

Innovative public procurement guide

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The Open Digitisation Programme from Barcelona City Council's Office for Technology and Digital Innovation

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1. INNOVATING THROUGH PROCUREMENTS AT BARCELONA CITY COUNCIL	4
Background	4
What is public procurement for innovation (PPI)?	5
Public procurement with strategic vision	6
What role will Barcelona play?	7
Can we promote innovation in regular procurements?	8
Who is this guide for?	9
2. THE STRATEGY OF PROCUREMENT FOR INNOVATION	10
The strategy of procurement for innovation at Barcelona City Council	10
The keys to success	13
3. HOW TO MAKE THIS A REALITY. PRINCIPLES AND PROCEDURES	14
Where do we start?	14
PILLAR I: Detect needs	15
Start early and decide if PPI is suitable	15
PILLAR II: Involve different players	16
Market consultation	16
Assessment of sustainability and innovation in the results of the market consultation	16
PILLAR III: Begin the procurement process	17
Choosing the procedure: factors to consider	17
Consider and learn to manage risks	18
Intellectual property rights	18
Funding	19
Joint procurement processes	19
Drafting specifications. Measures for innovation	19
PILLAR IV: monitor and assess	20
Contract execution	20
Contract efficiency	20
Scaling the solution	20

4. CASE STUDIES 21

- The international European SPEA project 21
- The city of Ghent: cleaning services 22
- The city of Detmold: concrete to reduce air pollution 24
- Generalitat [regional government] of Catalonia: sustainable paved surfaces 26

5. PROCEDURES 27

- Regular procedures driving procurement for innovation 27
- European directives 28
- Other 29

Innovating through procurements at Barcelona City Council

Background

Europe (Directive 2014/24/EU) is promoting strategic public procurement which ties together the concept of efficiency in public expenditure and the promotion of the common European social objectives established in the "European Commission communication Europe 2020, *A strategy for smart, sustainable and inclusive growth.*"

Along these lines, last April, Barcelona City Council passed a Mayoral Decree on **sustainable public procurement** (S1/D/2017-1271, 24 April), which states that "Barcelona City Council promotes sustainable public procurement which includes social, environmental, ethical and innovation measures in the cause and purpose of the municipal contract and which guarantees the labour, social, and citizen's rights of the people who execute the public contract and of the recipients or users of said contract. Furthermore, said procurement should promote a local circular and sustainable economy, as well as foster the economic activity of local small, medium and micro- enterprises and, particularly, social enterprises".

This decree also approved the social public procurement and environmental public procurement guides which have been the guidelines for sustainable public procurement at Barcelona City Council.

This **innovative public procurement** guide aims to complement the guidelines which have already been approved, and add innovation in connection to economic, social and environmental sustainability as a multiplying element which helps create employment and economic growth, strengthens social and environmental values, while also supporting innovative companies that solve citizens' challenges.

This guide has been debated internally within city government and subsequently with citizen entities that represent economic, social and resident interests as part of the "Public Procurement Forum" established by Mayoral Resolution of 21 October 2016 as a space for citizen dialogue regarding public procurement.

What is public procurement for innovation (PPI)?

Public procurement for innovation is a new way of contracting services and negotiating with the market in order to respond to needs that cannot be solved through ordinary processes.

It is using public money to buy what we need, while trying to spend that money strategically so as to reach our goals of improving and satisfying citizens' needs, and strengthening innovation and sustainability.

This new approach to public procurement is designed to be a fundamental tool for the City Council to obtain solutions that are much better adapted to the real demands of society and to help companies be more competitive. We hope to stimulate the creation of new local markets, new products, new production methods and new ways to organise or provide services.

How are we going to do that? In practice, PPI begins with an open definition of the challenges and needs to be addressed, and offers the market the opportunity to explain how the problem can be solved, whether with existing solutions or not. These solutions must offer good value for money and consider the

life cycle to calculate and determine costs. This practice positions the City Council with a role beyond that of purchaser to become a partner in solving the challenge identified.

We must shift from public procurements with very detailed technical specifications and which are often awarded to the lowest bidder, to procurements that are based on the definition of challenges and innovative, sustainable solutions; this will often involve multiple players. This new approach allows us to identify new ideas and innovative solutions that deliver efficiency. A simple example would be to buy light instead of lampposts, or to buy hours of writing instead of pens.

Thus, the City Council is positioning itself as a driver of innovation in the market and a testing ground for its procurements by acquiring the results of research instead of subsidising pilot trials which often have difficulty scaling their impact.

Other key elements of PPI are risk, cost efficiency, collaboration between entities, and ensuring that benefits are shared.

Main benefits of PPI:

FOR CITIZENS

Improves public services by including innovative goods or services that better and more efficiently serve the needs of all city residents.

FOR INDUSTRY

Supports innovative companies and SMEs that promote the City Council's values on social, environmental and technological matters, driving development and internationalisation, as they build off of access to the local public market as their first flagship customer.

PER L'ADMINISTRACIÓ

Promotes a cultural change within the Administration, shifting it towards more innovative practices and attaining economic and technical efficiency.

Public procurement with strategic vision

The Europe 2020 strategy for smart, sustainable and inclusive growth promotes an economy based on knowledge and innovation, with a more effective use of resources, that is more competitive, with a high level of employment, and which supports social and territorial cohesion. Directive 2014/24 indicates in its Second Recital that public procurement plays a key role in the Europe 2020 strategy.

PPI aims to close the gap between social and citizen needs, administrative processes and the market.

Until now, governments have subsidised industry and research in order to develop new technologies and their applications. However, these projects often do not advance beyond the pilot phase and lead to disillusionment in the industry, which loses confidence in the public sector as a driver of innovation.

Under the European initiative Horizon 2020 initiative, funds have been made available so that the public and private sectors can reach sustainable growth and innovation goals. In the 2014- 2020 period, the EU is planning to invest 70.2 billion euros.

This is because government expenditure represent 20% of European GDP, making them an important economic agent with a great capacity to influence the market.

In fact, the European Union is actively promoting public procurement for innovation (PPI) as a public policy instrument. In addition to offering funds to finance it, the EU has established new procedures that support innovation and encourage purchasing sectors to work differently, with a more strategic vision.

