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

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Report:	**D3.3 Final report on Best Practice Procurement Policy with energy efficiency clause**
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Date:	22.02.2023
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CHANGE RECORDS

Version	Date	Author	Changes
Version 0.1	27-10-2022	Marion Jammet	First draft
Version 0.2	10-01-2023	Marion Jammet	Incorporating partners feedback
Version 0.3	22-02-2023	Marion Jammet	Final draft
Version 0.4	21-03-2023	Domen Bančič	Proofreading
Version 1.0	11-04-2023	Marion Jammet	Final Version

DEFINITIONS

Award Criteria: the criteria on which the contracting authority will compare offers and base its award. EU procurement rules require contracts to be awarded based on the "most economically advantageous tender". Relevant environmental criteria can be inserted either as a benchmark to compare green offers with each other (in the case where the technical specifications define the contract as being green) or as a way of introducing an environmental element and giving it a certain weight.

Competency-based clause: Specific training or education may be requested as part of a tender, but they can only be requested as selection or award criteria and must specifically relate to the subject matter of the contract.

Green Public Procurement (GPP): A process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured[1]. To be effective, GPP requires the inclusion of clear and verifiable environmental criteria for products and services in the public procurement process.

Public procurement: The process by which contracting authorities (for example, local authorities) acquire goods and services from the market.

Selection criteria: The minimum requirements or standards that bidders must meet to progress further in the procurement exercise. Bidders that cannot demonstrate that they meet this baseline must be excluded from the competition. The selection criteria used must be relevant and proportionate to the procurement exercise being carried out.

Training clause: A clause that may be included whereby the company that won a tender commit to train all staff working on the project on a specific topic. Training clauses are for instance used in the Hauts-de-France region in France.

[1] Communication (COM (2008) 400) "Public procurement for a better environment"

SUMMARY

The building sector offers a large untapped potential for cost-effective energy and carbon savings. While technology is available to decarbonise Europe's building stock, research shows that building professionals and construction workers often lack the necessary skills and knowledge to support the delivery of energy efficiency full potential.

As the largest single consumer in the EU economy, the public sector can use its purchasing power to influence the market. In particular, Green Public Procurement (GPP) can stimulate the provision of more resource-efficient, less polluting goods, services and works within the marketplace. One of the main objectives of the BUSLeague project was to explore how public procurement could be better used to incentivise energy efficiency upskilling and improve the quality of work.

This report presents some examples and best practices of how public procurement can be used to incentivise (directly and indirectly) energy efficiency upskilling in the construction industry, including methodologies tested as part of BUSLeague. By presenting successful case studies, that are fully compliant with EU tendering rules, it is hoped that this document will inspire public bodies across Europe to use these tools to drive upskilling.

When exploring how public procurement could be used to incentivise energy efficiency upskilling, the project partners faced several challenges. These included uncertainties around the process, legislation and policies, competition with existing mechanisms, and reluctance from public bodies to introduce new rules as recruiting contractors to complete projects is already challenging in the current context (labour shortages).

This feedback, alongside the pilots which took place across Europe as part of BUSLeague, allowed the project team to put together some key recommendations for public bodies and policy makers who may be interested in using public procurement to incentivise upskilling.

KEY RECOMMENDATIONS

Public procurement can be used to incentivise energy efficiency upskilling both directly (e.g., through energy efficiency training clauses) and indirectly (e.g., by introducing higher quality standards).

New **requirements must be developed in close cooperation with a broad range of stakeholders**, including industry. Public bodies must **be fully transparent** about the process.

Given the additional work associated with the introduction of additional requirements, energy-efficiency training clauses are **typically used for ambitious projects** (often going beyond minimum building regulations) over a certain size (€).

Additional requirements should initially be piloted on some specific projects. However, overtime the same rules should apply to all projects in a region/country to ensure consistency. This is key as labour shortages are an issue across Europe.

High quality templates and guidance documents are critical and should be made available to public bodies willing to use public procurement to incentivise upskilling.

Onsite training is usually well received by building professionals and trades working on a project. It also allows them to gain a better understanding of how their work connect with the work of other building professionals and construction workers.

1. INTRODUCTION

1.1 PUBLIC PROCUREMENT AS A POLICY TOOL TO SUPPORT UPSKILLING

Public procurement is a strategic instrument for Member States of the European Union (EU). It constitutes approx. 14 % of the EU Gross Domestic Product[2] – and thus has the potential to provide significant leverage to influence the market and achieve environmental improvements in the public sector.

Green Public Procurement (GPP) remains a voluntary instrument in the EU. However, several EU policies and pieces of legislation highlight that public bodies must lead by example in the transition to a low-carbon economy[3]. **By using GPP, public authorities can provide industry with real incentives for upskilling, and other stakeholders with the confidence they need to upgrade their buildings.**

Public procurement can support energy efficiency upskilling both directly and indirectly. Directly, through the use of competency-based clauses and energy efficiency training clauses, and indirectly, for instance by introducing quality checks going beyond regulatory standards.

1.1.1 Competency-based clauses

Art. 66 of Directive 2014/24/EU **explicitly states that the organisation, qualification and experience of staff assigned to performing a contract** (where the quality of the staff assigned can have a significant impact on the level of performance of the contract) **can be a criterion for awarding a contract**. **For complex contracts such as building contracts, it can usually be expected that the quality of the project managers, design team, specialist consultants and contractors can have a significant impact on the performance of a project**.

However, the educational and professional qualifications of the service provider or contractor or those of the undertaking's managerial staff may only be evaluated once in a tender procedure, either at the selection stage or as an award criterion (Annex XII, Part 2 f of Directive 2014/24/EU).

The terms on which these selection criteria can be applied, and the means of proof which can be requested, are specified in Article 58 and Annex XII of the Procurement Directive 2014/24/EU. At the selection stage, bidders must be allowed to prove their technical and professional capacity through various means. Evidence of professional qualifications, labels and certificates from other member states must be taken into consideration. Technical specifications which refer to particular standards must be accompanied by the words 'or equivalent'. Furthermore, selection must be proportionate. E.g., there is a limit on the number of previous contracts which bidders can be asked to provide to demonstrate technical ability.

To reduce the environmental impact of public purchasing, the EU highlighted the need to identify and develop GPP criteria for products, services and works which account for a high share of

[2] COM(2017) 572 final "Making Public Procurement work in and for Europe"

[3] For instance, the European Green Deal (COM/2019/640 final) states that "public authorities, including the EU institutions, should lead by example and ensure that their procurement is green". The Energy Efficiency Directive and the Energy Performance of Buildings Directive (EPBD) also require public authorities to lead by example by becoming early adopters of energy efficiency improvements.

public purchasing combined with a significant improvement potential for environmental performance. In 2016, the Joint-Research Centre published the "Green Public Procurement Criteria for Office Building Design, Construction and Management".

The Guidance document which is currently under reviewed (Project plan | Product Bureau (europa.eu)) was developed to provide procurers with orientation on how to effectively integrate GPP criteria for office buildings into the procurement process. It addresses the procurement process for office buildings, including their design, site preparation, construction, servicing and ongoing management.

Project team competencies (design team and contractors) is a key criteria of the EU's GPP, which can for instance be used as a selection criterion. The proposed GPP criteria relating to the ability of the tenderer for office building is summarised in the table below.

