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Content

CHARACTERISTICS OF THE DELIVERABLE	4
AUTHORS AND CONTRIBUTORS	4
1. INTRODUCTION.....	5
2. The municipalities and the pilot projects in a nutshell.....	9
2.1. The municipality of Alzira (Spain) and the refurbishment of an old (1891) orange storage building.....	9
2.2. The municipality of Koprivnica (Croatia) and the renovation of a prefabricated kindergarten building.....	9
2.3. The municipality of Mértola (Portugal) and the renovation of the city hall	10
2.4. The municipality of Narni (Italy) and the refurbishment of a kindergarten	10
2.5. Overview.....	11
3. Needs identification and assessment	12
4. Market engagement	12
4.1. Context	12
4.2. Practices and tools	14
5. The business case	15
6. PPI broker /external facilitator	15
7. Open market consultation.....	16
7.1. Benefits of the open market consultation	16
7.2. Organising an open market consultation.....	17
8. The tender procedure: a step by step approach	17
8.1. Choosing the tender procedure	17
8.2. The tender documentation	18
PPI Contract Notice.....	19
PPI Request for Tenders	19
PPI Procurement Contract/Agreement	19
The PPI Tender Form (optional document)	19
8.3. Conducting the procedure	19
The award criteria.....	19
8.4. Monitoring performance.....	20
9. Applicability of PPI in the MED countries	21
9.1. Croatia	21
9.2. Italy.....	21
9.3. Portugal	23
9.4. Spain	23

General framework.....	23
Financial support for the public purchase of innovation.....	24
Statistics.....	25
10. CONCLUSION	25
References.....	26

List of figures

Figure 1 : Formality of market engagement.....	14
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List of tables

Table 1: Public actors at local level (2018).....	5
Table 2: Energy consumption in French municipalities (% by sector) from 1995 to 2012.....	6
Table 3: Overview of municipalities and projects	11
Table 4 : Factors influencing choice of procedure	18
Table 5 : Current thresholds for tenders concerning works and services.....	18

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1. INTRODUCTION

Research on innovation procurement has benefited from a growing interest for the last 8 years (Obwegeser and Müller, 2018). Similarly, practitioners have shown a great interest on this issue. Several guidelines presenting different but complementary approaches were edited:

- some focus on market engagement (Watt, 2017);
- sectoral approaches (water, transport and health) have also been developed (WaterPiPP, 2015; TRANSFORM, 2015; RESAH, 2016);
- several present general guidelines and propose a step by step approach (European Commission, 2014; Semple, 2014; Clement et al., 2016; EAFIP, 2016). The EAFIP toolkit with three modules offers the most detailed and achieved guidelines in this field.

However, none of them focuses on the development of innovative technology systems and solutions in the field of energy efficiency for public buildings owned by small municipalities. Public Procurement of Innovation is one solution for small municipalities to address the challenge of climate change by purchasing products, services, and works with high environmental performance.

Small and Medium Sized Towns (SMSTs) / Small and Medium-Sized Urban Areas (SMUAs) are important players at the local level. According to ESPON (2013), in the EU “almost half of the urban population lives in larger cities (46.3%), while 24.2% in small and medium sized towns and 19% in very small towns (...) SMSTs have a population density between 300 and 1,500 inhabitants/km² and/or between 50,000 and 5,000 inhabitants”.

Table 1: Public actors at local level (2018)

Country	Local level	Intermediate level-	Regional level
Croatia	428 municipalities	128 towns	20 counties and 4 regions
France	35 228 municipalities	96 departments and 5 overseas departments	13 regions and 5 overseas regions
Italy	7 978 municipalities	107 provinces	20 regions
Portugal	308 municipalities (278 in mainland Portugal)	-	5 regions and 2 autonomous regions (overseas)
Spain	8 124 municipalities	50 provinces	17 autonomous communities and 2 autonomous cities

Within municipalities, buildings usually account for the largest share of energy consumption. No data is available at the European level on this issue. In France, municipal buildings represent approximately every year 75% of total energy consumption in municipalities from (table 2).

Municipalities in Europe probably face similar challenges. Moreover, in Europe the building industry accounts for the largest share of greenhouse gas emissions in terms of energy end usage. It represents

about 36% of Europe’s national emissions. Its share in the total energy consumption is also the highest with 40%. Thus, the introduction of innovative energy efficiency solutions in renovation projects appears as one of the best option to modernise these public infrastructures and to reduce energy consumption of municipalities.

Table 2: Energy consumption in French municipalities (% by sector) from 1995 to 2012

	1995	2000	2005	2012
Municipal buildings	75	74	75	77
Public lightings	17	18	18	17
Fuel for vehicle	8	8	7	6

Source: ADEME, 2014

To deal with this environmental challenge, various policies have been launched by European governments. Under the impulse of the European Union, new directives have been proposed to reduce energy consumption in buildings. On the demand side, regulation, the support of private demand and public procurement are seen as complementary policy tools (Edler and Georghiou, 2007). While regulation and demand subsidies have been used for many years to improve energy efficiency and stimulate energy renovation, public procurement still appears under-used.

According to Whyles (2018), *“an innovation procurement approach needs: a genuine unmet need and procurement opportunity; effective and early communication to the market; follow through into a pro-innovation procurement strategy, allowing innovation to compete on a level playing field.”*

Public procurement and the way procurement processes are shaped provide local authorities with significant opportunities to improve the energy efficiency of their aging infrastructure. By orienting their procurement strategies toward new solutions that improve the energy efficiency of buildings / public lighting, local and regional authorities can reduce CO₂ emissions and contribute to sustainable development. It is also a way to spend public money in an efficient and strategic manner since it could yield to significant savings (European Commission, 2017).