This new approach to public procurement aims to bring innovation closer to the market, and turn the public sector into a customer and beneficiary of sustainable and innovative solutions that are more suited to its needs.

However this is not just a theory; there are good examples in sectors such as infrastructure and health where we are starting to see the objective results of applying this new procurement method, in which the public sector's capacity for demand is the essential instrument for developing new markets and satisfying increasingly demanding and complex social needs.

What role will Barcelona play?

In 2014 Barcelona was named the European Capital of Innovation. That same year, the European Union passed the new public procurement Directives. Europe is asking us to purchase innovative solutions to solve challenges that wouldn't have an effective solution to our social and environmental issues in the 21st century without cutting edge technologies and research.

to help solve the city's challenges with new solutions. This requires new skills for the people in charge of managing the public budget, new skills for technical municipal personnel, new legal procurement mechanisms and new, more agile methodologies in developing solutions for citizens. It also requires new ways of explaining the challenges of the city and its citizens to the market and residents, thus faci-

Research and innovation, including ecological and social innovation, are among the main drivers of future growth and are a central part of the Europe 2020 strategy

However, the European Commission's vision of innovation is a linear process that starts with an idea, moves through different stages of maturity supported by technological centres, until finally reaching the market.

Other voices are bringing a broader vision to Europe, noting that the new approach to public procurement with strategic vision from the administrations generates innovation in and of itself. Innovation is not necessarily the end result of a research project that starts with an idea, but rather can arise in a broader sense from all the players who, attracted by the opportunity to solve the challenges posed by the Administration (also called sophisticated demand), generate innovation. Society as a whole creates innovation in the process of looking for solutions to the challenges posed. Barcelona sees innovation as an end in itself and, at the same time, as a way to develop more social and environmental solutions.

The City Council would like to take advantage of its knowledge and that of the market so as

litating shared, collaborative research and development for solutions.

Innovation must be used to serve the people and the common good. The public sector becomes a promoter of innovative enterprise, innovating itself in terms of how it relates with the market and its procurement procedures.

The importance of price, which until now has been dominant, must become secondary. Through planning, communication in the market of future invitations to tender, events, and dialogue with the market, new formulas must be designed that reward investment in Research, Development and Innovation by SMEs when that investment is aimed at creating growth and employment, or at protecting our social and environmental values. Thus, we will ensure the market has confidence in a City Council that generates value and is a buyer, creating a local critical mass in the public and private sector that learns to purchase, sell and, above all, collaborate in a different way, promoting innovative solutions for the common good.

Barcelona is committed to innovation in the broader sense, and has decided to use its procurement potential to stimulate innovation that is aimed at solving the challenges of life in the city and to extend the impact of its social and environmental policies.

Can we promote innovation in regular procurements?

The answer is yes, by including the option for variations and measures that encourage innovation in contracts and by modifying the procurement process (planning, prior consultations, etc.).

Barcelona proposes a broad definition of promoting innovation in its strategy.

It sees public procurement for innovation (PPI) as public procurement which makes use of the innovative solutions (products, technologies, processes) that arise from the procurement process to promote a greater impact on sustainable and inclusive growth in society.

Barcelona also encourages the inclusion of innovation in its regular procurements, with the same goals.

We already have experience

The BCN Open Challenge meant that, for the first time, the City Council itself became the customer and purchaser of innovative solutions, closing the circle of “urban labs” and combining funding and the level of commitment of public procurement in the programme to solve challenges. However, the BCN Open Challenge was also established with the desire to reach any individual, professional, company, or group that had an applicable innovative idea, regardless of their nature or experience, thereby ensuring opportunities for everyone with a capacity to innovate.

For this reason, the nature of the companies chosen was very diverse. This is a particular point of pride for us, as the winners included both already-formed small and medium enterprises as well as start-ups created expressly to participate in this call for proposals, a temporary joint venture, and even a technological centre, which demonstrates the capacity of this programme to promote new, innovative business forms and collaboration among businesses..

<http://www.barcelonactiva.cat/barcelonactiva/es/novedades-y-prensa/novetats/2014/05/09/noticia112879.jsp>

Who is this guide for?

This guide is:

For everyone who works at Barcelona City Council, heads of areas and municipal bodies, individuals responsible for public procurement and technical municipal personnel.

For the private sector, companies and entities that supply or provide services to the City Council, whether now or in the future.

For citizens, as transparency in all strategic public procurement and innovation will be the common theme to all of our initiatives.

The guide invites all those who read it to view innovation as an essential element that is inseparable from and strengthens sustainable procurement, as is set out in the Mayoral Decree on sustainable public procurement (S1/D/2017-1271 of 24 April). Article one of this Decree establishes the desire to boost social, environ-

mental and innovation measures. The decree establishes a guarantee for the labour, social, and citizen's rights of the people who execute the public contract and of the recipients of said contract, and boosts actions for a circular economy and improving the economic activity of small and medium enterprises.

Article 6. Innovation

6.1. Article 2.1.22 of Directive 24/2014 on public procurement defines innovation as “the implementation of a new or significantly improved product, service or process, including but not limited to production, building or construction processes, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations inter alia with the purpose of helping to solve societal challenges or to support the Europe 2020 strategy for smart, sustainable and inclusive growth...”.

6.2. Barcelona City Council will drive public procurement processes for innovation with the aim of promoting research and the development of ideas and new technologies that will assist its work for citizens when said ideas and technologies are not available in the market.

6.3. In general, when procuring works, goods and services, measures to strengthen innovation will be included through the establishment of functional technical specifications, award criteria that promote improvements articulated as innovation proposals or any other measure which promotes innovation related to developing economic, social and environmental sustainability.

Mayoral Decree on sustainable public procurement (S1/D/2017-1271 of 24 April)

The strategy of procurement for innovation

The strategy of procurement for innovation at Barcelona City Council

The City Council would like to advantage of the benefits of procurement for innovation and has established a strategy for implementing a series of actions to ensure that its procurement processes promote innovation, so as to guarantee and increase the well-being of city residents.

If we want to promote sustainable and inclusive growth in Barcelona, we have to learn to use all of the potential offered to us by regulations, keeping in mind that there will be changes made shortly, especially changes with regard to PPI included in directive 2014/24.