GPP criterion	Brief Description
Criteria related to the ability of the tenderer	
Competencies of the project manager	*Experience and expertise in the management of:* - *Contracts with environmental performance requirements* - *Implementation of environmental technologies and design innovations* - *Financial appraisal of environmental technologies and design innovations*
Competencies of the design team	*Experience and expertise in:* - *Energy efficient building fabric and services design and commissioning* - *Specification of resource efficient construction* materials. - *Use of multi-criteria building assessment and certification schemes,*
Competencies of the lead construction contractor and specialist contractors	*Experience and expertise in:* - *Energy efficient building fabric and services design and commissioning* - *Procurement of resource efficient construction* materials. - *Implementation of demolition site waste management plans*
Competencies of design, build and operate (DBO) contractors and property developers	*Experience and expertise in the selection and management of:* – Design teams to achieve environmental performance requirements – Main contractors who have delivered buildings with environmentally improved performance – Ongoing facilities management in order to optimise the performance of office buildings

Figure 1: GPP Criteria related to the ability of the tenderer for Office buildings - Source: JRC, 2016

The document includes core criteria to assess the ability of the tenderer. These were developed to be used by any contracting authority across the Member States with minimum additional verification effort or cost increases.

1.1.2 Training clauses

Training clauses allow public procurers to require companies winning highly ambitious projects (reaching the NZEB standard or beyond) to train their staff in energy efficiency. This type of clause is currently used in the Hauts-de-France region (France), where the companies winning these projects must train staff working on a project (construction workers and site supervisors) in energy efficiency. As part of BUSLeague, the energy efficiency training clause was also piloted in Bulgaria and Ireland.

1.2 ABOUT THIS DOCUMENT

Public procurement is a strategic instrument which can significantly influence the market, but to date, it hasn't been widely used to support energy efficiency upskilling. One of the objectives of the BUSLeague project was to explore how it could be better used to incentivise energy efficiency upskilling in Europe.

The first step in that process was to analyse the main barriers to incorporating the "Energy efficiency" training clause and competency-based clause into Public Procurement.

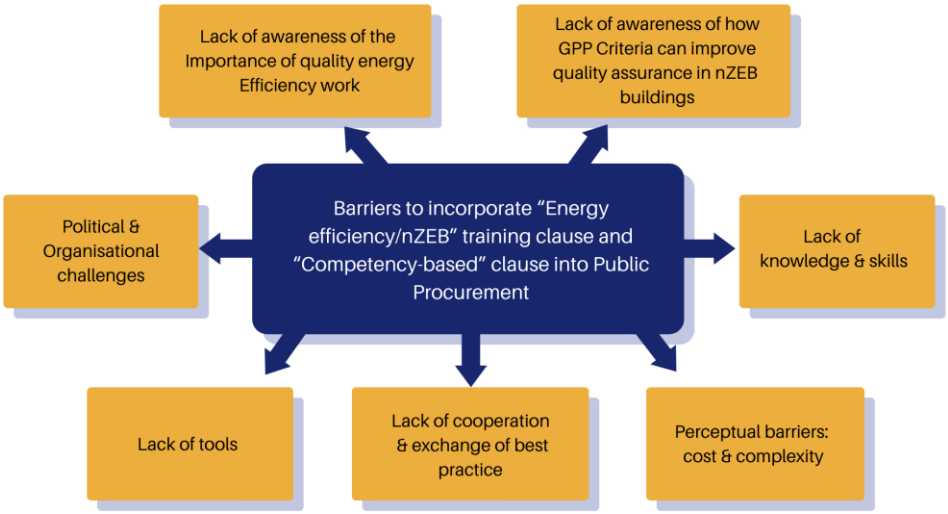


Figure 2: Barriers to incorporating energy efficiency training clauses and competency-based clauses into Public Procurement identified as part of BUSLeague

Building upon these findings, BUSLeague partners identified a number of public procurement best practices to directly and indirectly incentivise energy efficiency upskilling. These fully compliant with EU tendering rules best practices were compiled into a "D3.2 Using Public Procurement to Incentivise Upskilling – Best Practice Guide" released in March 2022. The objective of the report was first and foremost to support and inspire project partners and public bodies as they tested the energy efficiency training clause and other public procurement mechanisms to incentivise upskilling as part of BUSLeague.

This report is an updated version of D3.2. It includes the result of the pilots, information on other relevant activities undertaken as part of BUSLeague to ensure public procurement is better used to incentivise upskilling, as well as additional case studies. It covers both indirect (Section 2) and direct ways (Section 3) to incentivise upskilling through public procurement and highlights the importance of policy, as well as high-quality guidance documents and templates (Section 4).

Given labour and skills shortages represent one of the main risks to the successful decarbonisation of buildings across the continent, it is hoped that this report would inspire public bodies and policymakers across Europe.

Figure 3: Using Public Procurement to Incentivise Upskilling - BUSLeague Pilots – Timetable

2 INDIRECT USE OF PUBLIC PROCUREMENT TO DRIVE ENERGY EFFICIENCY UPSKILLING

This section presents five examples of how public procurement can be used to indirectly drive energy efficiency upskilling:

- The highly successful Social Return on Investment Obligation (section 2.1), the Social Culture Ladder (section 2.2) and the CO2 Performance Ladder (section 2.3) all in use in the Netherlands,
- The introduction of highly ambitious air-tightness standards as part of public procurement in Austria (section 2.4), and
- Higher building quality standards in the Netherlands (section 2.5).

2.1 CASE STUDY: SOCIAL RETURN ON INVESTMENT (SROI) OBLIGATION

Local governments in the Achterhoek region (NL) include conditions concerning social return in their procurement and contracting policies, the so-called Social Return On Investment (SROI). For every contract that meets certain conditions, such as contracts related to construction and installation, the SROI provision is imposed in the tender.

According to this provision, a certain percentage of the contract sum – in the Achterhoek region 5% – must benefit the community at a regional or local level. This can be done by spending this percentage on activities such as labour participation, social procurement, and social activities. Linked to the SROI requirement are provisions on the actions to be taken, the value they represent and how they are to be accounted for. Winners of tenders receive support from the Achterhoek Employers Service Points - *Werkgevers Servicepunt Achterhoek* (WSPA).

2.1.1 Rationale: Why was this approach taken?

The decision to use Social Return on Investment was prompted by the desire to **better integrate projects with the labour market** and **to increase the value of public procurement to society**. Social return is often deployed on labour market themes, which means that **public contracts increase access to the labour market for groups that are more likely to face difficulties accessing it,** due to factors such as mental and physical disabilities, school dropouts or long-term unemployment. In the Achterhoek region, the following three reasons are mentioned to start working with the approach:

- To create employment for people with specific difficulties entering the labour market;
- To promote and strengthen strategic cooperation between governments, regional employers, and training companies;
- To reduce the burden of benefit recipients and reintegration funds.

2.1.2 *Methodology: How is this implemented?*

SROI has been used in the Netherlands for more than a decade, but interest and commitment have increased significantly over the past few years. In the Eastern Netherlands, which includes the Achterhoek region, for example, work has been done on a standard classification of blocks. Blocks are the actions with which the SROI obligation can be fulfilled. The blocks are subdivided into three themes:

- Labour participation, to get as many people as possible into the labour market.
- Social procurement, to support organisations with a social purpose.
- Social activities (MVO), aimed at the labour market, craftsmanship or education.

Both labour participation and social activities contribute, certainly in construction projects, to the promotion of sufficiently qualified construction personnel. The first is by providing internships (*stages*) and workplaces, and the third is by improving training. The SROI obligation must be fulfilled as much as possible with the first or, if not possible, the first and second together. Below is part of the list with the blocks.[4]

7	Werkervaringsplek[0]	€ 750 per maand	Overeengekomen periode
8 9	Leerling BBL (leerbaan), niveau 1 en 2 Leerling BBL (leerbaan), niveau 3 en 4	€ 20.000 per leerwerkjaar € 15.000 per leerwerkjaar	Opleidingsperiode
10 11	Leerling BOL (stage), niveau 1 en 2 Leerling BOL (stage), niveau 3 en 4	€ 7.500 per stage € 5.000 per stage	Opleidingsperiode
12	Leerling VSO/Praktijkonderwijs	€ 5.000 per stage	Opleidingsperiode
13	Leerling VSO/Praktijkonderwijs tot 18 jaar (werkplek na uitstroom)	€ 25.000	Eenmalig
14	MVO-activiteiten	€ 100/uur en/of factuurwaarde	

As the method is used by all contracting authorities in the region, companies are subject to the same rules throughout the region. This applies not only to the rules to be complied with, but also to how monitoring and reporting takes place. For example, all contracting authorities in the Achterhoek region use a single system to record progress.