However, there are several barriers to innovation procurement within small municipalities:

- **Capability gap:** it is recognised that public authorities lack expertise and experience with complex purchases. There is frequently a gap between the capabilities held by public authorities and the skills required for procuring innovative solutions;
- **Price rather than quality:** there is frequently nobody at municipal level with sufficient knowledge to assess, propose and decide on actions in the energy field. Due to this lack of knowledge on energy issues, aspects such as delivery period and price becomes priority when awarding contracts for equipment or renovating public buildings. This fact is even stronger for small municipalities that suffers from a lack of financial and human resources to promote “the economically most advantageous tender”;
- **Excessive detailed specifications:** the disallowance of variants, the lack of openness to unsolicited ideas and over prescriptive specifications block the creativity of potential suppliers;

- **Weight of habits:** the risk aversion of public procurers goes along with conservative behaviour. Most procurers prefer to follow routines and to keep their habits instead of developing new approaches that are more risky but would lead to solutions offering better added value;
- **Reluctance and difficulty to hire external consultants:** small municipalities frequently lack capacities to launch PPI (the capability gap). The use of external expertise could be one solution to overcome this barrier. However, small municipalities seldom buy immaterial services. Similarly, private consultants prefer to work with large municipalities that have larger resources and their offers are seldom adapted to actors with limited resources.

The aim of these guidelines is to lessen these traditional barriers faced by local authorities and to help them in adopting innovation procurement practices. It will present the key steps to design and implement an innovation procurement process.

Four municipalities involved in PROMINENT-MED launched PPI for the renovation of their public building:

- The municipality of **Alzira** in Spain: the pilot project focuses on the refurbishment of an old (1891) orange storage building (“magatzem de cucó”);
- The municipality of **Koprivnica** in Croatia: the pilot project involves the energy efficient renovation of a prefabricated kindergarten building.
- The municipality of **Mértola**: the pilot project concerns the renovation of the city hall that also hosts the Roman part of Mértola’s museum.
- The municipality of **Narni** in Italy: the pilot case is applied for the refurbishment of a kindergarten hosting children from 6 to 36 months.

The objectives of this guidance which is addressed to public authorities and small municipalities, is to provide a comprehensive overview of the key steps to follow in order to implement an innovation procurement process.

The guidelines will not only be a step by step approach to innovation procurement, it will also outline the specificities of small public authorities and the peculiarities of the renovation projects. Three reasons explain this approach:

1. Several guidelines proposing a step by step approach have already been edited to help public procurers to prepare and implement PPI. In this field, it is better to avoid reinventing the wheel. After the publication of the EAFIP toolkit, there is obviously no need to publish a supplementary guidance covering the same issues;
2. There is a huge diversity of public procurers. Among them small municipalities face specific issues linked to their building asset. Moreover, among small municipalities some are members of association of municipalities and benefit from common services and external expertise delivered to the association. Thus, it is important for each case study to know more about the context and the history of the project and to dedicate a large place to the organisation and governance of public authorities. The aim is to help future decision makers and the professionals responsible for the execution of the procurement to find similarities between their own situation and the cases described in this guidelines.
3. Building renovation is also very specific. It is frequently said that every building is a prototype. Renovation is more complex since the project is constrained by the history and the local context.

This guidance will present the following steps in the public procurement of innovation process:

1. Needs identification and assessment;
2. Market engagement;
3. The business case
4. PPI broker / external facilitator
5. Open market consultation
6. The tender procedure: a step by step approach

And the applicability of PPI in Croatia, Spain, Italy and Portugal will be addressed.

However, before detailing the specificities of these steps, the situation of the four municipalities and the main characteristics of the pilot projects will be presented. The objective is to lead any decision maker to associate its situation to the issues exposed in the case studies.

2. The municipalities and the pilot projects in a nutshell

2.1. *The municipality of Alzira (Spain) and the refurbishment of an old (1891) orange storage building*

The municipality of Alzira has 44.488 (2016) inhabitants. It is a member of Consorci de la Ribera (CRIB) formed by la Ribera Alta and la Ribera Baixa which are associations of 47 municipalities gathering more than 300,000 inhabitants. Consorci de la Ribera is used to deal with joint procurement purchases such as electricity or natural gas for several municipalities.

341 civil servants work for the municipality which has an annual budget of 37.000.000 €. It owns 55 buildings (municipal offices and warehouses, primary schools, winter/summer pools, sports centers, a house of Culture...) covering an area of 110 km². The annual energy consumptions due to municipal buildings is 4.676.988 kWh (2016) and the budget dedicated to energy consumption per year is 612.723,00 € (2016).

The old orange storage building is located on a municipal property plot located in the neighborhood of "Caputxins" of Alzira. The existing construction dates from 1891 and has a constructed area of 992 m² in a single diaphanous plant. The main body of the building is formed by a single floor. The main volume has a height of 10.05 m, with a gabled roof recently rehabilitated by removing the fiber cement plates and replacing them with insulating and fire resistant panels.

The project led by city of Alzira was selected by Consorci de la Ribera because the municipality is well integrated in Red Innpulso network, a network of municipalities that are willing to promote local innovation policies through, among other commitments, public procurement of innovation.

2.2. *The municipality of Koprivnica (Croatia) and the renovation of a prefabricated kindergarten building.*

The city of Koprivnica has 60 584 (2011) inhabitants on 90 km². 66 civil servants work for the municipality which has an annual budget of 29 800 000 € (2018). It owns 46 public buildings amounting to 53 000 m².

The annual energy consumptions due to municipal buildings is 2 330 000 kWh and the budget dedicated to energy consumption per year is 270 000 €.

Koprivnica is setting new standards for the energy efficiency of its building stock. A new development policy adopted by the city in 2011 requires that all new public buildings be constructed to low-energy or passive building standards.

The kindergarten building *Loptica*¹ was selected as the subject of the energy retrofitting project (pilot project).

The kindergarten building was built in 1982. It is a prefabricated wooden ground floor building with solid foundation (75 % of gross area) and in 1995 it was expanded with masonry (walled) ground floor building annex with solid foundations (25 % of gross area). The building shape is elongated and along the southern part are terraces built.