Therefore, we are facing a paradigm shift and a change in organisational culture with regard to procurements. The doors are opening to new procurement methods with clear advantages, which we would like to incorporate as soon as possible.

The City Council has approved **regulations** such as the decree on sustainable public procurement (S1/D/2017-1271 24/04) and its implementing guides so as to boost social, ethical, environmental and innovation measures. This is a clear shift towards this new vision of procurement.

The importance of market consultation

The city of Detmold wanted to renovate its central bus station. It identified the potential to reduce pollution by using photocatalytic concrete thanks to information obtained from market consultation: the technical specifications stated that the concrete must have between 3% and 5% TiO₂ in order to achieve an annual reduction in the emissions of nitric oxide, instead of a detailed list of materials.

Other actions that the City Council plans to carry out include:

Planning tenders. Planning procurements. It should be kept in mind that PPI is a new instrument for reaching our city's goals. Therefore, PPI must be used in cases where the solution we need doesn't exist (or not on a large scale) and when we have a significant procurement budget to be applied in the me-

dium or long term that guarantees the scalability of solutions. We will have to examine on a case-by-case basis which areas should get involved in PPI and which is best positioned in the organisation to lead the process.

This new model for contractual relations allows us to promote broader and more dynamic procurement and contract execution procedures, enabling us to even consider

joint and aggregate demand procurement and execution processes with other administrations. We will have to analyse case by case whether the needs detected are ideally suited to a joint PPI, and whether it makes sense to establish a framework agreement so that other administrations can use the final results.

Networking

- Multidisciplinary teams.
- Networking with the industry and universities.
- Partnership and experience sharing networks.
- Training for educators.

Determining the City Council areas most suited to launching a PPI. The idea is to start to work with procurement in the areas that will have the greatest impact or which are suited to including innovation, and then share the lessons learned with other areas and standardise the use of PPI. Some prioritised areas include ICT, circular economy and health.

Selecting priority areas

- Framework contracts
- Calculation of performance
- Technology as an ally
- New funding mechanisms
- Consulting at all phases

Dialogue with the market and business. The current legal framework establishes the possibility to initiate a dialogue between the entities awarding contracts and the market prior to beginning the procurement process. The purpose is to understand and research the solutions offered by the market to cover the needs that are the subject of the contract before publishing the definitive specifications. This allows for a better and more in-depth understanding of the Administration's needs,

the promotion and inclusion of the latest innovations on the market, and greater collaboration among the parties.

Strategic management in the medium and long

- Different procurement strategies
- Specialised teams
- Life-cycle cost analysis
- Risk management
- Assessment of results
- Quality control
- Intellectual property rights

Including innovation measures in each contract. The logic behind this idea is that innovation is not something static or something that can be summoned on schedule. Therefore, the City Council is committed to focusing on innovation in its contracts, to carrying out market consultations, and to increasing dialogue with industry. It aims to encourage researchers and companies to reflect on the city's challenges, the well-being of people, to develop innovative even to consider centralised procurements before the process has been launched.

Technology as an ally. The evolution of ICT and the generalised use of the Internet are transforming practically all sectors of society and our economy. Information and data have become one of the most valuable and prized goods, and they comprise what is called the *knowledge economy or digital economy*.

Cities like Barcelona, with initiatives like the Barcelona Digital City 2017-2020 Plan, are confronting the need to transform their ways of doing business and to look for new strategies based on technology and innovation which enable us to take advantage of the drive and development of this new economy, and which, at the same time, will provide great social benefits and more equitable and sustainable economic growth.

The measures that must be followed and which will drive the new model of sustainable procu-

rement will be organised into areas of action, such as ethics in data or technological sovereignty based on free software, open data and agile methodologies, which will be explained in detail in the City Council's forthcoming guide on technology procurement that is currently being drafted.

Establish financing funds. The City Council has several funds to finance its PPI projects. One of the most significant is the ordinary procurements budget itself, which, by adding measures for innovation, becomes one of the most important driving forces.

The City Council also has structural funds (ERDF) available to support this process, and it is hoping to apply them to support ICT, the circular economy and health.

There is also funding available through tender processes offered by the EU, the World Bank and others available for SMEs. Different international organisations are facilitating consulting and financial support, and are organising events and prizes to help contracting authorities develop PPI openly and in a non-discriminatory fashion, thereby facilitating access to small and medium enterprises.

Facilitate education and knowledge. Each public procurements team will need to identify which tenders are suitable for the PPI process and which, therefore, will require new techniques and knowledge to detect innovation. This innovation can be found in different ways: by adding new technologies to our acquisitions, requesting goods that are the combination of a product and a service, or by introducing new ways of manufacturing an old product. In short, new skills will be needed on these teams to guide these new procurement processes.

Periodically select model initiatives and outreach. There is a delicate balance between the responsibility of ensuring that the market knows exactly what the public requirements of a tender process are, and at the same time leaving enough space for new and different approaches to responding to these requirements. The City Council will work with initiatives that it thinks could serve as an example, with functional technical requirements based on performance, or which permit variation, two interesting ways of allowing for a certain amount of flexibility for bidding companies when they propose solutions.



The keys to success

Based on the benchmark study carried out across Europe by the City Council, we have concluded that PPI should ideally be accompanied by plan-

ning and organisation measures that facilitate its successful implementation. These recommendations can be summed up by the four 'M's:

The keys to success: the four 'M's

A **political mandate** at the highest level, with long-term planning of procurements with professional, stable teams.

Mentality: Training for teams, open, flexible dialogue with the market, a favourable culture that is promoted across all areas.

Means and professional human resources, experts in risk management who have experience in assessing projects, training, and a method for communicating best practices.

Measurement. Mandatory, quantifiable objectives that are binding and monitored.

How to make this a reality. Principles and procedures

Where do we start?

Public procurement for innovation is not a new procurement procedure, but rather a way of carrying out procurements in a collaborative way so as to respond to needs that do not currently have a solution on the market.