The SROI obligation is fulfilled by the winner of the tender in consultation with the WSPA. In

[4] The complete list of Blocks can be found here: https://www.sociaaldomeinachterhoek.nl/assets/Uploads/Downloads/760c78cad3/Handleiding-SROI-2019.pdf

the Achterhoek Region, this organisation has three tasks in contact with the winner of the tender: Advising the contractor before implementation, monitoring during the project, and enforcing compliance if a contractor fails to meet its obligations (possibly with fines).

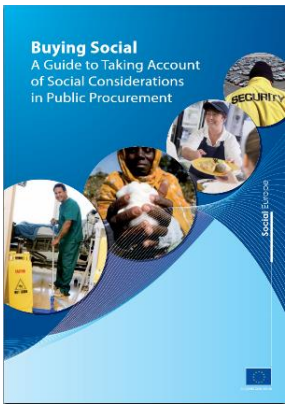
Because extra effort is required from both the client and the contractor, which must also be monitored, a certain minimum size of contract (which varies from one local or regional government to another) is needed to use the SROI instrument in a justified manner. The national government, therefore, applies a minimum contract sum of €250,000 and a SROI value of 5%. Because SROI is not a statutory obligation, there is room to deviate from this in specific situations and to apply different thresholds regionally and locally.

2.1.3 Results

As is often the case, market players did not want to face additional obligations as part of tenders and wanted the technical requirements to remain as minimal as possible. However, in the construction sector, **SROI obligations have been shown to contribute positively to companies' development**. For instance, **it has helped companies in recruiting well-trained personnel, among other things, through high quality supervised work placements** introduced as part of the SROI obligation. By sharing these stories, resistance to the SROI obligation has decreased significantly.

A good result that is sometimes observed in the Achterhoek region is that companies are already incorporating the SROI principles into their own human resources management policies. The result is that compliance with the SROI obligations in these companies is then 'automatic' - although monitoring will always be necessary.

2.1.4 Replication and next steps



The SROI instrument is widely used in the Netherlands and **is fully compliant with the EU tendering rules**. From a legal point of view, it can hence be used in all member states. A precondition for its successful replication is that the implementation of social policy for people distant from the labour market is more or less the same as in the Netherlands. However, **some of the "blocks" such as guest lectures and work placements, could be easily implemented anywhere**. Further information on the SROI is available in the EU's "Buying Social – A Guide to Taking Account of Social Considerations in Public Procurement" manual[5].

Organisations interested in using the SROI should remember that it will take time for its use to become common practice. Although it is now widely used in the Achterhoek region, the accumulation of knowledge is still ongoing.

The success of the SROI in the Netherlands shows that it is possible to impose additional conditions to the winner of a tender, as a 'Technical specification'. What is interesting in this case study is that the principle of 'opposition beforehand, glad of it afterwards' applies. The contracting authorities have imposed additional obligations that ultimately have benefited local companies, and society.

[5] The manual can be found here: https://op.europa.eu/en/publication-detail/-/publication/cb70c481-0e29-4040-9be2-c408cddf081f

2.2 CASE STUDY: SOCIAL CULTURE LADDER

2.2.1 Rationale: Why was this approach taken?

The Safety Culture Ladder (SCL) was developed to encourage a greater safety culture in the building industry and among contractors. Under the SCL scheme, the "safety culture" is defined as a combination of knowledge, awareness, and attitude on site and in the office.[6] Reaching a certain grade of "safety culture" is mandatory for organisations bidding for some projects. For other projects, upskilling in safety ("growing its safety culture") to a specified level is rewarded as already having that level as part of the tendering process. ProRail (the owner of the Dutch rail network) encourages organisations "...to work more safely as it offers advantages during tenders".

2.2.2 Methodology: How is this implemented?

The Safety Culture Ladder has five steps. It goes from deliberate denial of security risks ('Ignorance is bliss') to progressive (safety is fully integrated into the operational processes).

For some projects, a specific base level (usually level 2 - Reactive; 'any change in behaviour is ad-hoc and temporary') is mandatory. For others, it might be sufficient for contractors to prove that they have a plan in place to develop their safety culture to a certain level. At the end of the project, the certifying organisation will check if that organisation has reached that level of safety culture. If they haven't, they will be set back on the ladder to a lower step.

The SCL is constantly trying to increase safety awareness among contractors. The "stick" approach described above is critical in ensuring safety remains a key issue at all times. It has been agreed by the stakeholders involved to raise the base level from level 2 to 3 (Calculating; 'safety rules are considered important') in the near future.

2.2.3 Results

The SCL is intended to encourage companies to work more safely and healthily. SCL certificate is increasingly required for tenders and contracts for national suppliers such as ProRail.

The system has been highly successful to date, and the SCL was made mandatory by the Dutch construction governance code in 2021. The level of trust in the system meant that all parties were able to agree on a higher base level to be introduced in the near future. A big advantage of the SCL is that it raises awareness about safety and builds on trust to share information about unsafe situations so that organisations that use the SCL can learn from each other. In brief, it helps contractors to have a stronger and internalised safety assurance system.

A key advantage of the system is that the audits are based on actual behaviour – not only on paper works. In addition, as sometimes organisations have the option to reach the required level within 3 months after winning the tender, the SCL offers a huge "carrot" for upskilling. On the negative side, the certification process is time-consuming and expensive for the biggest and most dangerous projects – the cost is based on company's size and level of physical risk. Physical risks are related to among others working on height, with chemicals, or with large machinery.

[6] https://www.veiligheidsladder.org/wp-content/uploads/2016/07/Safety-Culture-Ladder-Certification-Scheme_4.0-final.pdf - page 43

2.2.4 *Replication and next steps*

Building upon the structure of the SCL, ISSO is developing a Sustainability Culture Ladder. This will include an "eco-pass" or "sustainability pass" covering the minimum environmental knowledge requirements. The idea is to develop a basic level of sustainable building knowledge across the industry and a culture of upskilling, e.g., through toolbox meetings. Topics covered will be highly diverse, from waste management to bio-based materials and energy efficiency.

As sustainability is still often only considered as a "nice to have", ISSO will try to minimize the cost of certification and ensure the scheme is attractive to contractors (e.g., by showing them that they would be ahead of the curve on sustainability issues). One thing that is still to be decided is if the scheme will be used as an award criterion or in a different way.

When compared to the CO2 Performance Ladder – presented below, the Sustainability Culture Ladder focuses not on processes, but on mindset in people: as part of the system, people should be trained about working sustainably. Also, the scope is broader, because, besides CO_2 reduction in organisation and supply chain, the Sustainability Culture Ladder focuses on waste management, circularity and so on. Involving the CO2 Performance Ladder in or relating it to the Sustainability Culture Ladder is also a topic to investigate.

More information on the Safety Culture Ladder is available at https://safetycultureladder.com/en/.

2.3 CASE STUDY: CO2 PERFORMANCE LADDER

2.3.1 *Rationale: Why was this approach taken?*

The CO2 Performance Ladder (CO2PL) is a practical instrument that uses the Power of Procurement to drive change by stimulating structural CO_2 reduction, specifically by providing an award advantage in tenders for applicants that ensure implementation of an effective CO_2 management system. Encouraging CO_2 emissions reductions, indirectly encourages energy efficiency upskilling through the supply chain.

