Trainer programme had been of such high quality and because of continued networking and discussion an opportunity emerged to work with a Further Education body (WWETB) to develop specific nZEB training resources and tools which would ultimately be rolled out nationally.

Because of this

At this time Mark had changed jobs as the HEI in which he was working was re-organising specific positions. Despite this, he kept in contact with the FES team to see progress and secured additional funding to run additional courses in the field in his HEI. Through his commitment and high-quality work, the remaining FES team was able to engage with WWETB and join their team to develop a range of nZEB training courses. This work has continued over several years and has enabled the work that was started by Mark and the wider FES team, to be used to inform the development of new training courses and materials.

In addition, the Train the Trainer programme that was developed by Mark and his team is now being run again with the view of continuously upskilling and improving the knowledge of trainers in the construction sector on nZEB.

STORYTELLING – END

The climax

Mark has a completely new career now within his HEI. Despite this the ambition that he showed 10 years ago to seek to influence the upskilling of construction workers has born results. The training resources he developed and contributed to are now part of the growing mainstream rollout of training on nZEB.

The moral

Mark, due to his extensive experience working in the construction sector, had a strong belief that construction workers and trades had the skills to build nZEB - what they lacked was some new knowledge, experience and a mindset of systems thinking. He maintained and stuck to this belief during the period he worked on Build Up Skills and well after this. This approach and consideration are now being accepted and the fruits of his work emerging at a national level, eventually.

QUESTIONS AND COMMENTS FROM THE AUDIENCE:

- X: System thinking is important. Look at the network of problems and people can understand what they have to do to navigate all of that.
- Y: You really need a long breath.
- Z: Persistence
- Maaïke Endedijk: Do you encounter more 'Marks' currently, as this is a project from 10 years ago? The story is about how Mark persisted and, in the end, with a different approach than was intended, he still contributes to the original idea. You encounter now these people who have a new vision and want to contribute, but they get frustrated with things that get in the way.
- Seamus Hoyne: There is always somebody with a vision who is frustrated everywhere. The difference from 10 years ago is that the policy agenda has become less frustrating. So, some of the frustrations/barriers of 10 years ago have been removed. There are just new barriers. Lots more SMEs are now in the market, creating more opportunities for construction workers, and there is more of a demand for people with skills and knowledge. They are equally frustrated that they cannot get people and that some policies are blocking them. Upskilling is slow, so you need to be persistent and continuously pushing.
- Maaïke Endedijk: How can we support these people? I can imagine they often feel very lonely as being the one front runner. With all the modern technologies and communication platforms we have, I would help Mark to talk with other Marks and join forces or something like that.
- Seamus Hoyne: That is a good point. The technology could support people, and you could have an emotional support network. Where they are coming from, the construction sector, they are used to short-term delivery. When they have constructed a house they can see the start, middle, and end and it will be finished. Something that is around training or policy is longer term, you need a particular approach and emotional challenge to respond to that. I think we see it in business, network, leadership, and circles. It is common for leaders to network together and support each other. That is probably a network we could look into for the construction sector.
- O: We have been collaborating since the beginning of BUS. There are two things I would like to point out, having this long-term experience with international partners:

I. Insistence of the system approach. Systematic thinking is extremely important. If one element of the system is not working, the other elements are not working as well.

2. There are many Marks. Even though they have their difficulties during the years, they were always so motivated and willing to help each other.

- Seamus Hoyne: It is good to hear about the positive experiences of Dragomir. System thinking has been at the core of everything. It is a big challenge from a construction workers' perspective, but also from the policy makers' perspective. Not all this online work is not conducive by the way.
- Lis O'Brien: keep pushing for what you want
- Lis O'Brien: Great idea Maaïke, to create an SME network hub. Probably still only bring in the front runners though! How to get the majority to become active is the challenge
- Maaïke Endedijk - University of Twente: true, but we also need to sustain the frontrunner in keeping front running, if they quit, we lose a lot!
- Alice Ryan: Nice example also of someone retraining as a trainer and bringing their experience to the education system. Their potential that can be realised with experienced workers.
- Lis O'Brien (to everyone): so true - we must always remember what is in it for me, WIIFM. As Dragomir says Motivation is what we need to keep pushing and the systems thinking process. So many parts to bring together and we will get there in the end.

STORY PREFACE

To what objective of BUSLeague is your story linked?

- Objective 3. Upscaling use of successful training methods and techniques which have already been applied in previous EU and National initiatives such as BUILD UP Skills.
- Improve the hands-on training practices and facilities within the national VET system.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country;
- Building trust within the group;
- Facilitating unlearning (i.e., stepping outside the taken-from-granted frame of reference and choosing a different perspective);
- Transferring tacit knowledge (i.e., embedded and embodied, highly contextual knowledge which we know but cannot tell);
- Generating (emotional) connection to offer a way of understanding of and responding to similar situations in the future.

What do you aim to achieve by sharing your story?

- Sharing norms and values about: persistence and understanding of the system conditions.
- Building trust on: capacity to react in complex situation requiring more than professional skills.
- Transferring tacit knowledge: about specifics in personal and professional relations in Bulgaria.
- Generating emotional connection: regarding personal engagement and building on relations.

STORYTELLING - START (*Once upon a time...*)

Who (or what) is your protagonist?

Our ex-boss, myself and our team.

What is the situation?

We are looking for a hosting VET institution to share space, so that we could equip and operate the Bulgarian Building Knowledge Hub (BKH) that can host the centre and use it for free for their educational purposes. This is an excellent opportunity, because the materials base in educational institution is outdated and malfunctioning.

What is your protagonist's condition at the beginning of the story?

We have an operational concept, financial and human resources and unique equipment to make available to an interested VET institution which could use them to improve its regular activities.

What does the protagonist want?

To equip an existing or a new practical training center (BKH) in a professional high school or university with the goal to improve the training practice in the respective establishment, demonstrating the added value of the new approach. In turn, we want to conduct our own training courses in the BKH a shared-use mode.