This way of carrying out procurement with a strategic vision leads us to more conscientious planning of our procurement activity. It's a new culture. We have to think with a holistic view of the entire process, from the detection of the need, market consultation and administrative preparation, to execution. However, we must also follow-up and assess the results. We must verify to what extent we were able to satisfy our needs, and we can scale solutions as we had planned.

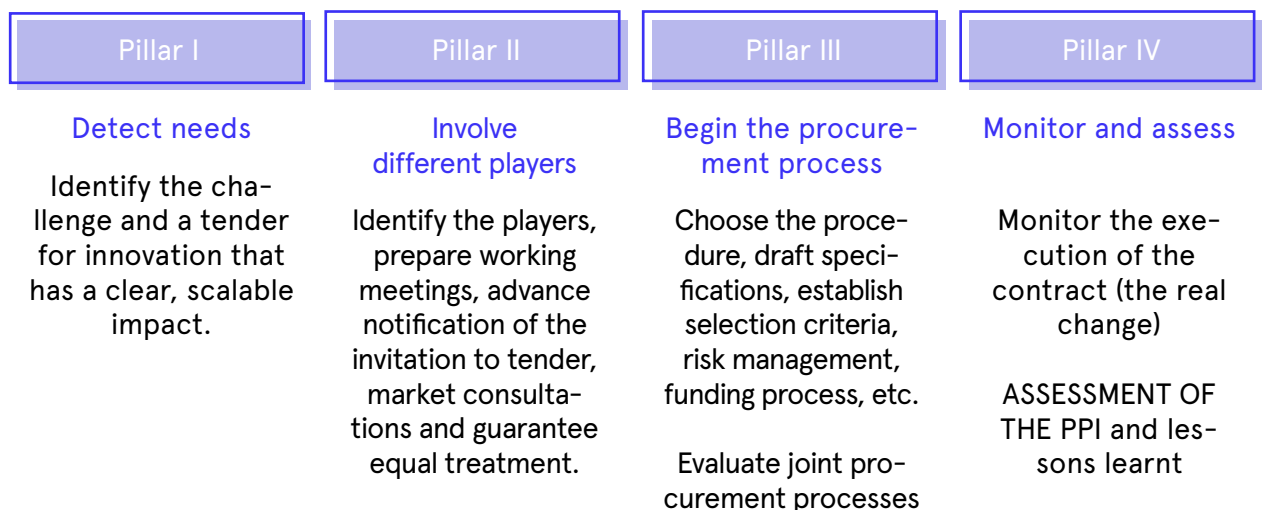
Every tender will have to be analysed on a case-by-case basis. What need do we have to cover? Is there already a solution on the

Some actions to undertake

Training
 Planning, collaboration and trust
 Creating networks Providing funding
 Risk analysis
 ... and "more training" ...

market or do we have to come up with a new one? What would happen if there already is a solution, but it's not being marketed? Can our provider become our partner?

Therefore, we have to structure our procurements around four pillars.



Let's look at it step by step...

PILLAR I Detect needs

Everyone has dozens of needs and problems to solve. We should define the objectives to be reached through public procurement from a broad range of perspectives: detecting your goals, your needs, and your challenges. A system must be applied to build a catalogue and inventory of these needs. Once the needs have been established, we must consider whether they are aligned with the objectives of the city and its residents, and whether they can be solved by simple processes or if we need to apply complex methods. In short, we have to establish categories and an order of priority.

START EARLY AND DECIDE IF PPI IS SUITABLE

Wanting to promote innovation should not lead us to create false needs. The detection of true needs will be the result of joint working sessions with the players who work with the good or service to be purchased, and with technical personnel, users, and suppliers. These sessions will be approached as a wish list of items to be achieved. Therefore, before drafting the speci-

fications, we must determine whether the solution already exists and whether it requires the development of pilot trials or not.

Example:

Within the framework of PPI projects funded under the ERDF programme RIS3cat, the challenge the City Council is posing is research into solutions for paved surfaces that reduce the heat island effect, the generation of noise, and atmospheric pollution.

From our internal working sessions, we have established that urban paved surfaces should contribute to making the city more comfortable for its residents, achieving a more natural feel, with characteristics similar to skin or clothing, and must be resistant to external demands, allowing for breathability, drainage, and maintaining a comfortable temperature. Skin has nerve endings (sensors) which allow us to feel cold or heat and which detect disease or damage with a change in colour and other symptoms (rashes, cuts, etc.). This has been the foundation for beginning a consultation with the market and determining if there are solutions that can meet this need.

Needs: the key

An assessment of needs must consider both current and future needs, and examine the organisation's capacity to implement potential solutions. A needs assessment generates a better basis for open market consultations, as it provides essential information for the supplier entities and identifies any gaps.

PILLAR II: Involve different players

Once our challenge is formulated, it is essential to have the help of professionals and consulting services who are knowledgeable about the state of the market so as to ensure that we have a full understanding of the latest advances. To that end, we must consult a wide variety of sources and work with multidisciplinary teams. We can turn to other departments or areas in the same organisation, to local or international conferences, universities, European innovation agencies and/or networks, and business, labor union, social, and residential associations, etc. We have to decide which information we need to collect and share and which market entities we will need to contact.

MARKET CONSULTATION

In the process of organising our procurements, we may also carry out a market consultation. Launching a preliminary consultation with the market enables us to better understand the existing offer and, at the same time, makes it possible for us to involve the market in advance.

These consultations are not binding for the Administration and under no circumstances should favour one set of players over another; therefore all of the information collected during the consultation must be public, the industrial and intellectual property rights of the providers must be protected, and the results must be reported. This dialogue can be initiated through an announcement prior to the invitation to tender. The essential steps to follow are:

Decide which information must be collected and shared, and which market entities must be contacted.

Choose the best format for the consultation and prepare the necessary human and material resources.

Maintain a record of the consultation process and ensure equal treatment.

ASSESSMENT OF SUSTAINABILITY AND INNOVATION IN THE RESULTS OF THE MARKET CONSULTATION

The City Council is developing a support methodology to facilitate the assessment of the ideas and solutions that we get from market consultations. The methodology used applies to any idea or solution and will allow us to prioritise them according to the degree of innovation and sustainability they contribute.