The Foundation for Climate Friendly Procurement and Business, in Dutch 'Stichting Klimaatvriendelijk Aanbesteden en Ondernemen' (SKAO), is the owner and manager of the CO2 Performance Ladder. As an independent, not-for-profit foundation, SKAO is responsible for the development, management and dissemination of the CO2 Performance Ladder as both carbon management system and procurement instrument.

2.3.2 *Methodology: How is this implemented?*

The CO2 Performance Ladder as a procurement instrument uses the 'power of procurement' to: direct investments towards a low carbon economy, encouraging companies who participate in tenders to stimulate their CO2 awareness and reduction in their organisation, projects, and supply chain.

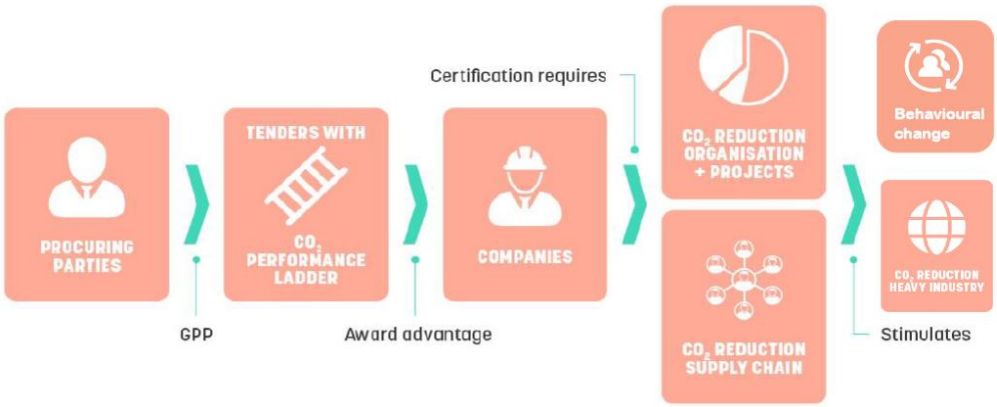
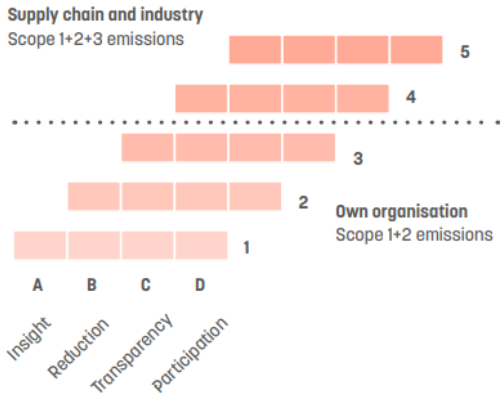


Figure 4: CO2 Performance Ladder - Theory of Change

During tendering processes, commissioning parties using the CO2 Performance Ladder as a Green Public Procurement (GPP) instrument gives a financial advantage to sustainable tenders. The greater the company's level of ambition with regard to sustainability, the greater the advantage they receive. The five ambition levels are in line with the five levels of certification that companies can obtain, enabling government bodies to reward companies that actively work to reduce the carbon footprint of their business operations.



2.3.3 *Results*

Set up in 2009, the CO2 Performance Ladder is now the standard Green Public Procurement (GPP) instrument in the Netherlands, with over 300 public bodies using the CO2PL[7] as a GPP tool and over 5,000 organisations certified – Over 75% of them SMEs.

[7] Including the administrators of the Dutch water, road and rail infrastructure Rijkswaterstaat, ProRail and various central government bodies.

As a third-party certification, the CO2PL reduces the burden on procurement authorities to verify sustainability claims. For businesses, the CO2PL can reinforce their market position as a sustainable supplier and helps improve products and services. One certificate can be used for all projects for all contracting authorities using the Ladder in their procurement, making it extremely efficient. The OECD, among others, recognises the CO2 Performance Ladder as a Best Practice for sustainable procurement. From an environmental point of view, it has been shown that certified organisations reduce their emissions twice as fast as the average company in the Netherlands[8].

A recent development is that Contracting authorities are certifying their organisations on the CO2 Performance Ladder in the context of 'practice what you preach'. For example, the Ministry of Infrastructure and Water Management is certified on level 5, and all Dutch ministries have committed to gaining a certificate.

2.3.4 Replication and next steps

The scheme is fully compliant with the EU Procurement Directive, and hence applicable in other member states. Already piloted in Belgium, SKAO is working with the International Institute for Sustainable Development, and with support from the IKEA Foundation to pilot the scheme in more European countries.

Organisations interested in piloting the CO2PL should contact SKAO. More information: www.co2performanceladder.com.

2.4 CASE STUDY: INTRODUCING AMBITIOUS AIRTIGHTNESS STANDARDS IN PUBLIC PROCUREMENT

2.4.1 Rationale: Why was this approach taken?

To support the European path to greater sustainability and to live up to the exemplary role of the public sector, the Austrian federal government developed a new Action Plan for Sustainable Public Procurement. In Austria, public procurement rules are harmonised at the national level.

Since 2021, new green public procurement criteria apply to federal public buildings in Austria. These require that new and refurbished federal buildings match the *klima**aktiv** building standard*. The *klima**aktiv** building standard* is a national-specific sustainability rating system for buildings published by the Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology. The criteria set is transparent and freely accessible. The *klima**aktiv** building standard* not only assesses and evaluates energy efficiency, but also the quality of work, the quality of construction materials and design, as well as aspects such as location, comfort, and indoor air quality. In line with this building standard, a blower door test to prove airtightness must be performed[9]. The result of a blower door test relates directly to the quality of work onsite. The mandatory use of the *klima**aktiv** building standard* can become a cornerstone for raising the

[8] Facts & Figures (co2-prestatieladder.nl) - Onderzoek (co2-prestatieladder.nl)

[9] The owner or the architect/constructor can do the klima**aktiv** declaration themselves without costs. The documents such as Blower-door test etc. have to be uploaded to a platform. There is a plausibility test from klima**aktiv** side afterwards and if the documents and inputs are approved, the owner/architect will receive a certification/notification. The approved buildings owners/architects are invited to a yearly ceremony receiving a badge indicating the klima**aktiv** rating (silver, gold, etc.). Read more at https://www.klimaaktiv.at/bauen-sanieren/gebaeudedeklaration/kriterienkatalog.html

quality of craftsmanship, and lead to a higher demand for highly skilled building professionals in Austria.

Figure 5: Mandatory airtightness blower door test as a way to improve craftsmanship.

2.4.2 Methodology: How is this implemented?

Since 2021, new and refurbished federal buildings must match the *klima**aktiv** standard (silver or gold)*. This means proof of airtightness is required for all these projects.

2.4.3 Results

The approach is new, and its impacts haven't been fully evaluated yet. The idea is that public buildings will act as best practice examples for the public and promote the realization of high sustainability standards. Furthermore, the mandatory implementation of airtightness tests should raise the quality of craftsmanship and lead to a higher demand for highly skilled building professionals in Austria.

2.4.4 Replication and next steps

To increase impact, it is suggested to extend the *klima**aktiv** building* requirements to buildings of the federal provinces and communities of Austria in the near future. Furthermore, to support the binding quality controls that go together with the *klima**aktiv** building* standard, the Austrian Energy Agency in cooperation with the umbrella organization for energy advisors (ARGE-Eba) and the energy Agency of Styria develops and implements short trainings for energy advisors within the BUSLeague project. These actions should further incentivise companies to send their employees to trainings and further educational construction courses, to minimise the risk of construction errors.