STORYTELLING – MIDDLE

Then one day

In the beginning, there is no interest from the management of the University of Architecture and Civil Engineering despite the freely available space. We know the university well because our own office is in the university. After that, we start to look for other hosts and enter into long negotiations with three high schools in Sofia, which we have been working with through BUS courses and enjoyed them. The schools are suitable spaces because the buildings are huge, from the 80s, and they don't have that many students. Thus, the high schools seem suitable for these kinds of projects. However, after reaching principle agreements with all of them, they begin to stall and continuously delay signing the contract, in all three schools. The story lingers on for months and we are in big delay, without having any explanation on the reasons... How can it be, that after the initial interviews, nobody responds anymore? Then, I started talking with people outside the 'golden cage' and they asked me whether we gave some money, off the record of course. Thoughts of possible expectations for unofficial payments appear... no proof, of course.

Because of this

We changed our expectations and strategy. Because of this, we start talking to other people (young professors) in the university, trying to look for additional motivation for them. We convinced them that we could help them set up new training courses. Then, some professors find internal powers, giving us a lifeline – they decide to start a new master's programme on energy efficiency. But they need help. We agree to support them and our ex-chairman, with the support of our team, develops 3 disciplines for the master's programme for less than 3 months. Then we gathered together external stakeholders that would support us. I start and win a new H2020 proposal for the University. Based on that – and with official letters from the Bulgarian Construction Chamber and the Sustainable Development Agency, we approach the Rector and press him to open the centre. By that time, there is no space for any questions [resistance?] like the ones we had previously. He finally agrees and we find a way to provide, construct and install all necessary equipment in another 3 months and we are ready for opening. We had to do a lot of other things to support the university, not only related to the centre. But also related to other disciplines, training materials, training programs, to help them set up their masters. We trained students in the pilots of the master program, and we involved the university in another Horizon 2020 project. This was an additional investment from our side.

STORYTELLING - END

The climax

It is a grand opening (May 2016) – with all the heads of the above-mentioned institutions declaring their support for the action. Lots of support from manufacturers and suppliers in on display. The atmosphere was very enthusiastic, TV cameras were there, the media was there, and eventually more than 2000 people were trained. However, there are some hiccups:

- A lady from a certain producer leaves crying because the competitor has brought a roll-up and she has not... lots of comforting needed afterwards. Apparently, there was also some competition.
- As we bring a set of architectural books to the rector in private after the ceremony, we hear: "Books... well... I expected something different...". Then, a few months later he asks for direct deductions from the fees (50%) we receive from training. They even did not know that we were doing training for free, under the project.

Well, he never got anything.

The feeling that remains is people expecting different things than what we wanted to offer them.

The moral

At the end, there are more than 2000 people trained in and around the BKH. Many solid partnerships are found, and awareness on nZEB is largely increased within the university. The supply of training and educational services is improved through the new training programmes we have piloted successfully and training aids we have produced. However, despite the systematic approach we undertook, it still turns out that the human factor is extremely important – and without a few dedicated professors who wanted to start something new, we could have never succeeded. And this also applies to upcoming public-private collaboration: motivated people are needed. Because the story continues: we could not break in another university in Sofia on the same (assumed) reasons, but we opened a small centre in the school in Pazardzhik and helped them get new projects, because they see it as a way to survive the severe demographic and professional crisis they are facing. Now, we go there for nZEB Roadshows – and not in typically better positioned places in Sofia. Thus, only one school that was really in need wanted our support.

We are looking for partners from the industry to support us. We are trying to navigate through different competitive interest and to engage as many people as possible to support one common idea. It takes a lot of work, exercising empathy. The main message is: Think about people as human beings. Except what their expectations would be. And try to be careful and comforting in explaining them the benefits that they would receive from corporations and institutions like ourselves.

QUESTIONS AND COMMENTS FROM THE AUDIENCE:

- Lis O'Brien: It always comes down to WIIFM: what's in it for them
Dragomir Tzanev: Usually we interpret that question from the perspective of practical gains. But at the end of the day, it is not only rationale but also emotional and it has a lot to do with the personal relationships between different actors.
- Jan Cromwijk: The Golden Cage is very recognisable... Since 2011 working on BUS and construction skills projects. What amazes me is how a shared vision is quite often recognized fast, but then how much hinderance you have from your own golden cage, and those of other stakeholder. You really need to find out how to find out how to engage with your stakeholders in personal and respectful manner to be able to really co-create good results. Everybody wants to be on a party but does not want to co-create the party. The money aspect of Dragomir's story is not that relevant to the Netherlands, luckily.
- Alice Ryan: I think what is apparent is that we have to understand the expectations of others and manage those expectations. Also, to tap into enthusiasm when you find it.
Dragomir Tzanev: It's not easy. And when you find enthusiasm, you have to respond to it immediately.

STORY PREFACE

To what objective of BUSLeague is your story linked?

- Awareness and influence legislative changes that will stimulate and advance the demand for energy skills.
- Upscaling use of successful training methods and techniques which have already been applied in previous EU and National initiatives such as BUILD UP Skills.
- To demonstrate increased demand and evidence-based proof of successful upskilling.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country.
- Building trust within the group.
- Facilitating unlearning (i.e., stepping outside the taken-for-granted frame of reference and choosing a different perspective).
- Transferring tacit knowledge (i.e., embedded and embodied, highly contextual knowledge which we know but cannot tell).
- Generating (emotional) connection to offer a way of understanding of and responding to similar situations in the future.

What do you aim to achieve by sharing your story?

- Facilitating unlearning regarding:

The proximity to the interventions (WP4) requires rigour in the set of the logistic aspect but also detailed observations on the candidates' habits and their ways of interacting, an understanding of their stock of knowledge, their professional culture and their considerations toward their colleagues.

- Transferring tacit knowledge about:

The story pretends to illustrate the prejudgments with which the project employees can arrive to the worksite and highlights the socialisation framed in a training program as a powerful mechanism to increase the cross-work coordination.

STORYTELLING - START (*Once upon a time...*)

Who (or what) is your protagonist?