The method has two phases: first, the innovation that the idea itself contributes is assessed, keeping in mind the circumstances of the environment, the proposing entity, and how well the idea aligns with the goals of Barcelona City Council.

The second phase analyses the sustainability of the idea based on an analysis of how realistic, viable and beneficial its implementation is.

SPEA EINDHOVEN Case - The key word is "collaboration"

Eindhoven City Council made a commitment to sustainable construction with a more comprehensive, holistic approach, an approach which makes it logical for the different parties involved to make an effort to achieve long-term quality and to satisfy the needs of all parties. Furthermore, investments in innovation and quality require a longer term to obtain a sufficient return on the investment thanks to economies of scale and cooperation. The duration of the project, therefore, extends to 2045. The "Natural Step" methodology is being applied to improve the sustainability of buildings

www.eindhoven.nl/artikelen/Duurzaamheid-volgens-The-Natural-Step.htm

PILLAR III: Begin the procurement process

CHOOSING THE PROCEDURE: FACTORS TO CONSIDER

The first step in choosing the procedure is to ask the following questions: Will I need Research, Development and Innovation? Is there a solution, but not on a commercial scale? Do we have enough information to draft the technical specifications? We recommend a flexible use of procurement procedures and decisions made on a case-by-case basis.

In fact, we can solve some of our challenges by acquiring innovation through the addition of **innovation clauses or measures in our regular procurement processes.**

If we see that we must procure exclusively R&D services to develop a solution that is not available on the market, we will use a **Pre-commercial Public Procurement (PPP)** process, which will be subject to the general principles of public procurements.

However, if the market is already prepared to respond to the needs identified in a reasonable period of time, a **Public Procurement of Innovative Technology (PPIT)** process, using the normal open or restricted procedures without negotiation, may be suitable. However, we have to be able to consider the use of an invitation to tender procedure with negotiation or a competitive dialogue process that will be able to provide us with innovative final commercial solutions that are new to the market.

Competitive dialogue has proven to be useful in cases in which the contracting entities are not in a position to define the ideal means of satisfying their needs or assess the technical, financial or legal solutions that the market may offer. This situation may arise for any contract, but is particularly common with innovative projects, in the execution of large integrated transport infrastructure projects, or for large-scale networks or IT projects which require complex, structured funding.

In addition to the ordinary procedures with or without dialogue and negotiation, the 2014 directives offer us a new procedure that was created specifically to promote innovation from demand, **association for innovation.** This procedure includes the possibility for performing research and procuring the first pilot.

The Procedures chapter of this guide presents more information on the different options with regard to procedures and how to choose one.

Collaboration
Commitment
Trust

CONSIDER AND LEARN TO MANAGE RISKS

Proper management of public projects necessarily includes risk identification and analysis. This step will be carried out during the project planning phase and will be repeated during the different phases of the public procurement process. Therefore, a wide-ranging group of players must be involved both when defining the procurement needs as well as when analysing risk.

The new rules on procurement aim to facilitate cooperation between contracting authorities, which could encourage the sharing of risks and benefits to tackle innovative projects and group demand. Risk aversion could slow the efforts being invested in promoting PPI at the City Council.

Many of the risks, although not all, can be managed with an appropriate choice of procurement procedure, an intellectual property strategy, and the appropriate contractual clauses. To reduce the risks associated with PPI or with a pre-commercial public procurement (PPP), a strategy that anticipates these challenges and allows for the appropriate planning and management must be established. Other organisations or experts who have developed these types of procedures may be consulted. The innovation procurement platform provides a forum for this purpose (see more information at

<https://www.innovation-procurement.org/>)

Once the risks have been identified, there are several ways to manage them:

Implement measures that reduce the likelihood of issues arising. For example, a way of reducing risks of the contracting entity is to include a contingency plan for the people who are going to manage the project, as well as properly plan the project and receive training on PPI. To reduce technological risks, sufficient time must be allowed to test the solution. To prevent getting stuck with just one supplier, the solution would be to create joint demand to increase acquisition volume, thereby increasing the appeal to the market, meaning there will be more entities interested.

Division or transfer of risk among the parties. It is a good idea for risk to be put on the party that can best control it. Risk can also be divided into elements that can be distributed among the parties.

Avoid actions that increase risk. At the end of the project, a follow-up study of the risks will be carried out to verify the accuracy of the estimated likelihood and impact. The lessons learned from this analysis will be used in future projects.

INTELLECTUAL PROPERTY RIGHTS

PPI implies investing in making new ideas a reality, both on the part of the contracting authority as well as the part of the company providing the product or service. Everyone will want to maximise their investment, and this is generally done through intellectual and industrial property rights (IPR). The City Council

Example from the city of Detmold: photocatalytic concrete

During the market consultation, the technical risks were assessed with regard to available research studies and manufacturer information. Visits to the factories were organised and different approaches to the products were compared. A sustainability analysis was carried out based on an estimation of a life span of at least 50 years. The results were sent to the planning team to determine which techniques were the most appropriate for the project. Finally, political approval was requested for all of the work, keeping in mind the additional estimated costs associated with the use of photocatalytic concrete.

must develop a strategy for IPR which considers the foreseeable uses of the product or service it is buying, so as to obtain the most relevant benefits from the innovation.

For example, if a new design for recycling containers is developed within a waste management contract, what is better for the administration: to purchase the design or pay for a usage license? And in the case of rights to the design for the vehicles that collect these containers? When answering these questions, we must consider issues such as the Administration's future capacity to change provider, or to what extent this design could be licensed to another potential group of users of the service.

In some cases, to achieve these objectives, it will be sufficient to exchange information without an effective transfer of intellectual and/or industrial property rights.

FUNDING

We must have funding available for the initial procurement and to make provisions for the scaling up the solution if we find it to be satisfactory.

JOINT PROCUREMENT PROCESSES

This new model for contractual relations allows us to promote broader and more dynamic procurement procedures, enabling us to even consider joint and aggregate demand procurement processes with other administrations. We will have to analyse case by case whether the needs detected are ideally suited to a joint PPI, and whether it makes sense to establish a framework agreement so that other administrations can use the final results.