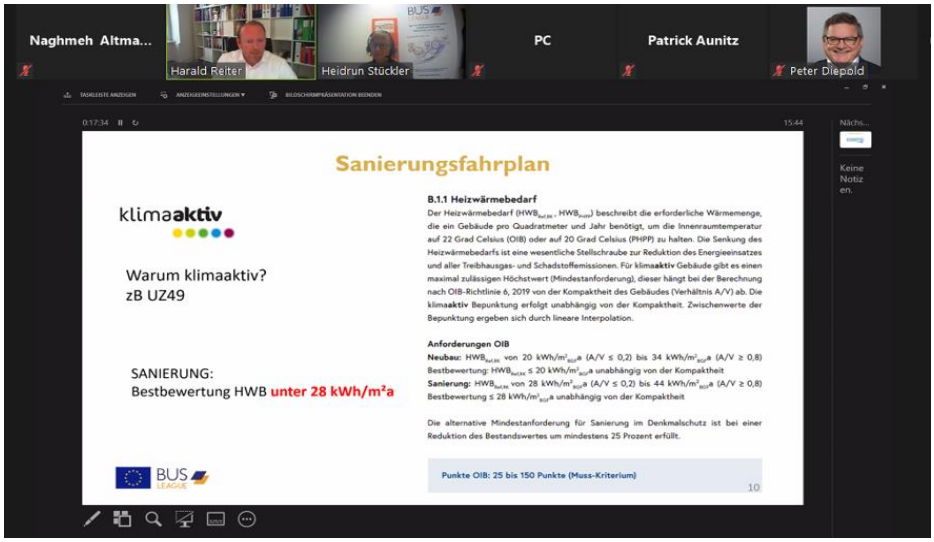


Figure 6: Klimaatkiv training course for energy advisors run as part of BUSLeague. (Source: AEA)

2.5 CASE STUDY: WKB-PRESTATIELADDER

2.5.1 Rationale: Why was this approach taken?

In the next few years, in The Netherlands, there will be a new system introduced for proving the building quality of new builds and deep renovation projects. This system is defined in the Wet Kwaliteitsborging voor het bouwen (Wkb; Quality Assurance Act for Building). Under this law, the quality assurer gives on completion of a building a declaration of justified trust that the building is built in accordance with the building regulations. To assist the quality assurer, KOMO has developed the WKB-prestatieladder[10], to give the quality assurer tools to make the right choices in the quality assurance process, and to make it as easy as possible.

2.5.2 Methodology: How is this implemented?

Quality assurance focuses on two themes: building materials and building process. The justification of the trust in the building process is among others based on the skills of all the people involved (designers, craftsmen, quality assurers). When the quality assurer doesn't get confidence in the building process he has to do more quality checks, which makes the quality assurance more expensive. This means that when a contractor (builder or installer) employs well skilled workers, the costs for the quality assurance will be lower, and in most cases, the building quality will be even better. With the WKB-prestatieladder, the quality assurer has a tool to reward the skills and knowledge in a systematic and reproducible way, so he can justify his choices for fewer quality assurance checks when a building is built by better-skilled people.

2.5.3 Results

This WKB-prestatieladder system is still under development by KOMO. ISSO works together with the market on tools for proving quality under the WKB law. The tools of ISSO can be used in the WKB-prestatieladder.

[10] KiK en Wkb - KiK KOMO (kik-komo.nl)

2.5.4 *Replication and next steps*

The WKB-prestatieladder is an example of how to include the request for skills in a different part of the building process, i.e., commissioning based on quality. The better skilled the workers are, the lower the effort needed for proving the building's quality, because confidence seems justified that better-trained people deliver better quality and can report better on the performance of the work.

The WKB-prestatieladder only works in an environment where the quality assurance of the building quality for new builds and deep renovation is obligatory and where the quality assurance system is open. When the rules for quality assurance are strictly described, the WKB-prestatieladder can't come into practice, because it needs an environment of evidence-based trust.

3. DIRECT USE OF PUBLIC PROCUREMENT TO INCENTIVISE ENERGY EFFICIENCY UPSKILLING

This section presents how some sort of energy efficiency training clause has been used in France (Section 3.1), Ireland (Section 3.2) and Bulgaria (Section 3.3). It also covers an alternative procurement methodology to support upskilling, the Train4Sustain approach (Section 3.4).

3.1 CASE STUDY: ENERGY EFFICIENCY TRAINING CLAUSE IN FRANCE

This case study details how the energy efficiency training clause was used by social housing provider/landlord CLESENCE for the renovation of four residential units within a multi-family dwelling in Avesnes-les-Aubert.

The project aimed to be certified to the NZEB label by Effinergie Rénovation, within the French High Environmental Quality Standard (NF HQE). The overall objective was to reduce the impact of the building on the external environment and to create a healthy and comfortable indoor environment for the occupants.

3.1.1 Rationale: Why was this approach taken?

Achieving performance levels related to this certification implies the respect of requirements and constraints defined by the reference framework and stated in the written documents of the contract, especially regarding the use of certified products and/or processes and if not, justifying equivalent characteristics. Eco-renovation and eco-construction require using new techniques and materials, as well as addressing airtightness and thermal bridges, to reduce the loss of energy. To achieve this standard, the contracting authority used an energy efficiency training clause, requiring the implementation of multi-trade onsite training, through the Integrated Work Training - FIT (*Formation Intégrée au Travail*).

Figure 7: Onsite training as part of the FIT programme

Article premier : Objet du marché - Dispositions générales

1.1 - Objet du marché

Le présent marché concerne des travaux de réhabilitation d'un immeuble de 4 logements collectifs sis 6 passage Largillière à AVESNES LES AUBERT (59), pour le compte de CLESENCE. Il s'agit d'un ensemble immobilier pour lequel une certification NF Habitat HQE Rénovation Logement niveau d'entrée, label BBC Effinergie Rénovation été initiée.

Il s'agit d'une relance. L'exécution du marché comporte désormais une action de formation.

La description des prestations est détaillée dans le cahier des clauses techniques particulières (CCTP).

Pénalités pour non-respect de l'obligation de suivre à la formation :

Le maître d'œuvre se chargera de veiller à la bonne mise en œuvre et à la coordination de l'action de formation sur le chantier. La présence aux heures de formation sera certifiée par un émargement et une attestation délivrée à la fin de la formation. L'engagement à suivre cette formation est contractuel, tout défaut d'assiduité sera donc soumis à pénalités. Voir article 6.3 ci-après

3.1.2 Methodology: How is this implemented?

Once the project started, a project coordinator organised training for site operators (apprentices, workers, journeymen, team leaders, etc.) and site managers (site foremen, works managers, managers, etc.)[11]. The training was also opened to other stakeholders who work onsite and are part of the development team and whose involvement is essential to enhance transversal appropriation.

The training course was implemented based on the progress of the work at the most appropriate time, i.e., when there is a maximum number of workers onsite. An information meeting was organized first by the project management in the presence of the project owner to present the training, to proceed to the constitution of the groups between the different trades, and to set the operational calendar.

The training programme was as follows:

- Module 1 (M1): Technical approach to airtightness (4 hours)
- Module 2 (M2): Coordination, design, and management of a low-energy building site (7 hours)
- Module 3 (M3): Airtightness and good practices (7 hours)
- Module 3 bis (M3 bis): Waterproofing good practices (4 hours)
- Module 4: (M4) Feedback from operators (4 hours)

Site operators had to complete a 15-hour training course (modules 1, 3 and 4), and site managers had to complete an 11-hour training course (modules 2 and 3 bis).