Total construction gross building area equals to 950 m² (net area 820 m²). No major renovation activities took place on building's envelope or in the interior.

¹ Meaning "a ball" in Croatian language

The main reasons for selecting this building were that none of major renovation works were made, the building was energy inefficient and was approaching the lifetime end. It is also an opportunity to implement deep transformation of the kindergarten by including interior spaces improvement.

The test and success of the PPI will enable replicability on several other kindergartens in similar needs of energy performance. The pilot project aims at delivering replicable solutions for external and internal total transformation of the prefabricated kindergarten building. Research revealed that at least 25 similar buildings exist in Croatia and none of these buildings have gone through deep renovation process. It is reasonable to believe that all or part of the designed solution will be applicable not only to kindergarten buildings but also to similar ground level buildings or even smaller buildings (prefabricated or masonry one). There are substantial number of such buildings in Croatia and neighbouring countries.

2.3. The municipality of Mértola (Portugal) and the renovation of the city hall

The municipality of Mértola has 7274 inhabitants (2011) and 269 civil servants. It owns and is in charge of 94 public buildings amounting to a total estimate surface of 18 819m²². Mértola is a town with a very important past, therefore archaeology and heritage are very relevant.

The building is located at an altitude of 135 m and operates as a service building with work areas, meeting rooms and support areas. It presents an occupation of 8 hours daily for 5 days a week. The building has an area of 685.40m² and energy consumptions of 80.712,00 KWh/year, representing 31,5 tCO₂/year. The building has no air conditioning. The roof is inclined in tile however it has a zone in simple glass.

Besides centralizing all services provided to citizens, this building has a Roman museum in the basement. This museum was created in 2004 and it belongs to a group of geographically scattered museums, most of which are located in Mértola's historical centre. The Roman part of the Museum is installed under the Mértola City Hall.

There are people in the building all the time, city hall personnel and museum visitors

Within the PROMINENT MED project context, the building was subject to an energy audit and a study of energy efficiency measures to optimize overall energy performance, increase thermal comfort and promote a healthier indoor environment. In particular, the need for correction of constructive pathologies, reduction of energy needs, use of renewable energies and improving systems efficiency were analysed .

The selection of this specific building was due to the fact that the city hall building must comply with rigid rules regarding its historical heritage and in what regards energy efficiency some of the technologies cannot be implemented, so the intervention has to respond to the challenge of finding innovative solutions that can meet the historical heritage specific requirements.

2.4. The municipality of Narni (Italy) and the refurbishment of a kindergarten

The municipality of Narni has 19 148 inhabitants (2018) on 197 km².

The Kindergarten “Gianni Rodari” located in Narni hosts about 200 people (children, teachers and assistants). The building is all at ground floor (net floor area 1248.83 m²), built with a structure in

² Based on the municipality records. It must be considered that around 10 % of area data is missing.

reinforced concrete. The kindergarten operates 11 months per year and due to the limited thermal insulation the building cannot ensure adequate conditions for the hosted children (6-36 months). The kindergarten needs refurbishment to address the issues of thermal comfort but also acoustic insulation and seismic resilience.

2.5. Overview

The diversity of the municipalities and the renovation projects can be observed in figures below.

Table 3: overview of municipalities and projects

	Croatia	Italy	Portugal	Spain
Municipality	Koprivnica	Narni	Mértola	Alzira
Inhabitants	30 854 (2011)	19 148 (2018)	7 274 (2011)	44 488 (2016)
Size	90 km ²	197 km ²	nc	110 km ²
Staff	66	117	269	341
Public buildings	46	59	94	55
Public buildings (m ²)	53 000	98 000	18 819 ³	nc
Energy consumption (kWh/year)	2 300 000	1 303 745 ^c	16 365 000 ⁴	4 676 988
Total budget (M€)	37	49,7	18.7	29.8
Energy budget (€)	612 723	641 163	nc	270 000
Project				
Building type	Kindergarten	Kindergarten	City hall/museum	Storage, future youth center
Building size (m ²)	820	1 248	685	992
Building energy consumption (kWh/year)	nc	nc	80 712	nc

nc=not communicated

³ Based on the municipality records. It must be considered that around 10 % of area data is missing.

⁴ Based on Sustainable Energy Action Plan

3. Needs identification and assessment

The raison d'être of PPI is to improve the quality and efficiency of public services by finding solutions to unmet needs. Needs identification is strategic for procurers since it will constitute the base of the functional/performance-based specifications. It is the prerequisite of the call for tenders. Needs identification requires:

- a. To discuss with end-users who are best-placed to pinpoint the inefficiencies of the service/process that is delivered. Involving the end-user is important for the future implementation and acceptance of the innovation;
- b. To define needs without specifying a solution. The aim is to *“focus on describing the problem to be solved and defining clear outcomes that are required (functionality/performance/efficiency improvements) rather than prescribing technologically how the solution for the problem should be built”* (EAFIPb, 2016: 20);
- c. To identify end-users who are representative of a large market. Thus, it is relevant to involve end-users from similar organisations that face the same problems. *“This type of pooling of demand and sharing of needs also secures economies of scale that is key to maximize the potential of innovation procurement”* (EAFIPb, 2016: 16).

The definition of the needs in terms of functionalities opens the door to innovation while providing detailed specifications restrict the answer to a limited number of solutions.

4. Market engagement⁵

4.1. Context

Market engagement is a cornerstone of innovation procurement. According to the literature, successful procurers had a good understanding of the supply chain linked to the innovative product / service. This is a complex task since innovation involves new market players. Preliminary market consultation (PCP) is one way to gather information from the market with a view to later procurement. The European Directive 2014/24/EU on public procurement indicates that: *“Before launching a procurement procedure, contracting authorities may conduct market consultations with a view to preparing the procurement and informing economic operators of their procurement plans and requirements. For this purpose, contracting authorities may for example seek or accept advice from independent experts or authorities or from market participants. That advice may be used in the planning and conduct of the procurement procedure, provided that such advice does not have the effect of distorting competition and does not result in a violation of the principles of non-discrimination and transparency”* (Art. 40).