DRAFTING SPECIFICATIONS. MEASURES FOR INNOVATION

In general, when drafting the tender specifications for procuring works, goods and services, measures to strengthen innovation will be included through the establishing functional

technical specifications, with award criteria that promote improvements articulated as innovation proposals or any other measure which promotes innovation related to developing economic, social and environmental sustainability.

How are we going to do this?

- **By establishing technical terms** that are aligned with achieving established objectives. If we establish the terms as mandatory, this means that the market can respond to them without further preparations. However, these technical terms could restrict the market because they are impossible to complete before the deadline for submitting proposals; alternatively, we could give the market time to prepare: once again, we highlight the planning of public procurement. We can also indicate "optional" technical terms, or terms which involve voluntary improvements, which do not put the result of the tender in danger. We could also convey our functional objectives as technical terms that do not state specifically what we want, but rather describe the characteristics of what we want.

- **By establishing technical competence criteria** which set out the technical means and quality processes within companies that indicate that they will be capable of handling offers with elements of innovation.

- **By setting award criteria** that value innovative solutions, new ideas that offer a solution to the requirements of the technical terms, which now become the award criteria themselves. This is the time to score and highlight the companies that make an effort to go beyond their ordinary offers and demonstrate that they have studied our challenges and which provide technological, organisational, or procedural solutions, or any combination thereof, and who show a commitment to satisfying those results.

- **By making the price conditional on the inclusion of innovation.** Including innovative results can be an economic incentive in the contract execution phase, such that a part of the price will be paid depending on whether the company achieves results that involve the inclusion of innovative functional objectives.

- By strengthening **specialised outsourcing** for the parts of the contract that require the participation of specialised enterprising companies.

If what we need is not only innovative changes in an ordinary contract, but rather the creation of a true alliance of companies in order to develop a new service, this is now an “innovation partnership”. The project is created as a public/private collaboration to design, produce and acquire new services, goods or activities which do not exist on the market. If this type of association is going to be attempted, we recommend first getting in touch with the procurement coordination department, who will help you design the project.

The assessment of offers must be objective, grounded and reasonable. Therefore, we must design the assessment criteria for awarding contracts, and we must explain them clearly, identifying the results required in the most understandable, specific form possible.

Innovation is a commitment to sustainable development in support of efficiency in providing public services to citizens. However, they cannot be imaginative ideas that are impossible to implement. We must drive the market and guide it towards our needs, not diminish our needs because of the short-term limitations or profit objectives of certain companies.

PILLAR IV: monitor and assess

CONTRACT EXECUTION

The contract execution phase is essential. Here, all of the prior procedures carried out and good preparatory work will become evident.

However, we must understand that in these procedures, procurement does not end with the award of contract. Instead, we must establish a system to monitor and oversee execution by the contractor company and to manage collaboration between the City Council and the contractor to correctly implement the contract.

CONTRACT EFFICIENCY

A useful indicator to assess results is the efficiency of the contract. We must bear in mind the performance quotient in our contracts between the performance obtained as compared to the price we pay, and whether this quotient is being met or not.

There will also be periodic assessments of results for elements considered to be substantial, such as:

- Whether the innovation satisfies the need posed at the beginning, while respecting established social and environmental criteria.

- What the added value of the innovation is in terms of security, functionality, costs and social efficiency.

- Can the innovation be implemented on a large scale?

For longer and more established terms, the City Council should also assess the application of the PPI policy strategy. We must verify if the objectives are being followed and achieved. For example, we can evaluate if there is enough room for innovation in the contracts and how barriers to innovation are being removed.

SCALING THE SOLUTION

Once the solution has been applied, it is important to carry out an objective assessment of the results obtained, the viability of scaling the solution and increasing the expected impact, as well as its sustainability.

Case studies

The international European SPEA project



An early experience for Barcelona City Council leading a PPI project is from 2012 for the European SPEA project¹, Smart Procurement European Alliance.

THE CHALLENGE

The challenge of the project was to promote and strengthen public procurement in the field of energy efficiency for municipal buildings in the partner cities, promoting innovative solutions for public services to improve their quality and efficiency, and boosting opportunities for SMEs to participate in their public procurement.

THE PROJECT'S OBJECTIVES INCLUDED

Develop the methodology for the participation of all key players in an innovative public procurement process. Perform an analysis in terms of technologies and real requirements, followed by an analysis of needs, as well as activities aimed at increasing the participation of SMEs in the process ending in the purchase of an innovative solution.

- Exchange of knowledge among the public bodies that participate in the procurement of innovative solutions in the field of energy efficiency and renewable energy.

- Identify the groups of purchasing and providing entities.
- Create supply and demand capacities (purchasing entities and companies), as well as create groups of purchasing entities dedicated to preparing for the procurement of innovative solutions.
- Design and execute a procurement process for these new solutions, improving the capacity of (public) procurement authorities and SMEs with regard to the procurement of innovation. Encourage cooperation with other essential players to implement innovative procurement at local and European level.
- Formulate recommendations for the EU with regard to organisational barriers to a joint/coordinated procurement process. Share the procurement results with the players in charge of creating market policy.
- Create a critical mass of purchasing entities that can overcome the fragmentation of public demand in Europe through joint and coordinated procurement of energy efficiency solutions based on the experiences of the three cities coordinating the project.

The cities

The project consists of a consortium of three cities: Barcelona (project leader), Birmingham and Eindhoven.

¹ http://www.speaproject.eu/rcs_gene/extra/SPEA_brochure.pdf

THE BARCELONA CITY COUNCIL SOLUTION

In the case of Barcelona City Council, an innovative project was chosen for energy monitoring in libraries and data analysis, which was applied to a total of 10 libraries in a pilot programme.

A market consultation was carried out, and the General-Services Directorate, the Directorate of Logistics and Maintenance, the Energy Agency and Barcelona Activa joined forces and worked together. This enriched the process, as the vision of the purchasing entities was broadened.

A PIN (Preliminary Information Notice) was carried out, in which about 100 companies offered submissions, and which was used to prepare an “energy efficiency solutions bank” and a list of innovative solutions that were likely to be of use.