Angelique Marquant, member of the *Maison de l'Emploi de Saint-Quentin* told us that once upon a time, a tender for a construction project was launched at Origny-Sainte-Benoite, at the Hauts de France region, called Residence La Vallée. Given the size of the worksite the tender hired specialised enterprises in each one of the necessary building specialities, but all submitted to a Training Clause.

The worksite was launched and progressed as usual for weeks. Once the walls were ready for the electric installation, the enterprise in charge of this joined the worksite. Then, the electrical technicians examined the status of the project to prepare their intervention and, as the other work teams', they pursued the FIT training at the worksite.

What is the situation?

In some of the last projects of Angelique Marquant, the airtightness tests showed defects in the expected performance, in other words, the nZEB targets were not achieved. Aware of this, the Maison de l'Emploi encouraged the application of a training clause in the tender procedures. So, the hired companies for each of the professions received information about air tightness, sensible regulations, and cross working training through a FIT program.

What is your protagonist's condition at the beginning of the story?

During years, these electrical technicians have executed their missions with efficacy and rigour. While they are competent in their field, and even they may be proficient in EE topics, they are not aware of the most recent innovations in other professions.

Usually, the regular path is to hold regular meetings with their mission leader and being introduced during the worksite meetings. Alternately, they run the internal meetings in which it is discussed the schedule, the technique decisions and about the execution plans. This path does not contribute to the communications and spread of information across professions.

What does the protagonist want?

The electrical technician company, as all the teams at the worksite, work hard to conclude successfully the project. They use their knowledge to achieve high quality standards and satisfy the ZEB expectations of the project owner.

STORYTELLING – MIDDLE**Then one day**

The day electrical technicians started their electrical installation work, somebody heard them criticising the work of the wall's craftspeople teams. Apparently, a blue wall had one face built with hollow bricks. The hollow bricks usually come with pores that let the air, the light and eventually the water pass -what is useful for certain new procedures in airtight insulation but that for them, was a mistake regarding the location and aim of that specific wall. Anyways, after these observations, they just started their duties. As always, soon, they were ready to drill the blue side of the wall and start the process of wire installation through it.

Then, one day, the FIT interventions started. While training is usually rejected by the craftspeople, the visual impact of watching a container inside the worksite and expectations for having the training sessions inside it as well, awoke curiosity in a few of them.

The FIT training is built by 4 modules from which 3 take place one after the other: "a technical approach to the airtightness", "coordination, planning and testing for a BBC worksite" and "good manners in airtightness". The first module highlighted the relevance of the cross working for achieving the airtightness that created a space for briefing a bit about each one of the missions, tools and techniques within the project, and even to share experiences.

Because of this

Because of this, the work teams including the electrical technicians looked, for the first time, at the tools and techniques of other professions. Beyond the steps of the mission execution and the new materials, the training illustrated the possible obstacles that one's work may represent for the other's result. As well, the codes of each mission were illustrated such as the colour meanings or the reason for choosing certain materials over others.

STORYTELLING – END

The climax

Sometime later, the fourth FIT module took place. In this one, the instructors sought to identify changes in the practices of the craftspeople since the first three modules of the FIT.

The electricians mentioned that before the training they were not totally aware of how the airtightness was archived. After the training sessions, they understood that the blue wall they had seen days before was not blue just because it was the colour of the material (as they thought). It was an airtight membrane, called [aérobblue](#). In fact, the hollow bricks only became tight once installed in this [aérobblue](#), so the wall they had criticised before was totally performant indeed and drilling it breaks the membrane causing imperfections.

From then on, they never drilled again in the “blue walls”, remaining their airtightness, and instead they developed a new method for the wire installation.

The moral

Angelique has noticed a general satisfaction of the candidates because of the FIT intervention. The fact of being trained – with zero transportation cost - was not usual for them. Therefore, having access to new information on the construction site was quite enriching for them, especially in terms of regulation and cross work.

Additionally, this experience illustrates in particular two lessons learned:

- One lesson learned is that as the building enterprises become more specialised, the communication among the craftspeople of different activities (and different employers) becomes harder and the knowledge disconnection among them is directly related to avoiding mishaps.
- A second lesson learned is that experience can play a negative effect on craftspeople's decision making. Drawing quick conclusions based on the previous knowledge can lead to confidence but the wrong choice is detrimental to the project results. This highlights the importance of continuous awareness campaigns for professionals, as a useful invitation to reconsider the limits of their knowledge.

STORY PREFACE

To what objective of BUSLeague is your story linked?

- Upscaling use of successful training methods and techniques which have already been applied in previous EU and National initiatives such as BUILD UP Skills.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country.

What do you aim to achieve by sharing your story?

- Sharing norms and values about: Benefit of Learning Communities as training method to solve interprofessional collaboration and communication problems while bringing benefit to all involved stakeholders.

STORYTELLING - START *(Once upon a time...)*

Who (or what) is your protagonist?

Paul is the director of the Installation company Whetherwood in the eastern part of the Netherlands. He has long time experience in the installation sector and sees the consequences of the energy transition on his company.

What is the situation?

Due to the energy transition work is piling up at Wetherwood. Everybody wants to have sustainable energy. However, in utilization it is hard to keep up as the workforce is not ready for new ways of working including the collaboration and communication between professions on the construction site. Engineers and building site workers are doing their best, but projects keep being postponed because of new demands and later delayed because of errors. For example, workers keep making errors because the engineers' drawings are behind or issues at the building site are not communicated back to the engineers at the drawing table which leads to a delay in deadlines.

What is your protagonist's condition at the beginning of the story?

Paul learned from other directors of installation companies that there is software that could help improve communication between workers on the building site and engineers at the drawing table. Paul is reluctant because implementing new software is always challenging. Not only does every employee need to learn how to work with the software, they also need to alter and synchronize their communicational behaviours.

What does the protagonist want?

Paul searches for a way to simultaneously educate his employees to work with the new software and also find out its ideal application in his company: i.e., in what way can the software and the organization be synchronized to improve the collaboration between workers on the building site and engineers at the drawing table? The goal is to reduce flaws and with that reduce delays in deadlines.