This phase takes place before the formal procurement procedure. The aim is not to evaluate potential suppliers but to *“assess the appetite, capacity, capability of the market to respond to the customer’s requirements”* (Transform, p.33, 2015).

“Understanding the perspective of suppliers is a key to effective market engagement. Innovation is not only risky for customers, it is risky for suppliers. Market engagement helps public authority to present a genuine, credible and convincing requirement to the market - if there is a need suppliers are ready to

⁵ JERA Consulting Ltd represented by Gaynor WHYLES was involved in the project as an external expert. It co-organised with CSTB a webinar on “Market engagement” on 22 February 2018. Large parts of this webinar were integrated in this guidance.

respond. The market engagement process needs to convince suppliers that this is something worth investing in” (Whyles, 20C18).

It is necessary to show suppliers that the public authority (the buyer) is credible. Credibility can be demonstrated through several ways (Whyles, 2018):

- The demand must be genuine;
- The organisation must be (demonstrably) committed;
- The market engagement process has to be professional and thoughtful;
- The public authority has to demonstrate suppliers that the market could be wider;
- The timeframes have to be realistic.

It is also important at this level to interact with potential supplier. Indeed, user-supplier interaction is a source of innovation. Frequent interactive relationships have proved to speed up the innovation process since frequent communications induces an understanding of reciprocal needs. It creates technical learning (Lundvall, 1993). Moreover, recurrent transactions favour communicative learning (the establishment of technical codes, tacit and specific to the partners) and social learning (creation of similar behavioural codes).

However, alerting the market and allowing suppliers to express an interest in bidding for the contract has to be done by respecting transparency and non-discrimination. It is important to inspire confidence by showing that the tendering process will allow innovative solutions to compete equally.

Public authorities are traditionally not good at communicating with the market since they fear to break the rules of fair competition. However the role of market engagement is not to distort the rules of the game but to break down barriers between customers and suppliers to the benefit of all concerned. *“Market engagement:*

- *Brings the supply-side perspectives to a procurement process*
- *Gives the supply chain advance information about forthcoming procurements (suppliers need time to innovate)*
- *Tests the reaction of the market to a proposed requirement*
- *Helps you to design an effective pro-innovation procurement approach*
- *Provides invaluable insights to potential suppliers – helps them to differentiate their offering on factors other than price” (Whyles, 2018).*

4.2. Practices and tools

Market engagement can be more or less formal (figure 1). There is a large spectrum of tools depending of the goals pursued by public authorities.

Figure 1 : Formality of market engagement



Source: Semple, 2015

The municipality of Koprivnica showed that it is possible to dialogue with the market by organising a market consultation workshop for potential suppliers. Moreover, a detailed market prospectus sounding has been published both in English and Croatian.

This market analysis usually takes 3 to 6 months (Watt, 2017). Larger contracts may require up to 12 months. Some public procurers may consider this process as time consuming. However, the process should be considered as an investment since it will result in a more suitable contract for all parties.

According to WHYLES (2018), *“a market engagement process might begin with market sounding: “Market sounding is the process of assessing the reaction of the market to a proposed requirement. Market sounding should begin at the earliest possible stage in the procurement process”.*

“A market sounding prospectus (MSP) can be a valuable tool for communication. It can be helpful to standardise responses from the market using a response form – this needs to be simple and user friendly.” Indeed, the aim is not asking for suppliers solutions but to get an overview of what the supply chain is capable of, the timeframes involved, the market conditions needed etc. Public authorities have to read the responses!

“A Prior Information Notice (PIN) is now an established mechanism to launch a market sounding or consultation. It is helpful in terms of coverage of suppliers and to show that the exercise is ‘official’. But relying only on a PIN is not enough. Proactive communication is vital.

Web pages are a helpful way to keep suppliers up to date and engaged, creates a paper trail and facilitates transparency to maintain a level playing field.

Market consultation workshops tend to be popular with suppliers. Organisers have to provide enough time for networking. For customers, this approach helps to:

- *Understand the range of views present in the supply chain and ID perceived barriers;*

- *Assess first-hand the appetite and mood of the market;*
- *Get advice on the procurement strategy” (Whyles, 2018).*

5. The business case

The Business Case presents the key strategic issues. It is a tool to support investment decisions during the life of the project. The aim is to focus on a broad range of issues relevant to the innovation procurement. It should establish that the PPI:

- will contribute to the development of a solution that meets the needs of the public authority;
- will enable the public authority to improve the quality of the services / products delivered to the users;
- is robustly valued, affordable and has been designed to an acceptable high-quality standard for the benefit of the public authority;
- can be delivered successfully within constraints of affordability, functional content, quality and time;
- will be sustainable and compliant with public authority policy and standards.

This analysis is supposed to justify that it is relevant to start innovation procurement. This approach is very similar to the Public Sector Comparator analysis. *“The purpose of the PSC is to provide governments with a quantitative measure of the value for money it can expect from accepting a private sector Proposal to deliver the output specification compared to public sector delivery”* (Australian Government, p.7, 2008).

This cost benefit analysis can be used at the different stages of the project:

- before the procurement, the aim is to prove that the innovation procurement is justified;
- during the project, the aim is to monitor the provider of the innovative solution and to keep the balance between costs and benefits;
- after the project, it is used to check whether the expected benefits have been achieved and to draw lessons for future procurements.