After a phase exploring the project’s technical and financial requirements, a tender for projects was launched in which the companies could use the solutions bank. An international panel of judges assessed the proposals and chose three finalists, with whom a negotiation process was opened in the format of round-table discussions. The contract award committee proposed the winning entity and the contract was awarded in June 2015 for a four-year project. As of 2016, the solution had been implemented in 10 libraries. Once the suitability of the proposal has been assessed, in the near future we are planning to scale the solution to other city libraries.

This project is acting as the basis for the challenge that the City Council is currently posing within the framework of PPI projects funded under the ERDF RIS3cat programme. In this challenge, the City Council is considering the maintenance of all municipal buildings, not just in terms of one building’s efficiency, but rather from a global perspective of all of these buildings.

The city of Ghent: cleaning services



THE CHALLENGE

The Department of Cleaning and Services of Ghent City Council (Belgium) is in charge of cleaning the city’s 340 municipal facilities, nurseries, police stations, fire stations, schools and administrative offices. In its new contract, Ghent City Council requested an increase in market capacity to provide environmentally sustainable

and socially responsible cleaning services. It also wanted to introduce probiotic cleaning products, which are designed to have a lower impact on the environment and human health. Due to the lack of independent studies establishing the effectiveness and benefits of these products, it considered a test period to be necessary.

MARKET CONSULTATION

The city carried out a market consultation to identify the companies interested in participating in this test period. The aim of the test was to compare probiotic cleaning products to traditional products.

The City Council tried to involve the largest number of companies possible. This was an important point of comparison, as substantial differences between the results from different participants would mean that further research was necessary. An external quality control company was included to guarantee objectivity.

Four companies participated in the pilot programme over two months. Lab tests were developed to measure the levels of fungus and bacteria with regard to the baseline measurements in each location. The individuals who use the cleaning products were actively involved.

In general, the professional cleaning personnel were satisfied with the products. In general, it was concluded that the products were just as effective as traditional products. Some users noted beneficial effects to their skin. Positive comments were also received on the smell and ease of use of the products.

PROCUREMENT

The invitation to tender was published in March 2013 through an open procedure. Five companies submitted bids. The contract was divided into three batches, which were awarded to two different cleaning companies. The bidding companies responded to the needs of the purchasing authority, and some went even further, offering innovative products with independent sustainability certifications. The contract was awarded to the most economically advantageous offer, with 10% of the points assigned to environmental performance.

The contract also included a requirement regarding social economy companies, and the specifications stated that some activities such as sweeping school playgrounds and weeding had to be carried out by these types of companies.

The risks related to the project were real and significant, as the success of the products depended on a variety of factors, such as location, type of mess, the materials and the way in which the professional cleaning personnel applied the products. Probiotic cleaning products are used differently than traditional products and they require cleaning professionals to adopt new work habits. The contract promotes the use of probiotic products, but the awardee company is free to choose its products, a fact which leaves the service provider enough space to propose other innovative solutions that fall within the City Council's objectives.

“Innovative procurement was a way to improve the quality of life of the people involved in providing our services, while at the same time achieving greater added value. The public sector can also support innovative companies, providing them with a platform for their products”.

***Tamara Bruning
Ghent City Council***

The city of Detmold: concrete to reduce air pollution



THE CHALLENGE

The city of Detmold and its busy central bus station is used by 2.3 million passengers each year. With the aim of improving the flow of traffic and accessibility, about 800 buses pass through the station on business days, and the station is used by a large number of school-aged children. To carry out the renovation, the city's department of public works identified the potential to reduce air pollution in the area by using photocatalytic concrete on the pavements and road surfaces.

PROJECT DEVELOPMENT

After an in-depth study, a cross-departmental planning group was formed which included traffic planning managers, concrete technicians, geological engineers, the university, faculty, the audit department, disability officers and political representatives. The planning group also held conversations with the city's bus company, Stadtverkehr Detmold GmbH (SVD).

The German Federal Environmental Foundation (DBU) supported the project through the Department of Civil Engineering of the University of East Westphalia-Lippe. The university researched concrete with photocatalytic technology for a year and also performed a scientific follow-up test. Additional help was also received from the Westphalia-Lippe transport association and the North Rhine-Westphalia Urban Development Fund. Cooperation for the project worked smoothly, des-

pite the fact that the total time required was longer than a traditional project.

Project planning began in January 2011 and the invitations to tender were launched in March 2012. The contract was awarded in 2012 and ended in August 2013.

MARKET CONSULTATION

Several manufacturers were asked to send brochures and information on their photocatalytic concrete with non-pollutant capacity. They were invited separately to a round of discussions with the project's group to talk about solutions and potential applications to meet Detmold's needs. The broad range of conditions and materials that affect concrete require a case-by-case approach to ensure the most suitable application of the technology. Around three months were required to obtain the information, expert opinions, and communication required on the installation of this innovative product. The contribution of the engineering school was particularly valuable during this phase. The technical risks were assessed with regard to what it had published in research reports and the manufacturer specifications. Visits were carried out to the production facilities and the approaches of the different manufacturers were compared. A sustainability analysis was carried out in accordance with the expected life span of at least 50 years. The results were presented to

the planning group to see which techniques were the most suitable for the project. Political approval was given, keeping in mind the additional estimated costs associated with the use of photocatalytic concrete.

PROCUREMENT PROCEDURE

An open procedure was used and six offers were received from contractors. The specifications were formulated in neutral terms so that different production entities could provide the material; the Detmold internal audit services were very involved to ensure the transparency of the process. Based on the information received during the market consultation, the documents for the invitation to tender specified a TiO₂ content between 3% and 5%. There were follow-up questions to the companies that submitted bids to see if they could really meet the criteria. Some companies presented solutions with conventional concrete; these solutions were 3.6% cheaper on average. A test surface was established to determine the best way to work with the material on site. The samples were evaluated as part of the tender and contract award process.

RESULT AND OTHER APPLICATIONS

The awardee company offered 5% TiO₂ content in its concrete.

“Based on the daily average of 800 buses in the station, an annual reduction of nitric oxide emissions of up to 40% is expected”, said Thomas Lammering, assistant to the head of the public works department. The additional cost of using photocatalytic concrete was relatively low, and added 90,000 euros within a total project cost of 2.8 million euros. The station design included accessibility for people with pushchairs or people with reduced mobility who use wheelchairs, and it also has guide systems for people with visual impairments.