STORYTELLING – MIDDLE

Then one day

Paul learns of the initiative of The Topsectors in the Netherlands who encourage Learning Communities to help the energy transformation. Learning communities are public-private collaborations where employees of installation companies, students and teachers of higher and vocational education work together on challenges regarding the energy transition.

Because of this

Paul decides this is a good way to pick up the challenge his company faces and forms a learning community of engineers, building site workers, students and teachers who together find out how to implement the collaboration software and how to synchronize communication within the organization.

STORYTELLING - END

The climax

The participants of the learning community work together, led by a facilitator, for ten weeks on this challenge. They meet weekly and through watching videos, experimenting with the software and also experimenting working together, they produced a new organizational structure and handbook to work together with the software. Students learned the work of the installation workers and how to perform the tasks with help of the software. Teachers learned how they could teach other students in how installation companies work with the collaboration software. Paul is very pleased with this, because the Installation Sector is suffering from shortage of employees and now these students could potentially start working this way tomorrow. After the ten weeks engineers and building site workers learned to work together more effectively, reported understanding each other better and see the need for proper communication.

The moral

Good communication between the building site and the drawing table is of great importance to reduce flaws and thereby reduce building projects becoming delayed. Collaboration software can help solve a part of this problem, but workers also need to adjust their collaborative behaviour. In Learning Communities employees (building site workers and engineers) together with students and teachers, led by a facilitator, can pick up a challenge and come up with solutions within ten weeks. And after that can continue to collaborate and work better with what was learned.

STORY PREFACE

To what objective of BUSLeague is your story linked?

- Awareness and influence legislative changes that will stimulate and advance the demand for energy skills.
- To demonstrate increased demand and evidence-based proof of successful upskilling.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country;
- Building trust within the group;
- Facilitating unlearning (i.e., stepping outside the taken-for-granted frame of reference and choosing a different perspective);
- Transferring tacit knowledge (i.e., embedded and embodied, highly contextual knowledge which we know but cannot tell);
- Generating (emotional) connection to offer a way of understanding of and responding to similar situations in the future.

What do you aim to achieve by sharing your story?

- Sharing norms and values about: understanding the functions and conditions of the building as a system.
- Building trust on: accompanied by an expert for the implementation of the work.

STORYTELLING - START (*Once upon a time...*)

Who (or what) is your protagonist?

The Austrian colleague from Energy Agency Styria (EASSt), Alex, who is a subcontractor. He teaches the energy advisors, does blower-door tests and is also an energy advisor as well.

What is the situation?

In Austria the energy advisors are trained and educated to make energy audits (especially for households) at the point of renovation and/or new construction for the implementation of energy efficiency. This task is subsidized by the regions (two hours visit including a protocol).

Since it is difficult to get in touch with construction workers or professionals in order to train them (lack of time, lack of interest, etc.), we decided to train the energy advisors as building coaches/ inspectors to check the quality of work the construction professionals do.

Only the region of Carinthia provides a subsidy (80% of the costs for the energy advisor) for accompanying the building owner throughout the construction period in Austria.

What is your protagonist's condition at the beginning of the story?

Alex has been working in Build Up Skills projects, so he is aware of the situation in the education market as well as construction errors due to the lack of training among building professionals.

He told us on many occasions that the energy advisors need further training because of new construction materials, different methods of installation and monitoring.

What does the protagonist want?

Alex believes that there are still many construction errors due to lack of education and training. There are still many professionals, who need further training, learning about methods of monitoring the energy efficiency and installing devices and heating systems including fine-tuning and adapting to the users' needs.

The energy advisors on the other side have to be trained in order to support the building owner to be able to make the right choices for different construction materials and energy systems.

STORYTELLING – MIDDLE

Then one day

In his function as an energy expert, Alex carries out blower-door tests and thermography and teaches at different institutions. He is aware that the SMEs are not willing to send their employees to train because either they are needed at the construction site (no time to participate in courses), when the SMEs have ongoing jobs or the SMEs don't want to finance the training, when they do not have jobs. On the other side, the professionals themselves believe they have been trained enough and they know how to do the work. During the training onsite when he is assigned to carry out a blower-door test, the attending professionals see where the building is not airtight and start thinking about how to repair it and do better next time.

Because of this

The EASt invites companies to teach professionals how to install their products correctly. In cooperation with the umbrella organization for the energy advisors, there should be further education courses to specialize the advisors in different subjects (e.g., blower-door test, thermography, etc.) so that they can show the professionals construction errors and how to prevent them.

STORYTELLING - END

The climax

The problem could be solved through some actions:

- further training of the energy advisors to learn about new products and methods of monitoring,
- promote the work of energy advisors to accompany the building owner to be aware of the quality of work and show-casing the right installation onsite (not mentioning the wrong installation but letting the workers come up with solving the problem).
- Make short trainings.
- Use the BUSLeague App.

The moral

The correct installation of the building elements and products is important to minimize construction errors. Therefore, if the SMEs are not willing to send their employees to training, the building owner has to receive support for making the right decisions and ask for capable craftsmen.

AEA signed a contract with EASt to make short training sessions and prepare the foundation for the BUSLeague app. On the policy level, AEA brings the stakeholders together (see workshop within task 3.1) to promote and implement Public Procurement Requirements into the market also for the private sector.

STORY PREFACE

To what objective of BUSLeague is your story linked?

- On demand side: to provide access to a skilled workforce easier and more attractive for companies and building owners alike, by providing recognition of energy skills and qualifications in the construction sector
- Upscaling use of successful training methods and techniques which have already been applied in previous EU and National initiatives such as BUILD UP Skills.
- To demonstrate increased demand and evidence-based proof of successful upskilling.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country;
- Building trust within the group;
- Facilitating unlearning (i.e., stepping outside the taken-for-granted frame of reference and choosing a different perspective);
- Transferring tacit knowledge (i.e., embedded and embodied, highly contextual knowledge which we know but cannot tell);
- Generating (emotional) connection to offer a way of understanding of and responding to similar situations in the future.

What do you aim to achieve by sharing your story?