Establishing a business case is a key step to guarantee project approval. As described in the international working session held in Portugal in 2017, the business case is defined in five steps:

- 1) define the problem to be addressed
- 2) gather information to understand potential solutions
- 3) compare costs, benefits and risks
- 4) decide on the purchasing strategy
- 5) create the right conditions for competition

6. PPI broker /external facilitator

Innovation procurement in addition to its benefits entails risks and costs. Being non prescriptive while asking « what to buy ?» requires a cultural shift from all the professionals involved. It is often more complex for small municipalities which often lack knowledge of the procedures of PPI as they sometimes do not have a procurement department. To promote PPI and to bridge the skills gap small municipalities can ask for local technical assistance acting as a PPI broker.

The promotion of innovation brokers as facilitators of public procurement of innovations is a priority for the European Commission to spread PPI in Europe. Indeed, innovation is a driver for territories development across Europe. The brokers can act as a facilitator and an intermediary between public bodies and innovative SMEs which often do not work together.

Connecting with a facilitator to implement PPI seems necessary for small municipalities in the context of the energy performance of their building portfolio. However, the technical choices made and the administrative procedure followed remains the responsibility of the municipality: having a broker does not transfer the risk (European Commission, 2018).

7. Open market consultation

7.1. *Benefits of the open market consultation*

Open market consultation is a key step in the PPI process taking place after having launched a Prior Information Notice (PIN) on a dedicated platform. It consists in consulting potential suppliers during a specified period of time, giving them the opportunity to ask questions about the project, in this case, the building to be renovated. They can also present their innovation and see if it matches the express needs. It helps identifying the feasibility of the renovation project : if no supplier is interested in answering there is probably a problem of clarity in the definition of the (PIN).

In the case of the Prominent Med case studies PIN documents have been published by the municipalities for the market consultation phase. The standard European template is available for [download](#).

Link to the different Prior Information Notices

From Alzira in [Spanish](#)

From Koprivnica in [English and Croatian](#), English page 1-3, Croatian page 4-6

From Narni in [Italian](#)

From Mértola in [English](#)

Having an open market consultation helps prepare for the tender phase using proactive communication towards the market to raise the interest of innovative companies in responding. Meeting them and exchanging with them ahead of the tender enable to get familiar with their language and use it the same language as the potential suppliers,.

Open market consultation enables the procurer to check expectations regarding: (adapted from EAFIP, 2016 : 65):

- The prior analysis and regulatory environment ie confirming innovation potential and the use of PPI versus usual procurement methodology
- The desired minimum requirements for the innovative solutions – in line with the energy performance and retrofitting strategy of the municipalities
- The assumptions from the business case – it is the opportunity to check if the market is mature enough to deliver what is expected. Maybe the solution does not exist yet. On another topic, open market consultation is also a good opportunity to discuss about budget issues.
- The contractual conditions : interest of having the tender split into lots, confirmation of existing companies able to deliver solutions for the different lots.

7.2. Organising an open market consultation

The open market consultation is necessary and it should be organised with care. It is important to give enough time for suppliers to get familiar with the requests in order for them to be able to ask questions and have a dialogue with the procurer. The city of Koprivnica and Narni in this project gave a 2 months period for this phase.

To avoid problems at the tender phase, it is necessary to specify that all companies will be treated equally whether they participated in the open market consultation or not. As mentioned by EAFIP, 2016 : « the participation of a potential bidders in the open market consultation must not affect competition in any future tender procedure », EU rules of public procurement are very strict about it.

It is also necessary to identify the right media to promote the open market consultation and reach the relevant audience.

8. The tender procedure: a step by step approach

8.1. Choosing the tender procedure

The choice of the procedure for PPI strongly depends on the former analysis: needs identification, definition of specification, market and comparative analysis. Only three of the five procedures identified by the “Guidance for public authorities on PPI” (Semple, 2014) are relevant for PPI. As indicated earlier, the Preliminary market consultation (PCP) is relevant for the market analysis.

Innovation partnership and pre-commercial procurement are relevant when the public authority seek a solution that is not yet available on the market and requires R&D. When there is no need for R&D then both the competitive dialogue and the competitive procedure with negotiation are adapted. When the procurer is able to specify the end product / service, then the competitive procedure with negotiation is adapted (table 2). The competitive dialogue is adapted to complex projects “*because matters such as technical specifications and price levels can be defined during the dialogue rather than being predetermined*” (Hoezen et al, 2010: 1178).

In both cases, “*contracting authorities shall identify the subject-matter of the procurement by providing a description of their needs and the characteristics required of the supplies, works or services to be procured and specify the contract award criteria. They shall also indicate which elements of the description define the minimum requirements to be met by all tenders*” (European Parliament, art.29, 2014).

In these negotiated procedures, parties start to exchange during the procurement stage while in traditional public procurement, they start to know each other after the awarding of the contract. These discussions lead to a better understanding of a project.

These procedures are particularly adapted when public authorities favour *performance-based approaches*.

Even if competitive procedure with negotiation and competitive dialogue are recommended, open procedure is also possible. In the case of the PAPIRUS project, it was not even possible to use both of these approaches since the technical and organisational procurement needs and the pricing could be described at the beginning of the tender process. This was due to the extensive market research on the technological solutions that was made before the starting of the tender process (Wojtczak et al, 2016).

Table 4 : Factors influencing choice of procedure

Sufficient knowledge of the market to define requirements for end-solutions?			
Yes		No	
		Preliminary market consultation	
Need R&D services prior to procurement?			
Yes		No	
Do you wish to acquire innovative products or services on a commercial scale, as part of the same procedure?		Can a specification of the end products/services to be procured be developed?	
Yes	No	Yes	No
Innovation Partnership	Pre-commercial procurement	Competitive procedure with negotiation	Competitive dialogue
Levels of competition or time/ resources inadequate for above procedures? Consider joint procurement or, in exceptional cases only, derogation from the directives			

Source: Semple, 2014

Moreover, below European threshold (table 5), different procedures can be used for the award of certain works, supply and service contracts. National rules apply and may be simplified compared to EU-wide tenders if the general principles of EU law are respected. For small municipalities, open procedures or other national procedures may be more adapted since transaction and organisation costs linked to competitive procedure with negotiation and competitive dialogue are usually quite high.