By participating in the photocatalytic materials process, the companies involved also benefited. They increased their competence and competitiveness in the application of innovative construction materials, as well as their knowledge of materials science and process engineering. A growing number of concrete suppliers in Europe and internationally are capable of supplying photocatalytic concrete to satisfy the needs of public and private construction projects.

Generalitat [regional government] of Catalonia: sustainable paved surfaces



THE CHALLENGE

The Directorate General (DG) of Mobility Infrastructure of the Generalitat of Catalonia wants to make the sectors involved in the design, production, construction and maintenance of road surfaces in Catalonia more competitive by introducing new methods and procedures that will make them more economically and environmentally sustainable, and which will contribute new added value to their basic functions of road safety.

MARKET CONSULTATION

In order to come to a complete understanding of the subsequent invitation to tender, the Generalitat facilitated prior information on the tender process and its needs with the aim of

achieving the broadest possible participation of the interested parties, understanding the technical characteristics and quality of the solutions proposed by the market and, finally, enabling the interested players to formulate comments and suggestions.

The DG of Mobility Infrastructure of the Generalitat of Catalonia also stated that the consultation was not binding for contractual purposes.

PROCUREMENT

At the time this guide was written, the DG of Infrastructure was in the process of drafting the specifications for the invitation to tender.

5 Procedures

Regular procedures driving procurement for innovation

Within regular procurement procedures, the 2014 public procurement regulation and the law of public sector contracts offers multiple “pro-innovation” measures.

Of note is the option to carry out preliminary market consultations. The ability to take environmental and social factors into consideration during different phases of the procurement process and the use of life-cycle cost calculations have a more solid legal foundation.

Innovative solutions can be promoted which can be awarded more points given the economic and sustainability benefits they will have in the long term. Similarly, the application of functional or results-based specifications give companies more room to offer innovative proposals.

Furthermore, some modifications have been

made to the selection procedures and documentation requirements which aim to ensure better access for SMEs (many of which are very innovative) to public procurement procedures.

New cross-border joint procurement rules will allow purchasing entities from different member states to make joint purchases. The aggregation of demand from different member states will encourage the distribution of the risks and benefits of innovative projects and will group demand. Finally, and perhaps most importantly: the application of new European regulations offers us the opportunity to assess public procurement from a strategic perspective and to find the best way to achieve innovation and other objectives.

On top of all of this, we are also increasing support for electronic systems which contribute to advances towards electronic procurement so as to promote innovation in public procurement.

European directives

Beyond the means to be used in traditional procedures, the most recent amendment to the European directives revised the existing procedures and added some new procedures with the aim of supporting innovation from demand, as we will see below.

The scope of the directives includes some procedures that are especially relevant to PPI:

COMPETITIVE DIALOGUE

This procedure has been simplified in the new rules. It is normally used in large, complex projects in which the technical specifications cannot be defined in advance.

For example, when the contract awarding entities are not in a position to define the ideal means for satisfying their needs or assessing the solutions that the market has to offer. It can also be used when the needs of the purchasing entity cannot be satisfied without adapting the solutions currently available, or if their needs involve designing or creating innovative solutions. And also used when the contract cannot be awarded without prior negotiation due to its complexity, financial or legal structure, or because of the risks associated therewith.

The bidding companies accepted to the dialogue process will submit a descriptive document, and there may be one or several rounds of dialogue. General ideas become more specific during this dialogue phase. When the purchasing authority closes the dialogue, these companies can submit an offer based on their own solution to the needs defined by the purchasing authority. In the competitive dialogue procedure, any economic operator can submit a participation request, but only those operators invited can participate in the dialogue.

INVITATION TO TENDER PROCEDURE WITH NEGOTIATION

In this case, the objective is to procure works, services or supplies that include elements of adaptation, design, innovation, or other cha-

racteristics which make awarding the contract without prior negotiation unsuitable. Unlike in the competitive dialogue method we saw above, here the purchasing authority must specify the characteristics of the goods or services to be procured from the outset.

This method can be used under the same circumstances as those described above for competitive dialogue, i.e., when adaptation, design or innovation are necessary, when the contract cannot be awarded without prior negotiation due to risks or complexity, when the technical specifications cannot be defined with sufficient precision, or when only irregular or unacceptable offers have been submitted during a prior procedure. This possibility has been implemented in the 2014 directives and it replaces the negotiated procedure with prior publication.

In the "invitation to tender procedure with negotiation", any economic operator can submit a participation request, but only those economic operators who receive an invitation after the information they presented has been assessed may submit an initial bid, which will be the basis for subsequent negotiations.

A NEW PROCEDURE HAS BEEN CREATED: THE INNOVATION PARTNERSHIP

This procedure is for cases in which an innovative solution that is not yet available on the market is required. The purchasing authority decides to establish an innovation partnership with one or several players who will separately carry out R&D activity with the goal of negotiating a new innovative solution during the tender procedure.

Finally, in specific cases and circumstances, purchasing authorities may award public contracts through a negotiated procedure without publishing prior notification of an invitation to tender.

Other

Beyond the scope of the directives, there is a procedure that could give rise to public procurements for innovation. This is pre-commercial public procurement (PPP), which has historically been the least popular, but has great potential. If we need to procure R&D services, including prototype creation phases or initial production tests, this is the best way forward.

PPP can include the procurement of limited prototypes and/or the development of product

tests, but it does not include the purchase of large quantities of final solutions in the commercial phase; nor does it need to involve State aid. Therefore, the benefit derived from the R&D services purchased will not be solely for the use of the purchasing authority.

Although it is not included in regulations, PPP must be executed in an impartial, open, transparent and competitive manner, so that the R&D services are purchased at market price.

Thalea II

THALEA II is the first PPI that is following a PPP in Health-ICT for intensive care units. Its participants include the Corporación Sanitaria Parc Taulí of Sabadell.

It will implement remote sensing and telecare solutions to mitigate the negative impacts of an ageing society and labour force. Reflecting on the experience acquired through THALEA's PPP, this PPI process will acquire and implement a promising innovative technology that will help save more lives and increase patients' quality of life.

For further information: www.thalea-pcp.eu



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