Given the size of the companies involved in that project, the educational costs of the training were covered by Constructys, an organisation that support upskilling in the construction industry[12]. The training course allowed the beneficiary companies to deliver a high-quality project, and to improve their staff knowledge and competencies in relation to energy efficiency.

A certificate of attendance was issued for each participant who completed the course. In addition to the gain and the recognition of competencies for the employees, it allows the company to

[11] In France, the FIT coordinators work for the "*Maison de l'Emploi*" and are paid through national and regional funding. Read more at https://www.programmepacte.fr/fit-formation-integree-au-travail.

[12] Read more about financing mechanisms at FIT - Formation intégrée au travail | Programme PACTE

make reference to its engagement with these inter-trade formative approaches as part of future bids, etc.

Figure 8: A session of the Integrated Work Training (FIT) in Avesnes-les-Aubert

3.1.3 Results

For the contracting authority, the objective of the FIT action was to achieve, through the implementation of airtightness, a global energy performance. For companies and professionals, the objective was to upskill employees through the collaboration of different trades, and different levels of responsibilities, by making them better understand what other trades are doing and learning how to work together.

The FIT onsite training allowed SMEs to upskill their workers onsite. This is key as company managers usually want to avoid any "loss of time" for training, as they believe trainings would affect turnover. It also made it possible to better respect the deadlines, as there is less work to be redone.

3.1.4 Replication and next steps

This project was part of a series of ongoing FIT actions in the Hauts-de-France region. After this specific action, CLESENCE has fully integrated the relevance of the onsite training and is currently discussing other future similar operations.

Other organisations that used the clause include Sia Habitat. When using the clause, Sia Habitat engaged with its management team and white-collar employees working on energy renovation too. This was perceived as important as the feedback from onsite training shows that trades interaction is key in achieving good thermal performance. The onsite training FIT is now being made part of all the ERBM (Engagement pour le Renouveau du Bassin Minier) contracts.

A new "training clause" (FIT 2.0) focusing on building with biobased construction materials was recently developed and implemented by the Maison de l'Emploi et de la Formation of the Saint Quentinois (Hauts-de-France). The FIT 2.0 was piloted through onsite training with the contracting authority OPAL and other building companies under the leadership of the CREFAB

training centre. The FIT was used for building six dwellings using bio-sourced materials, and to raise awareness about these materials among white and blue-collar workers. Under the new French regulation (RE2020), the use of bio-based construction materials should become more and more common in the next few years.

3.2 CASE STUDY: ENERGY EFFICIENCY TRAINING CLAUSE IN IRELAND

The work at St. Bricin's Park was the culmination of a city-wide bedsit amalgamation programme run by Dublin City Council. The programme involved combining two adjacent bedsits to create a one-bedroom apartment which can accommodate one or two people. While all recent retrofits already achieve the Nearly Zero Energy Building (NZEB) standard, Dublin City Council undertook to go further with this pilot Passive House project (EnerPhit standard) to achieve a high-performance low-energy building and improve comfort for the residents.

Improved thermal comfort was achieved by externally insulating the walls, insulating the floor and roof, and installing high-performance external windows and doors. This was coupled with attaining a high standard of airtightness, eliminating, and minimising thermal bridges, and using mechanical ventilation with heat recovery systems in each apartment.

To achieve the EnerPhit standard, Dublin City Council included a Passive House Tradesperson's training requirement as part of the tender. Consequently, the construction team undertook a bespoke Passive House Tradesperson's Course, along with members of Dublin City Council's design and maintenance staff.

3.2.1 Rationale: Why was this approach taken?

St Bricins was the first project for which Dublin City Council tried to achieve the EnerPHit standard. The project was very much treated as a trial to investigate whether the standard could be successfully achieved.

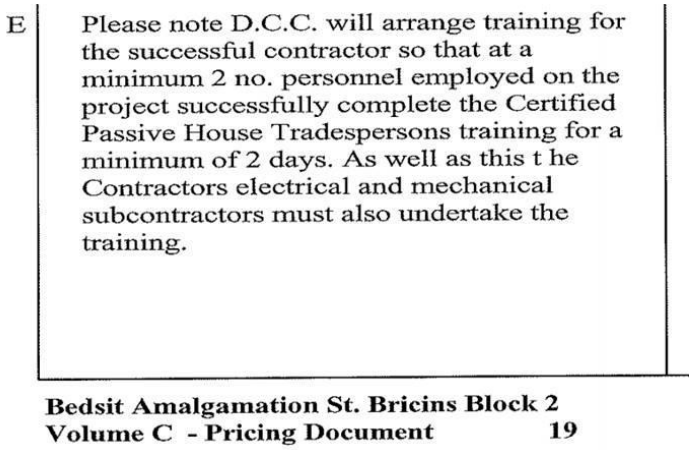
When the project was developed, it became clear that the airtightness requirements, the detailing to eliminate cold bridging, and the exhaust air heat pump were all likely to be unfamiliar to the contractors who may pursue tender for this project. As the training was so critical to the success of the project, Dublin City Council decided to include a training requirement in the tender.

3.2.2 Methodology: How is this implemented?

A clause was included in the contract to require workers to complete the Passive House Tradesperson's training. The training was paid for by the Dublin City Council and organised at the outset of the contract.

The training was organised in 5 sessions. The first session was theoretical and took place before the start of the project. The following sessions were highly practical and occurred on-site at the beginning of relevant activities. For instance, taping around windows was dealt with just before windows were installed and all participants were asked to carry out a length of airtightness tape to a window.

Contractor's personnel (10-12 people) were asked to take part in the whole training. They were joined for some sessions by the Council's inspectors, architects and engineers, who used it as an opportunity to upskill too.



E

Please note D.C.C. will arrange training for the successful contractor so that at a minimum 2 no. personnel employed on the project successfully complete the Certified Passive House Tradespersons training for a minimum of 2 days. As well as this t he Contractors electrical and mechanical subcontractors must also undertake the training.

Bedsit Amalgamation St. Bricins Block 2
Volume C - Pricing Document 19

Figure 9: Copy of the training clause used in the St Bricins' project. This is provided for information only; different requirements may apply to different types of contracts.

3.2.3 Results

St Bricins was Dublin City Council's first and only EnerPHit project to date, so there are no similar projects to compare it with. However, Dublin City Council staff highlighted that the

training clause most likely contributed to its success. The onerous requirements of EnerPHit were achieved by a contractor who had no previous experience of working to this standard. This would probably have been very difficult without the inclusion of the training clause and hands-on training. Furthermore, because of the training the construction workers were more enthusiastic about the project and great care what taken of all details.

Figure 10: On-site upskilling at St Bricins

3.2.4 Replication and next steps

Dublin City Council may not try to reach the EnerPHit certification again and the use of the clause requires resources. It's not only about including a new clause in the tender, but it must also be implemented, paid for, and enforced.

As future designs will include airtightness and cold bridging detailing that is more sophisticated than what has been normal, as well as ventilation systems and heat pumps that have not been widely used to date by contractors, including specialist training requirements in tenders and providing practical on-site training at the beginning of new projects could be highlight beneficial.

As part of BUSLeague, the energy efficiency training clause was piloted on the renovation of a protected building, Cnoc na Gaoithe Cultural Centre.

The building is an old convent repurposed as a community centre. It now incorporates a hostel, a chapel, and community spaces used to deliver various trainings for the local community (e.g., English to migrants, and music classes). The project was a sustainable energy renovation: The building fabric was improved, the old windows were renovated to improve efficiency and reduce waste, and the fossil fuel system was upgraded to a high-efficiency heat pump.

In addition to completing the NZEB Fundamental training, the construction workers received mentoring from the Technological University of the Shannon in energy efficiency, building materials and circular economy principles.