Table 5 : Current thresholds for tenders concerning works and services

Contracting authorities	Activities	Threshold
Other public authorities than central government authorities	All works contracts	EUR 5,225,000
	Supplies and services contracts for water, energy, transport and postal services	EUR 418,000
	All supplies and services contracts	EUR 209,000

Source: http://europa.eu/youreurope/business/public-tenders/rules-procedures/index_en.htm

8.2. The tender documentation

When the procedure is selected, is it time to draft the tender documentation. Three documents are mandatory: PPI contract notice, PPI request for tenders and PPI procurement contract. An additional document is recommended by EAFIP: the PPI tender form.

PPI Contract Notice

There is a mandatory official European format describing the public procurer, the scope of the contract, estimated budget and time drame, conditions for suppliers to participate in the procedure. The official European template is available for [download](#).

PPI Request for Tenders

This document (also called Invitation to Tender/Tender Regulation) is the main tender document will all information about the procurer and the needs. It includes the technical specifications to which the suppliers must answer, as well as the administrative details: timelines, payment procedure, legal information. It specifies also the exclusion and selection criteria. In addition because PPI requires buying an innovative solution the request for tenders must mention whether testing of the solution is planned before or after the awarding process.

PPI Procurement Contract/Agreement

When the supplier has been chosen based on the different criteria, a procurement contract must be signed with the procurer. It contains all the legal aspects necessary to frame the project. There is no standard document at European level.

The PPI Tender Form (optional document)

The PPI tender form is a document helping the procurer facing multiple actions of PPI. EAFIP, 2016 in the module 2 for public procurers recommends to use such a form to compare tenders among themselves. It is a quality management tool where the procurer can standardise its process and the questions asked.

8.3. Conducting the procedure

After having gathered market insight thanks to the PIN and market consultation workshops or similar activities, the procedure starts with the publication of the PPI contract notice. This document will be published on national procurement platforms and also the European TED platform depending on the thresholds (see chapter 8.1) and depending on the potential interest from international bidders. Publication on TED will ensure that any country in Europe will be able to read at least the standardised fields of the contract notice which exist in many languages. After publication the applicants will express their interest. The selection of applicants is a crucial phase that is done following the criteria planned in advance.

The award criteria

The award of the contract to the final bidder is divided into two phases (Advocaten, 2015):

- a. The selection of the candidates with the relevant capacities;
- b. The selection of the tender.

The selection of the candidates aims at checking whether the potential candidates possess the minimum technical and professional competences to be qualified (e.g. experiences in the analysis / design / implementation of energy-saving measures). It can also concern the requirements regarding the financial and economical strengths. For new ventures that lack references and look for credibility, this second requirement may become a barrier.

The selection of the tender cannot be based anymore on “lowest price”. Award criteria have to promote the “economically most advantageous tender”. It is usually better to mix quantitative (e.g. maintenance costs, net present value of the energy cost savings during the contract – energy simulations may be used to judge the proposed solutions) and qualitative criteria (e.g. quality of the action plan, compatibility of the innovative solution with existing systems, ease of installation...). Each award criteria has to be weighted in order to get the select the approach that offers the best value over the lifespan of the contract.

This selection has to be done in respect with European rules concerning tenders. These rules ensure that the award of contracts for the provision of public goods and services must be fair, equitable, transparent and non-discriminatory.

A standard template for the contract award notice exists in Europe, it is available for [download](#).

Awarding contract – the Spanish procedure

Public Procurement of Innovation (PPI) is, principally, being embraced in Spain through the new public procurement Spanish Law on Public Sector Contracts (LCSP). Law 9/2017, going into force on March the 9th 2018, transposes into the Spanish legal framework the Directives of the European Parliament and of the Council 2014/23/EU and 2014/24/EU.

The mentioned recent Law establishes detailed and complex regulation on selecting and applying the criteria for awarding contracts. According to the LCSP, the criterion for awarding contracts is the “best price-quality ratio” replacing the previous the “most economically advantageous tender”. The best price-quality ratio will be assessed on the basis of economic and qualitative criteria. The contracting body may include social or environmental aspects related to the object of the contract among the qualitative criteria. Moreover, new LCSP introduces several new award procedures such as the innovation partnership procedure.

Traditional design and build contracts based on input specifications are more and more replaced by service-led contracts where the output to be delivered is specified (Hoezen and al., 2010). It also means that the scope of the contract goes further than design and build and encompasses operation and maintenance. Under this scheme a comprehensive performance measurement system containing key performance indicators often becomes the backbone of operational management.

Integrated solutions are not dominant in construction which is frequently characterised by the separation between design, construction and operation activities. However the development of new procurement process such as Public Private Partnerships (PPP) has contributed to the development of such solutions. Under this scheme, design, build, finance and operation are transferred to private sector partners. It is a way to deliver integrated solutions to public authorities. Fees are paid by the public authority to cover finance, construction and operating costs. Payments are made according to the quality of the service delivery which is judged on performance indicators. For public clients, the rationale of these projects is to deliver a enhanced service to its customers.

8.4. Monitoring performance

Monitoring performance of the supplier is recommended during the process because public procurer are responsible for how they spend the citizens' tax money. It means checking the quality of both the technical aspects and the administrative aspects described in the contract notice.

In the cases of the energy renovation of public buildings by small municipalities, specific key performance indicators and milestones should be developed such as onsite visits to ensure high-quality contract monitoring process and at the end the success of the investment.