Generating emotional connection regarding: the process of setting up a pilot within a BUS project, how sometimes it can be more difficult than expected... to share that experience with consortium partners so we can support and learn from each other.

STORYTELLING - START *(Once upon a time...)*

Who (or what) is your protagonist?

The protagonists are the Queen of the Land of Glass, Queen Crystal; Knight Jan, representing the BUSLeague consortium; and the skilled workers in the marketplace that need to be retrained, representing craftspeople in Europe.

What is the situation?

Once upon a time, long, long ago in a land not far from here, there lived a Queen. Her name was Queen Crystal. The land was large, rich and prosperous and the population was growing. The people in this land lived comfortably in large houses with large windows. Outsiders nicknamed this land as 'the Land of Glass'. The Queen ruled this land solely, she had no husband, and no children. When a minister asked her if she didn't feel lonely, she responded:

"I love my people as I would a husband, and I look after my people as they were my own children"

Although not all was well...

To keep their large glass houses warm, every year after the harvest season, people went into the forest to cut down trees to use as firewood. From her hilltop castle, Queen Crystal saw the forest getting smaller each year. The glass houses needed more firewood than the forest could supply, and the people struggled more each year to stock their winter supplies. The trip to the forest got longer and transport back to the city became increasingly difficult. The horses grew

tired, and carts got stuck in the mud. *“Something has to change”,* thought the Queen. *“The most skilled tradesmen are stuck in the mud to get firewood”.*

What is your protagonist’s condition at the beginning of the story?

Then, Queen Crystal had an idea: We have to renovate the city! We brick up all North facing windows, use the sun to heat our houses, hang up heavy gauged curtains to keep the heat in at night and make sure the open fireplaces will be replaced by efficient heaters.

With this plan in hand, she summoned her ministers.

“But Majesty, this is not possible. We need our skilled tradesmen to chop the wood” spoke the minister of arborists.

“And we need our skilled people to drag those carts out of the mud” said the minister of roads.

“It is part of our culture, every year there are hundreds of foreign tourists to see our glass houses” said the minister of housing.

“Ah yeah” continued the labour minister *“our people aren’t able to do that, we only teach them how to cut down trees”.*

“So, we cannot execute my plan?” asked the Queen.

“No, impossible!!” shouted the ministers in sync.

“Well, then I’ve heard enough” said Queen Crystal.

After this conversation the Queen called on Knight Jan.

What does the protagonist want?

“Knight Jan” started the Queen “I want you to gather all the strong, smart skilled workers we have and re-train them into bricklayers, seamsters and heater-craftsmen. But how do we reach these people? They are always in the forest or in between”

“Each morning before sunrise, they gather on the market square in a village halfway between the city and the forest” knew Knight Jan. “There, they divide the work and set out with their carts into the forest. They also stock up on axes and saws on that market.”

“Very well” said the Queen. “Knight Jan, make sure you reach those people tomorrow early in the morning and get those people re-trained. I expect a report on your progress next week.”

STORYTELLING – MIDDLE

Then one day

That night, Knight Jan took on his horse to the village square. Whilst riding he prepared a speech. At the market square he rang the market bell and started...

“Dear people,

The Queen wants to renovate the glass city. The annual gathering of firewood is becoming too laboursome and time consuming. You are away from your families for too long. On this market square I will build a school and re-train you into bricklayers, seamsters and heater-craftsmen.” While he spoke more and more, people gathered around and listened while holding their breath. Knight Jan continued, *“When you are re-trained, we will go back home and renovate the city, house by house. Your families will be pleased, the house owners will be pleased, and you will be pleased for you do not need to get the firewood any longer.”*

It was dead-silent. Knight Jan was preparing for applause. He closed his eyes, took a deep breath, put forth his chest and was ready to receive the cheers.

“Booooh, boooooh!!!”. Everybody was yelling, shouting and there was a great kerfuffle.

“You aren’t allowed to build on the market square” said the market keeper.

“I just made a new batch of axes” yelled the blacksmith “Now I can close shop!”

“We are only allowed to chop wood from our wood chopping guild” shouted the woodchoppers.

“You are too late” added the trades’ merchants. “We will be fined when we don’t supply a sufficient amount of firewood. We have renewed contracts with the Queen.”

Because of this

Knight Jan fell quiet and went away to the local Inn. Disappointed he sat at the bar. How was this possible? A reasonable plan which would benefit everyone, and no one wants to cooperate?

The Innkeeper, who has witnessed the whole thing, went to him and said: *“there, there, don’t give up. I understand these people. Go and talk to them, listen to what they have to say, and come up with a solution. Then it will all work out fine. They are right, you are not allowed to build on the market square, but you could use my great hall to use as a school. You know the Queen, right? Make sure she doesn’t renew the contracts with the merchants.”*

STORYTELLING - END

The climax

With the council of the Innkeeper in his mind, Knight Jan spoke with everybody about their concerns and found a solution.

When Knight Jan returned after a year instead of after a week at the Queen's castle, the Queen was furious! *“A full year!?”* she shouted *“You have been away for a whole year. All you had to do is go to the market to re-train everyone. How hard could that be!?”*

Knight Jan calmly explained to the Queen all the work he had done. The Queen understood it was hard to convince everyone.

From that moment on, the city slowly changed. There was building going on, the forest started to regrow, and the skilled people were busier than ever, but didn’t have to work long days in the dark forest, being away from home for weeks on end.

But what about these tourists from faraway lands you might wonder? They still came. More than ever actually, but not for the glass houses anymore. From then on, they came and looked at the beautiful drapes.

The moral

In this story, Knight Jan represents the consortium of the BUS League project, the Land of Glass represents the European Union, and the marketplace represents DIY-stores. During BUSLeague, ISSO wants to collaborate with a Dutch DIY-store to guide craftsmen to relevant training for the energy transition, but ideas are often met with setbacks, for example because of regulations, time restraints, and existing plans.

The moral of the story is: Don’t give up! Sometimes, setting up initiatives and pilots in collaboration with partners within the project and with external partners is difficult, and there are processes that slow your work down and make things more difficult. But don’t give up: Pay attention to what other people’s and organisation’s interests are and try to listen to them. Try to walk together with the difficult processes, instead of fighting them. If you do this, you may be surprised by the positive things that emerge.