Galway City Council and Wexford County Council are also interested in using the clause ideally by the end of 2023 at the latest.

3.3 CASE STUDY: ENERGY EFFICIENCY TRAINING CLAUSE IN BULGARIA

As part of BUSLeague, the municipality of Gabrovo used the energy efficiency training clause to renovate its Summer Theatre Complex. The Complex, built in 1972 as a cultural centre for the citizens, comprises several buildings, facilities and an open area for various stage performances and initiatives. It had not been functioning since 2005 and was left in ruins without glazing, installations, coating, etc. The building was selected to pilot the clause as it offered high visibility potential due to its popular location and importance for the cultural life of the city. Furthermore, the reconstruction had to be fully aligned with the current energy efficiency standards.

3.3.1 Rationale: Why is this approach taken?

The national and EU policies to address climate change have turned into strategic documents pushing local governments to design and implement projects and initiatives related to energy efficiency in buildings and green measures. The Bulgarian Long-term Renovation Strategy envisages improvement of the energy performance of residential and non-residential buildings with the aim to speed up the usage of contemporary technologies in buildings. As of January 2020, buildings with poor energy performance (class E, F and G) comprise 91% of non-refurbished buildings in Bulgaria. This leaves room for a booming building renovation market, but the industry might struggle to cope with this sudden increased demand for qualified construction workers.

Moreover, when the National Renovation Programme for Multifamily buildings was implemented in 2015, the municipality of Gabrovo felt that the government-induced demand for energy-efficient construction picked up faster than the supply of well-trained construction workers. This was especially challenging in the smaller cities, where some of the renovation projects did not reach the expected level of energy efficiency.

To address this issue and ensure the reconstruction of the Summer Theatre Complex is of high quality and highly energy efficient, the municipality of Gabrovo decided to pilot the energy efficiency training clause on this project.

Figure 11: The energy efficiency training clause will be piloted on the retrofit of Gabrovo's Summer Theatre Complex.

3.3.2 Methodology: How is this implemented?

The tender document (aligned with the clause in use in the Hauts-de-France region) was published on 21st February 2022 (https://gabrovo.bg/bg/news-article/10973) with support from the Financial Mechanism of the European Economic Area.

The municipality of Gabrovo, as contracting authority, worked with EnEffect which offered training in energy-efficient construction principles, prior to the work start. The training clause was included in the procurement documentation and, subsequently, in the contract. These included a set of requirements and penalties in case of non-compliance. The training costs were covered by the contracting authority (with the support of EnEffect).

Prior to the start of the project, the contractor provided a list of employees who would work on the project. This was required to ensure all key personnel upskilled in the right area.

As part of the training clause, consultants completed a 14-hour theoretical training, followed by a 10-hour on-site training for construction workers where they shared their learning with them.

Training - Learning outcomes

1. General principles of deep renovation of the building stock (2 hours theory)

2. Approaches to achieve airtightness of buildings (5 hours theory, 2 hours practice)

2.1. Importance of airtightness (1 hour)

2.2. Technical solutions to achieve high airtightness (2 hours)

2.3. Practice (2 hours)

2.4. Airtightness test (1 hour theory, 1 hour practice)

3. Installation of thermal insulation systems (4 hours theory, 3 hours practice)

3.1. Types of thermal insulation systems (1 hour)

3.2. Specific requirements for the installation of thermal insulation systems (3 hours)

3.3. Practice (3 hours at the start of the activity)

4. Installation of windows (3 hours theory, 3 hours practice)

4.1. Technical solutions (1 hour)

4.2. Good practices in installation - RAL standard, outside installation, etc. (2 hours)

4.3. Practice (3 hours at start of activity)

5. Critical points and responsibilities of cross-functional teams when working together (1 hour theory, 1 hour practice)

3.3.3 Results

While this was the first time that the energy efficiency training clause was piloted in Bulgaria, the initial reaction was unexpectedly positive.

The interest in the procurement was significant with 8 offers submitted, which alleviated the initial fears of the municipality that contractors would be put off by the inclusion of a training clause in the contract. The training course itself however met certain obstacles, as it turned out that the design documentation and the estimate of costs and materials did not include the necessary details and construction components, which meant that the new knowledge and skills acquired through training could hardly be implemented in practice. However, the contracting municipality proved its dedication and willingness to conduct the process by renegotiating the contract, thus providing the necessary conditions for quality on-site implementation.

3.3.4 Replication and next steps

The pilot was perceived by the municipality as an opportunity not only to improve the quality of the construction and the energy efficiency but also as something that had the potential to stimulate the labour market and boost upskilling. It is now hoped that the results of the pilot will motivate other Bulgarian local authorities to use it, as proven by the Letter of Interest provided by the municipality of Smyadovo to EnEffect.

3.4 CASE STUDY: TRAIN4SUSTAIN

3.4.1 Rationale: Why was this approach taken?

TRAIN4SUSTAIN (T4S) is an EU-funded project aiming at addressing labour and energy efficiency skills shortages across Europe. Like BUSLeague, T4S tried to incentivise sustainable energy upskilling through public procurement.

3.4.2 Methodology: How is this implemented?

As part of T4S, a "Skills Passport" covering various sustainable energy skills was developed. The skills included in the passport can either be "self-assessed" by building professionals and construction workers themselves, or certified by an accredited body for a certain fee in the future. The Skills Passport is based on the Competence Quality Standard that is now a European CEN pre-standard (17939: 2022), and the skillset can be presented in a standardised format. The "skills passport" can then be used as part of public procurement.

3.4.3 Results

The methodology was piloted in Catalonia but is designed to be used across Europe for public and private procurements. While the self-assessment is useful for workers and professionals - to track progress and skills gaps, it is often perceived as risky by public bodies; these usually prefer independent certification for use in public procurement. When certified skills passports are used, the accredited body can be fully responsible for assessing someone's competencies, hence reducing risks for public entities. The challenge then is the cost of certification, which may be perceived as too expensive by most construction workers[13]. At the 14th BUILD UP Skills European exchange meeting, some participants highlighted the need to introduce these individual passports, alongside a passport at the company level to increase certainty[14].

3.4.4 Replication and next steps

The Train4Sustain approach could be replicated in several markets, but awareness-raising activities are required. For further information on the T4S approach and the pilot in Catalonia, please visit https://train4sustain.eu/about and D4.4 Launch of a "pilot" Green Procurement Process (GPP) based on the findings and initial guideline design in a case study.

[13] 14th BUILD UP Skills European exchange meeting – 28th, 29th November 2022
[14] In case a passport is linked to a worker who then moves away from the company.

4. USING PUBLIC PROCUREMENT TO INCENTIVISE UPSKILLING - THE ROLE OF POLICY & HIGH-QUALITY GUIDANCE DOCUMENTS

Some of the main barriers to the greater use of public procurement to incentivise upskilling are a lack of tools, knowledge, and skills[15]. Good quality templates and guidance documents are critical to addressing this issue. In the Spanish region of Valencia (*Generalitat Valenciana*), a comprehensive guide on green public procurement was released which includes detailed guidance on how to use public procurement to incentivise upskilling. In Ireland, the project partners developed an "energy efficiency training clause" template and tried to influence national policies to support greater use of public procurement to incentivise upskilling.

4.1 CASE STUDY: THE IMPORTANCE OF HIGH-QUALITY GUIDANCE DOCUMENTS

4.1.1 Rationale: Why was this approach taken?

In March 2018, the regional government of Valencia (*Generalitat Valenciana*) approved a "Practical guide for the inclusion of social responsibility clauses in the procurement of the Generalitat and its public sector". The aim of the guide was to systematise existing regulations. It includes examples of possible social responsibility clauses to be inserted in procurement procedures.