9. Applicability of PPI in the MED countries

PPI is not very common in the MED countries. Making PPI applicable depends on legal frameworks that exist in the four countries which have pilot studies : Croatia, Spain, Italy and Portugal. Generally in Europe, initiatives are raising to promote PPI and build capacity on this topic. There is a Horizon2020 project worth mentioning: Procure2Innovate⁶ aiming at establishing or expanding competence centres for innovation procurement in ten EU Member States including Spain, Italy and Portugal which are in the scope of Prominent MED.

The four following chapters are reproducing and adapting part of the content that was gathered for a previous Prominent MED report, namely deliverable 3.2.1 Benchmark of demand driven innovation report, chapter 8 MED PPI deployment in MED countries.

9.1. Croatia

The European directive 2014/24/EU on public procurement has been transposed and included in national law as of 1 January 2017. This completely updated and renovated the Public Procurement Act.

Currently there is no national action plan or strategy for PPI deployment but the development of such plan or similar boosters is underway. One example is the Croatian agency for SME's, Innovation and Investments (HAMAG-BICRO) which launched in 2016 a project called PPI2Innovate (Capacity building to boost usage of PPI in Central Europe). The project should result with the following outputs:

- 3 thematic PPI2Innovate tools (Smart Health, Smart Energy and Smart ICT) fully customized to national institutional framework;
- Action plan for operation of future Competence Centre covering the national level in Croatia, in order to encourage procurers to include considerations on innovation into their regular procurement activity.

These actions should launch PPI which is not developed yet. Only few incentives exist to buy innovative solutions from new companies rather than buying existing established products from long-standing suppliers. Public authorities lack awareness, knowledge, experience and capabilities related to new technologies and market developments. Procurement is often treated as a purely financial and administrative task, irrespective of broader policy objectives. Moreover, public procurement markets are fragmented, making it more difficult to reach a critical mass and limiting opportunities for fostering more standardised and interoperable solutions.

The Croatian experience with competitive dialogue is also limited. Only one case has been recorded in the country. The procurement concerned the investment in supercomputer for the University of Rijeka. The value was 5.87 million euros.

9.2. Italy

The European Directive 2014/24/EU was implemented after the publication of the Legislative Decree 50/2016.

The new Public Contracts Code provides several opportunities for collaboration between public authorities and companies wishing to innovate. However, both actors need to change their way of working and acquire new expertise. The introduction of the new code also led to uncertainty. In the 6

⁶ https://cordis.europa.eu/project/rcn/213117_en.html

months following the publication of the Code, Italy's calls for digital services decreased by 30% compared to the same period the previous year.

Innovative purchasing tools which were conceived to guarantee performance and to rationalize public procurement also facilitate the relation between procurers and suppliers. For example, in the MePA (Electronic Market of Public Administration), innovative SMEs have the opportunity to show cases while PAs have a better understanding of the reality.

Compared with other countries, there is growing involvement of public research (universities and other public research institutions) in innovation procurement. This was a positive impact of the crisis in industrial fabric. It led economic operators to partner with universities to be qualified in terms of research.

Before 2016, pre-commercial procurement was more frequently used than PPI. The competitive dialogue was only available for “particularly complex” projects (article 58 of the former Code). The poor ease of application compared to more classic and known procedures, strongly discouraged public authorities from resorting to it. Between 2012 and 2015, only 44 competitive dialogue notices were issued: a ratio of 1:20 compared to the United Kingdom (Molinari, 2016).

In transposing the aforementioned European Procurement Directive, the Italian legislature has separated the “old” competitive dialogue into two areas: a) competitive procedure with negotiation; b) “new” competitive dialogue and preferred not to make it compulsory in certain cases as in other European countries.

An analysis made after 2016 and based on data extracted from the OpenTED database (Tender Electronic Daily) indicated that from May 2016 to May 2017:

- 17 tenders with competitive dialogue were directly activated by municipalities or public companies often linked to them. They mainly concerned the acquisition of supplies;
- 24 tenders with competitive procedure with negotiation, mainly concerning services, were activated.

The TED-register includes data on awarded procurement contracts from publicly owned entities such as EU agencies, governments, provinces, municipalities and publicly owned utility companies.

TED publishes all public procurement made in member states

Similar statistical data on the implementation of PPI was not available because the entry into force of Legislative Decree 50/2016 was too recent.

Due to the relatively low level of development of the Italian market for Energy performance contracting, there is a high potential for PPI and public authorities could act as facilitator and contribute to the development of the market. In this field, joint procurement is advisable since most ESCOs require a threshold of €200.000-300.000 per year to invest in a new project. However, barriers exist: Certain ESCOs do not consider public authorities as trusted clients because of late payment (in some cases 180-240 days). Moreover, in smaller municipalities, there is a lack of relevant technical and legal knowledge in order to develop and implement complex tenders. Many local authorities also do not track their energy consumption, which is a major barrier for estimating energy savings potential, and to apply a monitoring and verification protocol.

There is also a huge market for retrofitting schools since 44,486 public schools, out of a total of 50,804 were not designed according to the latest (and effective) anti-seismic criteria (2,700 of them are in areas with high seismic risk).

9.3. Portugal

In view of the new European Public Procurement Directives, adopted in 2014, the revision of the national legal framework became necessary. In this regard, the Portuguese Government has submitted a public consultation for the draft law to introduce the changes to the Portuguese Public Procurement Code. An amendment was included in 2018 and now mentions the creation of a new procedure for the acquisition of innovative products or services - partnership for innovation.

Article 30-A of the Preliminary Draft Amendment of the Public Contracts Code indicates that "*the Contracting authority may adopt the innovation partnership when it intends to carry out research activities and the development of innovative goods, services or works, irrespective of their nature and areas of activity, with a view to their subsequent acquisition, provided that they correspond to the Levels of performance and price agreed upon between it and the partners in the partnership.*"

Since PPI is still in its infancy, its promotion is foreseen.