VIDEO LINK:

<https://youtu.be/Nl3b5a9n3l8>

5.3.7 A story by Pepa Esparza Arbona (IVE)

STORY PREFACE

To what objective of BUSLeague is your story linked?

- To demonstrate increased demand and evidence-based proof of successful upskilling.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country;
- Building trust within the group;
- Facilitating unlearning (i.e., stepping outside the taken-from-granted frame of reference and choosing a different perspective);
- Transferring tacit knowledge (i.e., embedded and embodied, highly contextual knowledge which we know but cannot tell);
- Generating (emotional) connection to offer a way of understanding of and responding to similar situations in the future.

What do you aim to achieve by sharing your story?

Generating emotional connection: to Jose who revised his kind of working bravely during a construction domain crisis by taking a timely training to build skills for the time beyond and finding allies for this rally.

STORYTELLING - START *(Once upon a time...)*

Who (or what) is your protagonist?

José is an architect from Valencia (Spain) who founded his own office about 30 years ago in the 1990s.

What is the situation?

At the beginning of his career, the city of Valencia was growing and growing, new neighbourhoods were emerging, and many buildings were being built and sold quickly at very high prices. Also, the municipalities close to the city of Valencia, especially those located on the Mediterranean coast, underwent significant urban growth with the creation of new infrastructures, housing and tourist flats.

What is your protagonist's condition at the beginning of the story?

José, like most architects at the time, was overwhelmed with work, designing new buildings and supervising their construction. But the reality is that, on many occasions, the speed of the process took precedence over the final quality.

What does the protagonist want?

José did enjoy his work but did not want to build lower quality buildings – yet he was forced by the contractors to build faster and faster.

STORYTELLING – MIDDLE

Then one day

However, from 2007 onwards, the urban planning scenario changed drastically due to the real estate crash. It was a time of difficult economic crisis for the sector and for all the professionals involved in it: architects, engineers, construction and development companies, material suppliers, etc.

Many companies disappeared and many architects like José changed their profession, moving their activity to other sectors related or not to the world of design and architecture. But José did not want to give up his business and tried to adapt to this critical situation. He was then in his late 50s, a middle-aged man, with a long professional career behind him but still a long way to go.

Because of this

José analysed the scenario he faced and considered that the expansion of the city was over. He assumed that architects would soon be required to maintain and rehabilitate the huge built stock and concluded that he needed to acquire knowledge, skills, and competences in this area. It was also necessary to offer a higher quality service to stand out from competitors based on energy efficiency and the construction of near-zero energy buildings. This offered José the chance of fixing lower quality buildings and refocusing on quality housing which was his initial motivation anyway.

The training offered in the field of energy refurbishment in the Valencia region was limited and José attended different short courses. In 2017, the Valencian Institute of Building in collaboration with the regional government (Generalitat Valenciana) launched the first edition of a master's degree in building refurbishment and urban regeneration. It was a university master's degree of approximately 750 hours of training and was aimed especially at architects and engineers with university studies. José did not hesitate to enrol and spent about 9 months studying the master together with other colleagues, most of whom were also architects like him².

The atmosphere of the master's favoured interaction between the students themselves but also with the different guest lecturers, so the level of student satisfaction was extremely high. The profile of the students was very varied, on the one hand there were unemployed students who had not survived the crisis, there were also young students who had recently graduated, but there were also students who came from public bodies and municipalities who were looking to retrain.

STORYTELLING - END

The climax

In the final phase of the master's degree, students were required to do an internship for two months. José was so satisfied with the skills acquired in the master's course that he offered placements within his own office to which some of his fellow students applied. Once the internships were over, José hired one of those colleagues who is still working alongside José today.

José had been looking for professionals with knowledge, skills and experience in the field of rehabilitation for a long time but had not found the right people. Therefore, taking the master's

² The master's degree on building renovation and urban regeneration is called "Máster RERU" (<https://www.reru.es/>). It is aimed mainly at architects, it is a university master's degree (Universidad Politécnica de Valencia, UPV), promoted by the regional government and organised by IVE. It is in Spanish and online, and registrations are now open

degree had two satisfying results: on the one hand José learned about rehabilitation, but he was also able to find other colleagues with whom he could work from now on.

The moral

José became stronger in the face of adversity, confronted the problem, and took on the crisis in the sector as a challenge. He realized the importance of being a qualified professional and offering a quality service. Thanks to his tenacity he managed to transform his modest office into a prestigious one in the region as he was one of the first professionals to specialise in energy rehabilitation.

Every year he grants a scholarship to one of the students of the master's degree so that they can study for free and gives a "master class" where he relates his experience as a success story. At IVE we remember José fondly as he was a student in our first edition of the master's degree and we keep in touch with him because he continues to be a dynamic, proactive person, interested in learning and exchanging enriching experiences.

STORY PREFACE

To what objective of BUSLeague is your story linked?

- Awareness and influence legislative changes that will stimulate and advance the demand for energy skills.
- To demonstrate increased demand and evidence-based proof of successful upskilling.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country;
- Building trust within the group;
- Facilitating unlearning (i.e., stepping outside the taken-from-granted frame of reference and choosing a different perspective);
- Transferring tacit knowledge (i.e., embedded and embodied, highly contextual knowledge which we know but cannot tell);
- Generating (emotional) connection to offer a way of understanding of and responding to similar situations in the future.

What do you aim to achieve by sharing your story?

Transferring tacit knowledge about: the benefits of using certification schemes to effect change in the industry.

PRELUDE

The Irish Green Building Council has developed a certification system for new housing called the [Home Performance Index \(HPI\)](#). This encourages architects and developers to design and build more sustainable homes by giving them a badge of approval if they achieve certain sustainability criteria. The scheme is holistic and includes indicators relating to energy efficiency, carbon, water, ecology, waste, health & wellbeing, quality assurance, skills and sustainable location.