In 2020, the regional government of Valencia (*Generalitat Valenciana*) launched a Guide for Green Public Procurement in construction, the "*Guía Verde de medidas medioambientales en la contratación pública en el ámbito de la edificación de la Generalitat*". The guide has a high exemplary value, and influences the market, encouraging the private sector towards new forms of production and more responsible consumption where circularity and the efficient use of resources prevail. In May 2021, the guide was updated to cover the "competency-based clause".

Editor: Generalitat Valenciana (Regional Government of Valencia)

1st edition: June 2020

2nd edition: May 2021 (including a competency-based clause)

Link: https://guiaverda.gva.es/es

Competency-based clause: C4-01 (click here)

[15] BUSLeague – Deliverable 3.1 - Main barriers to incorporate "Energy efficiency/nZEB" training clause into Public Procurement (2021)

4.1.2 Methodology: How is this implemented?

The Generalitat Valenciana promotes the "Guide for GPP" and collaborates with the BUSLeague's Spanish partner, Valencia Institute of Building (IVE) in its elaboration.

The Guide is the result of a collaborative process in which the main stakeholders involved in the tendering processes are consulted to enrich the document. This process guarantees the quality of the document, and, for this reason, the Guide is approved as an "official" document by the Regional Government and is used by municipalities and other public entities.

The Guide is a dynamic policy instrument that evolves by incorporating new innovative measures. To facilitate its constant updating, it is published in digital format.

IVE's key role as a main contributor to the Guide offers the opportunity to propose new measures such as the consideration of Energy Efficiency-skilled professionals among others. These suggestions must be reviewed, verified and approved, not only by the Generalitat Valenciana but also by numerous prestigious entities in the sector.

As a result, the Valencia Institute of Building (IVE), proposed the inclusion of a competency-based clause in the guide and worked with the Regional Government of Valencia to develop it. Guidance on how to use the competency-based clause was integrated into the 2nd edition of the Guide for Green Public Procurement, in May 2021.

4.1.3 Results

The data sheet describing the competency-based clause on the experience and/or training of professionals is coded with the number C4-01. It contains information on the objective, description and verification of the competency-based clause and complementary information on legal aspects and related regulations.

Figure 12: Information on the competency-based clause, and how to use it in the Valencia Green Public Procurement Guidance document.

4.1.4 Replication and next steps

In 2023, the Guide for Green Public Procurement and therefore the competency-based clause will be applied to 3 pilot projects. These buildings will be constructed by the *Generalitat Valenciana* as laboratories to experiment with various innovations.

The first step in that process is detailing the requirements to be met by the training to facilitate the verification process. Key considerations to implement the clause to ensure consistency and promote quality are which skills and competencies should be covered, the minimum duration of the training courses, as well as who the training providers should be.

The first of these three tenders were published in January 2023 and it corresponds to a building of 13 dwellings in the city of "Castelló de la Plana" (Valencian region). It has a budget of almost €3M.

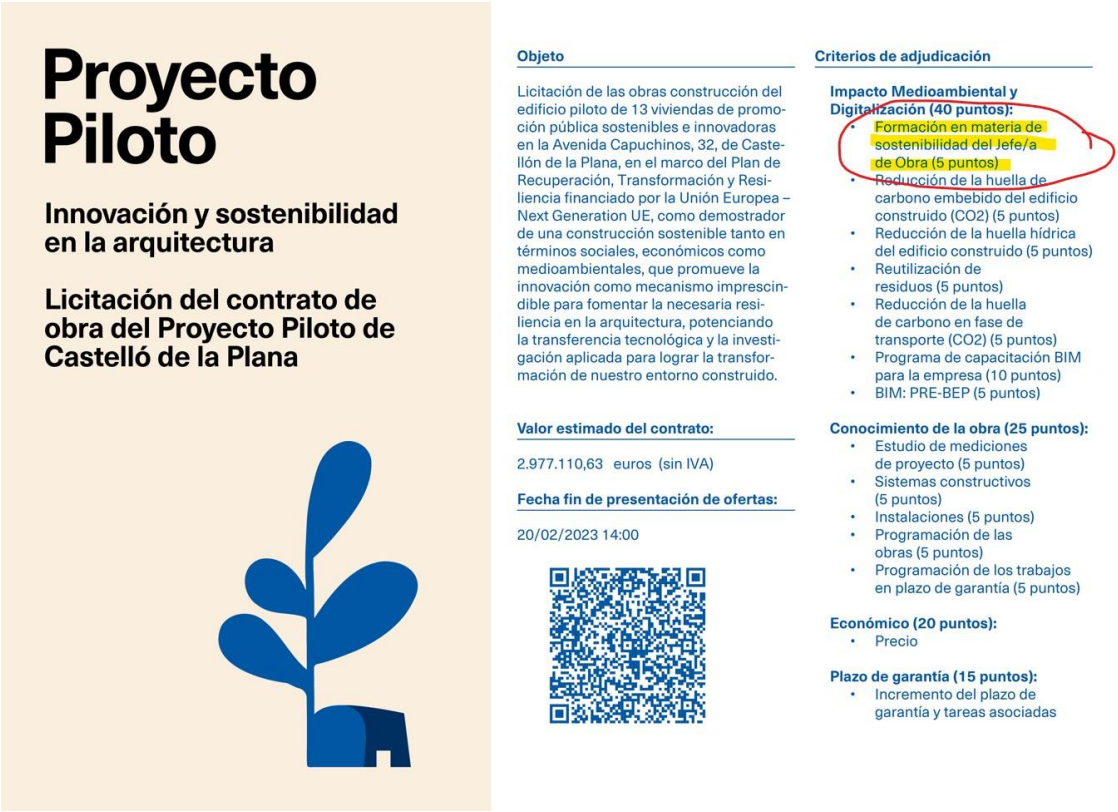


Figure 13: Announcement of the tender published by the Valencian regional government (GVA)

4.2 CASE STUDY: POLICIES TO SUPPORT A GREATER USE OF PUBLIC PROCUREMENT TO INCENTIVISE UPSKILLING

4.2.1 Rationale: Why was this approach taken?

In Ireland, the Irish Green Building Council (IGBC), and the Technological University of the Shannon (TUS) set up a working group to discuss how the energy efficiency training clause could be used more widely across the country. The working group was made up of construction, skills and public procurement experts, as well as public bodies representatives. It rapidly became clear

that labour shortages made the use of the clause by some public bodies challenging. Many local authorities were concerned about introducing new requirements for contractors in a very competitive market. Against this background, members of the working group decided to work together to ensure the new requirements would be introduced simultaneously by all public bodies.

4.2.2 *Methodology: How is this implemented?*

To progress towards this objective, the working group developed a draft energy efficiency training clause for Ireland and a business case for its use at the national level, and presented it to senior officials in central government, i.e., in the Department of Public Expenditure and Reform, in the Department of Enterprise, Trade and Employment, in the Office of Public Works, in the Office of Government Procurement and in the Environmental Protection Agency.

This recommendation was also included in several submissions to public consultations made by the Irish Green Building Council (e.g., Climate Action Plans 2021 and 2023), and in the IGBC's Roadmap to decarbonise Ireland's built environment across its whole life cycle, Building a Zero Carbon Ireland. These actions were supported by press articles, published in specialised media (e.g., Irish Construction News and Construction Management Ireland).

4.2.3 *Results*

As of February 2023, a number of official documents, including the Skills for Zero Carbon report, now mention the importance of exploring how public procurement could better incentivise upskilling.

20 Explore the utilisation of public procurement processes to incentivise participation in retrofit training.

4.2.4 *Replication and next steps*

Changing policies to better support energy efficiency upskilling takes time and this remains a work in progress.

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