9.4. Spain

General framework

On October 28, 2011, the Administrative Procurement Advisory Board (JCCA) of the Ministry of Economy and Finance reported favourably "*The Innovative Public Procurement Guide*" to public administrations and other public sector agencies. This guide aimed at improving procurement procedures, encouraging the participation of companies in innovative public procurement bids and enhancing the development of innovative markets. In December 2015, a new guide that integrates the legislative evolution and the accumulated experience, was released by the Ministry of Economy, Industry and Competitiveness⁷. It incorporates novelties and distinguishes the Public Procurement of Innovative Technology (CPTI) and Pre-commercial Public Procurement (PPC).

This PPI Guide states the following conclusions:

- The public procurement of innovation is a strategy that should enable a change of the productive model over non-speculative criteria that values knowledge and its transference. The provision of services is improved and more efficient.
- The option of public procurement of innovation, due to its complexity, requires the professionalization of managers, with interdisciplinary teams, as well as adequate training. The establishment of specific knowledge centres in this area and collaboration to develop strategies should be encouraged.
- Innovative public procurement is a tool for consolidating an institutional architecture of SMEs dedicated to innovation. The association for innovation is a commitment to "fix" a dynamic SME model. It can provide solutions that, with innovation, consolidate productive fabric in conditions of quality.
- Innovative public procurement should allow the international diffusion of Spanish technology to be consolidated (R & D, i business projects, new innovative products and services commercialised globally).

⁷ Guide 2.0 for the public purchase of innovation
http://www.idi.mineco.gob.es/stfls/MICINN/Innovacion/FICHEROS/Guia_2_0_CPI_V5_Borrador_web.pdf

- Innovation cannot be used to obstruct, restrict or distort competition or to grant aid contrary to Law.

Moreover, to facilitate SME access to public procurement by better transparency and to offer adjudicators better value for money, **several measures** were taken:

- **Publicity:** publication of pre-announcements and search tools specializing in public procurement to facilitate access to information for SMEs;
- Implementation of training programs to improve the competitiveness of innovative SMEs;
- Creation of public demand forums with the aim of promoting more fluid communication between contracting entities and innovative SMEs;
- Disaggregation of large contracts into different packages or lots;
- Support of cooperation between innovative SMEs and large enterprises and subcontracting in innovative bidding procedures.

Another strategy is the aggregation of the demand through the promotion of **joint procurement**. The aim is to aggregate several public purchasers who may be located in scattered geographical areas (local, regional, state, and even international market) but have similar market profiles. By enlarging the size of the market and reducing the uncertainty, it stimulates the participation of innovative firms to PPI. Moreover, the union of resources and experiences by different contracting entities reduces the risk.

Financial support for the public purchase of innovation

At the national level, two funding and support programs, named INNODEMANDA for the offer-driven side and INNOCOMPRA for the demand-driven side, were developed.

The **INNODEMANDA program finances the R&D activities of companies associated with a public tender**. On the website of the Ministry of Economy, Industry and Competitiveness, the requirements and procedures for accessing the Funds of Promotion of the Innovation from the Demand (FID Funds) are regulated. The objectives of this program are to promote the collaboration between public and private entities for the development and the acquisition of innovative solutions that contribute to:

- Improve public services, in terms of efficiency or effectiveness;
- Improve innovation and business competitiveness by attracting funds for business R&D through recruitment;
- Reinforce the marketing of innovation by using the public client as a launcher or referral client.

This program is managed by the Center of Technological and Industrial Development (CDTI). According to this program, **companies can finance the cost of technological innovation required in a public tender. The aim for the contracting entity is to have more competitive offers and to facilitate a greater presence of innovative products and services in the Administration**. The contracting entity and the CDTI must formalize the so-called Accession Protocol, which will specify, among other things, the most significant milestones foreseen in the tender, as well as the terms of action, conditions and regulations applicable to financing the activities of R&D by CDTI. Subsequently, in the tender documentation, the contracting authority must indicate that the R&D activities associated with the procurement may be financed by a financing entity, such as CDTI. CDTI will evaluate the proposal through an accelerated procedure authorized for this purpose and will agree, where appropriate, to grant the corresponding aid, in accordance with its internal procedures and rules. The decision of CDTI

will be communicated to the companies before the end of the deadline for submitting tenders to the tender. Subsequently, tenderers will submit their bids to the contracting authority.

In the case of the financing of innovative activity, tenderers must be aware that the various financing mechanisms cannot in any case involve preferential treatment of certain tenderers against others, contrary to the principles of equal treatment and nondiscrimination.

Two networks, the Red INNPULSO and the Public Procurement Observatory, are carrying out a considerable effort in promoting and monitoring PPI.

Statistics

Public construction is one of the fundamental pillars of the Spanish construction sector.

When looking at procurement in public construction, open procedures dominate restricted, negotiated or smaller procedures. According to Fuentes-Bargues et al. (2015), it represents 94% of the procedures used by public authorities while the share of negotiated and restricted procedures is only 6%, (and competitive dialogue does not even appear).

If the analysis of the sample is done according to the type of work, in civil works 96% are processed as open procedure and 4% as negotiated with advertising, while in building 92% is processed as an open procedure, 4% as restricted. Negotiated procedures and negotiated with advertising have a weight of 2% respectively.

According to Fuentes-Bargues et al. (2015), “competition” dominates public procurement since it concerns 93% of the projects. Percentages are respectively 89% and 96% for civil works and building.

10. CONCLUSION

The aim of this guidance is to provide small municipalities with insight on how to proceed with innovation procurement for the energy renovation of their buildings. The various legal contexts of Croatia, Spain, Italy and Portugal show that PPI is at very early stages in the four countries. However efforts are currently being made in order to promote and raise awareness of PPI towards both suppliers and procurers.

While this report is quite theoretical the four case studies in Croatia, Spain, Italy and Portugal are extensively studied in a next document. It gives real examples of how PPI can be done along the whole life of the process, including the difficulties encountered and the main costs and time frames necessary.

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