One of the HPI indicators is Water Consumption which encourages the efficient use of water both inside and outside the home. Water scarcity is a serious problem in many dry climates across the world. In Ireland, which is considered a wet climate, we are also experiencing water scarcity which is evident in summer hose pipe bans. In Ireland, we don't pay for our water and there are no individual water meters therefore it is necessary to find other ways to incentivise saving water.

The intention of the Water Consumption indicator in HPI is to reduce the consumption of drinking water through the design and specification of water efficient fittings, appliances and recycling systems. This is an important indicator as water efficiency reduces the impact of energy/carbon requirements for the treatment of potable water at the utility level. It also reduces the impact of energy requirements/carbon emissions associated with heating domestic hot water. Under the new building regulations energy for hot water will account for over 70% of the regulated hot water in apartments. To address this issue in the HPI system, points are awarded for water efficiency based on the calculated water use of the specified sanitaryware.

STORYTELLING - START *(Once upon a time...)*

Simon, an IGBC member from a large architectural practice, was using the HPI certification scheme on a new social housing project in Bray, Co Wicklow. Simon got in touch with Michael

at Sonas Bathrooms, which is Ireland's largest supplier of sanitary ware and has been in business for over 40 years. Michael had no experience in delivering a project that was trying to achieve sustainability criteria.

Who (or what) is your protagonist?

Simon the Architect and Michael the Bathroom supplier.

What is the situation?

An IGBC member, Simon from a large architectural practice, was using the HPI certification scheme on a new social housing project in Bray, Co Wicklow. Simon got in touch with Michael at Sonas Bathrooms, which is Ireland's largest supplier of sanitaryware which has been in business for over 40 years.

What is your protagonist's condition at the beginning of the story?

Simon is aiming to reach the HPI specification for his social housing project

What does the protagonist want?

He wants a Bathroom supplier that can provide a range of efficient sanitary ware

STORYTELLING – MIDDLE

Then one day

Michael had no experience in delivering a project that was trying to achieve sustainability criteria. He did not know what products to recommend that would fulfil the criteria of the Water Consumption indicator.

Because of this

Simon worked with Michael outlining the intention of the Water Consumption indicator and how to use the [European Unified Water Label calculator](#). In order to achieve the highest level in this indicator the calculated water use of all the specified sanitaryware should be ≤ 80 litres of water usage per person per day. To calculate this, you enter the capacity or flow rate of the different sanitaryware installed e.g., WC, taps, shower etc. The calculator has a fixed use factor based on typical usage. Michael was able to use the calculator to see which products he had in stock would meet the criteria to achieve ≤ 80 l / person / day in order to gain the points that Simon needed. Michael then put together a range of sanitaryware that Simon could choose from which would meet the criteria.

STORYTELLING - END

The climax

This experience was a very positive one for Michael. He understood that in the future more architects and specifiers would be choosing their sanitaryware based on their efficiency and therefore he wanted to train his staff in understanding the implications of the near zero energy standard (NZEB) for sanitaryware providers. Michael got in touch with the IGBC when he saw our Water Efficiency awareness campaign encouraging bathroom suppliers to consider water efficiency matters. Through the BUSLeague project, we were able to deliver free training for

Michael and his staff in energy efficiency and specifically in understanding the considerations for specifying water efficient sanitaryware for sustainability certification.

The moral

What we have seen in Ireland is that green building certification going beyond building regulations can really encourage upskilling. In this specific example, it made a hardware store provider aware of the urgency of upskilling its staff. This was something we were able to help him with through Bus League. This story is an example of how using sustainability certification systems as a “carrot” can have positive knock-on effects throughout the industry.

As the HPI includes quality assurance indicators, it has also been used by banks to incentivise upskilling through lower interest rates. Banks do not have the capacity/resources to check the qualification of the construction teams, but they are interested in a stamp like the HPI.

STORY PREFACE

To what objective of BUSLeague is your story linked?

- On demand side: to provide access to skilled workforce easier and more attractive for companies and building owners alike, by providing recognition of energy skills and qualifications in the construction sector
- Awareness and influence legislative changes that will stimulate and advance the demand for energy skills.

Knowledge sharing facilitates:

- Sharing existing norms and values from a project, company, country;
- Building trust within the group;
- Facilitating unlearning (i.e., stepping outside the taken-for-granted frame of reference and choosing a different perspective);
- Transferring tacit knowledge (i.e., embedded and embodied, highly contextual knowledge which we know but cannot tell);
- Generating (emotional) connection to offer a way of understanding of and responding to similar situations in the future.

What do you aim to achieve by sharing your story?

- Sharing norms and values about: construction companies' behaviour, understanding the demand side
- Building trust on: new training service.

STORYTELLING - START (*Once upon a time...*)

Who (or what) is your protagonist?

This is a story about a team, comprising a philosopher (my colleague) and an economist (me), diving slowly but steadily into the energy efficiency realms. The protagonists are sharing three distinct storylines, unveiling different aspects of the demand for construction skills as a whole, which influences the demand for EE skills in particular. These are about:

- Employers' organisation, expanding its services to member companies.
- Professional qualification expert (the Philosopher), entrusted with the strategic planning of the professional qualification policies and the coordination.
- The project manager (the Economist) is responsible for the work on EU projects and expected to bring in best practices in the field of EE (trainings, training materials, research documents).

What is the situation?

Here is how and why we - the Bulgarian Construction Chamber, expanded our services to construction companies to include educational services. And also, how the Philosopher and I got involved in energy efficiency construction skills.

In 2014, BCC, having realized that construction companies experience significant skills gaps, decided to expand its support and expertise to professional qualification in the construction sector. The key policies were then divided into two components - policies and measures:

- design strategic policies, and
- taking active measures to build capacity and create sustainable employment in the sector.

BCC has built its strategic planning and corresponding activities based on the principle of two-way flow of information:

- From the construction companies to BCC, who are most capable of defining areas requiring improvement of knowledge, skills and competences (being the end-users of fresh skills, leaving the formal education system)
- From BCC to the construction companies, being an employers' organization, interacting with all stakeholders at national and international level to inform about current market trends and opportunities.

Two devoted FTEs were therefore hired to perform an extensive research, analyse, and launch active policies in the field. One of them is the Philosopher, who was expected to design strategic plan how to reduce the skills gaps and boost the competences of the workers.

In 2015 I accidentally got involved in the Build-up skills Train-the-trainer course on passive house and nZEBs in Dublin – at the very last moment I had to cover up a colleague. I knew nothing about EE, skills, competences, mechanical ventilation, and other complex terms, but I got so hooked on the EE, nZEB and passive house idea. Upon return to Bulgaria, I needed a lot of help understanding the educational system in Bulgaria, comparing it with the European qualification framework, for which my colleague was a great help. So, in 2016, we teamed up to understand the educational and training market as a whole and boost the training of construction workers.

What is your protagonist's condition at the beginning of the story?

The first thing was to understand what companies want. What type of trainings, what are they willing to pay, how long should the trainings be? As a next step, in 2015, BCC founded its own subsidiary - Construction Qualification, devoted to the implementation of BCC's active educational policies and the provision of actual trainings to workers. The objective of the subsidiary is to directly support the inscribed companies, who are paying annual fee, by training their workers based on their actual needs. The trainings back then were for free, the lecturers were well known trainers, and the practical trainings were provided by the best equipped practical halls in Pleven and Stara Zagora (only two centres of this type in Bulgaria).

What does the protagonist want?

We were both **motivated and convinced that skills development in general and EE skills in particular is the right direction** and we started working passionately on this cause. We wanted to position BCC and its subsidiary as an expert in the field of professional training, who understand the education market, balance between actual needs and policies to find a win-win solution for both workers and employers. These activities were supported by EU projects are well BUS Enerpro and Train-to-nZEB, both with ambitious targets to train more than 800 construction workers in EE construction.

They say however, that each beginning is tough...

STORYTELLING – MIDDLE

Then one day

The following challenges appeared on our way. At first, we stumbled across the following folk psychology phenomenon – a high level of criticism, combined with expectations that “someone has to do something for me”, and in particular, education and well-trained workers are supposed to come for free. This type of thinking had the following impact:

- Construction companies prefer to work with experienced workers. They are not so willing to invest time and efforts to train their own staff and send them away from work

for a period of two/three weeks. Even though the trainings we offered were for free it was very difficult to form a group of 15 trainees.

- It both hurts and itches (a Bulgarian proverb, perfectly depicting the situation) – Companies want to work with qualified specialists, but they are not willing to send them away during working hours and time of the training is usually not convenient. Also, there is a lingering question “While he is being trained, I am losing money. What if tomorrow he says he wanted a higher salary, because he is now qualified and trained? Or worse, what if he, the freshly trained, resigns and goes to my competitor?”

The other limitations that we revealed are as follows:

- There are insufficient practice hours in schools – in general, construction students are given limited opportunities to make their hands dirty! In addition, there are only two well-equipped practical training centres in Bulgaria, which additionally limits the provision of trainings. Therefore, the companies had to send their employees away for a practical training at their expenses (travel and accommodation).
- We realized that the following negative trend – the demand for training services is normatively conditioned, e.g., these are driven by legislation changes and not by free market signals. The compulsory trainings – Construction technician and Health and Safety are much more desired. The same trend was observed by the insulation specialists, when the government approved the building renovation strategy.
- Taking into account these negative trends, we were quite intimidated by the extremely ambitious goals to train more than 800 workers in 2017 and 2018 on the EU projects T2nZEB and BUS EnerPro!

Because of this

So, with lots of effort, discussions, learning, sharing best practices and the support of our partners, especially EnEffect, we managed to achieve these ambitious project targets. The success factor was the availability of attractive trainers-practitioners, who were extremely interesting to the trainees. What else did we change:

- The project teams realized that it is hard to gather so many workers together during working hours, so virtual opportunities were utilized. This allows everyone to balance better between working hours and personal life. It also helps us avoid unpleasant situations such as this one - a construction company made a request through BCC for training on ventilation systems. We decided this was a good opportunity to add a basic nZEB training as well and it was Dragomir (EnEffect) who was supposed to take up this training. He travelled 250 km. away and made accommodation arrangements only to discover right before the training, early in the morning, that the construction company cancelled it! Me, who made the connection, was quite embarrassed, but it was a good lesson.
- We moved the practical trainings from the training centres into the premises of the company, accompanied by online theoretical course.
- Paid trainings gather more trainees – if someone spends money on education, they are more responsible and willing to learn. We introduced a new funding scheme, based on which companies need to cover some of the expenses for the trainings.
- The normatively conditioned compulsory trainings (health and safety, construction technician) gather more trainees. We should therefore strive to influence legislative changes especially in the field of EE. (BCC has recently submitted a proposal for an Ordinance for the design, implementation, control and acceptance of thermal insulation systems of buildings).

STORYTELLING - END

The climax

- The number of trainees increased gradually.
- Clearly divided strategic planning from implementation with well-established communication between teams.
- Good coordination on regional and international level.
- Improved organization of the practical trainings.
- Better understanding of the market.

The moral

Well, skills development turned out to be a long-term task, requiring a lot of effort, motivation, learning and exploring! After seven years of hard work, we know better the companies and their needs, wants, and skills gaps, we have learned our lesson, understanding better, how reality intervenes with social and folk psychology to influence the behaviour of trainees. The several Build up skills projects helped us get a deeper understanding on the demand and supply side of the EE skills in construction, which will definitely support us in our approach to the market. Thanks to the training schemes analysis performed in BUS League project we now have a continuing education concept, which will be tested through the project and be implemented in reality.

We realized that if we want to be successful, we should try to change mindsets to convince companies that EE is the future, therefore, we should be ready to meet the market skills requirements. Many EE projects are to come, driven by EU active policies and programs – we need to speed up the upskilling of the sector.

Yes, we know it takes time, at times even more time, to achieve something. This is why our story is open-ended. We have made some little steps, and much more is to come. But what always works is teaming up, collaborating, supporting each other, learning from each other and thinking out of the box.



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