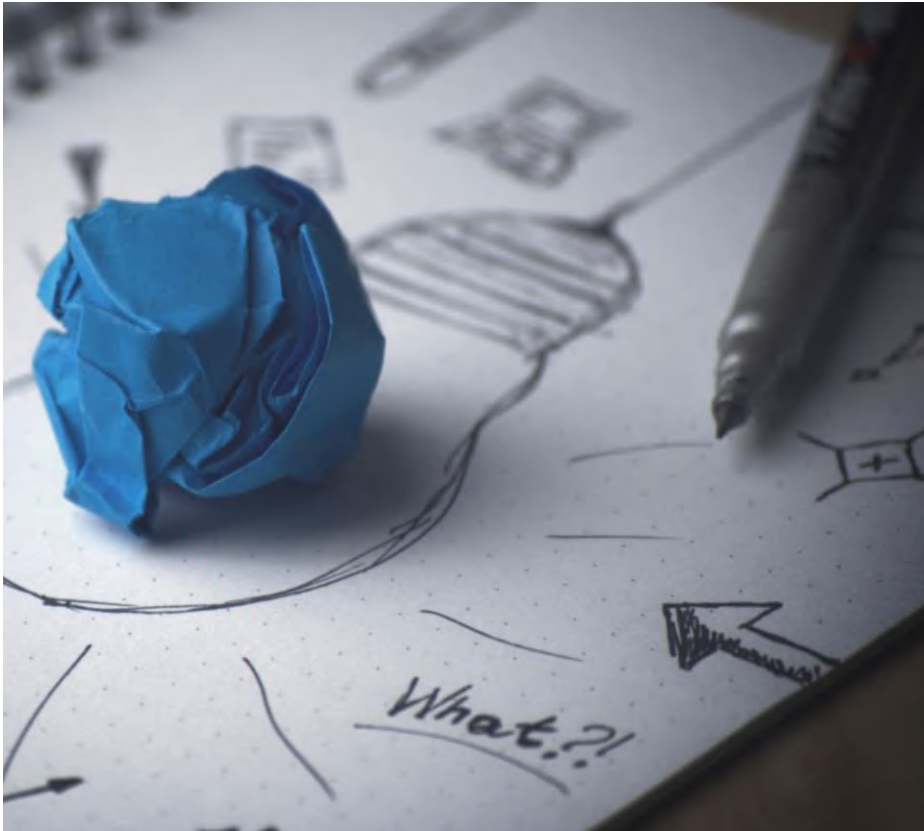


Hands-on experience on PPI in the field of Energy Efficiency

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TECNALIA

How to procure innovation
Training sessions_ 23rd of March 2022



Content of this session

1. Introduction of PPI process: how to jump from Market consultation to the Implementation
2. How are needs defined in terms of performance or functional requirements?
3. How do you know if I need to go for a PPI?
4. Is this innovative? Examples of how to evaluate innovation
5. How do I present an innovative offer?

Introduction of PPI process: How to jump from Market Consultation to the Implementation



Preparation

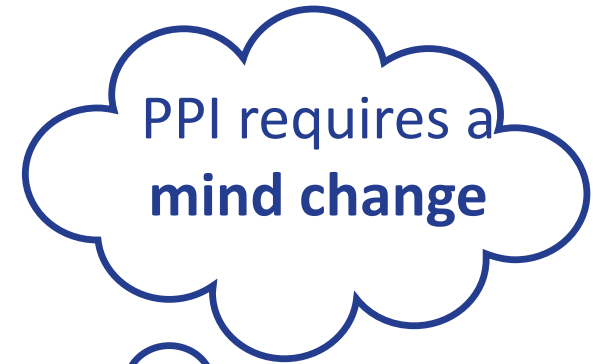
Needs definition
Marker engagement



Implementation

Functional specifications
Award criteria
Documents preparation
Publication

Introduction of PPI process



Introduction of PPI process

Collect and analyze enough information to guide decision-making

TEAM



Coordination
 Between the
 different departments of
 the local entity
 involved in the PPI

SUBJECT OF THE CONTRACT



what is the purpose
 of the contract

DEFINITION OF FUNCTIONAL SPECIFICATIONS VS TECHNICAL SPECIFICATIONS



How are needs defined in terms of performance or functional requirements?

Technical specifications

Vs

NEEDS
&
FUNCTIONAL
SPECIFICATION

- Draw up technical **specifications in terms of performance or functional requirements**, provided that the parameters are sufficiently precise to allow tenderers to set the subject-matter of the contract and allowing to award the contract (Directive 2014/24/EU Arts. 42 and 31.1)
 - by reference to technical specifications (standards)
 - by reference to “Labels” requirements, based on objectively verifiable and non-discriminatory criteria
- Contracting authorities should to allow “**variants**” as often as possible (Art. 45) with “**minimum requirements**” to be met by the variants and “specific requirements for their presentation”

How are needs defined in terms of performance or functional requirements?

FUNCTIONAL SPECIFICATIONS:

- define the **function, objective or performance to be achieved**, not the product or service object of the contract
- refer to the **desired result**, not to a specific technical solution
- provide bidders with a **clear idea** of what is being sought
- ensure that **different offers are comparable**

express not what is wanted, but what is needed so that each bidder can propose a different solution to solve the problem

How are needs defined in terms of performance or functional requirements?

Which one of the following definitions is defined in terms of functionality?

EXAMPLE 1_ A school is looking to replace lighting equipment. The school needs to reduce the whole life cycle costs while improving lighting quality

- 1 Supply and installation of XXX light bulbs of XXX Watts, and XXX light fixtures
- 2 Classrooms needs to be lit to XX quality for XX hours per day. Corridors need to be lit to YY quality for YY hours per day ...
- 3 The electricity consumption of the lighting system installed must be XX% lower than the current system

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Which one of the following definitions referring to LIGHTING is defined in terms of functionality?

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How are needs defined in terms of performance or functional requirements?

EXAMPLE I_ A school is looking to replace lighting equipment. The school needs to reduce the whole life cycle costs while improving lighting quality

Technical specification	Functional/performance specification
Supply and installation of XXX light bulbs of XXX Watts, and XXX light fixtures	Classrooms needs to be lit to XX quality for XX hours per day. Corridors need to be lit to YY quality for YY hours per day...
	The electricity consumption of the lighting system installed must be XX% lower than the current system.

How are needs defined in terms of performance or functional requirements?

Which one of the following definitions is defined in terms of functionality?

EXAMPLE 2_ A company needs to decarbonize its corporate buildings

1

Supply HVAC solution, not powered by fossil fuels, which ensures that a temperature of XX°C is maintained for XX hours a day, with minimum consumption of primary energy.

2

Supply and installation of an electric heat pump for providing heating and cooling. Nominal power of XX kW and minimum performance of XX%

3

Provide HVAC solution, feed by electricity, that ensures comfort conditions inside buildings with reduces energy consumption in XX%

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Which one of the following definitions regarding **DECARBONISATION is defined in terms of functionality?**

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How are needs defined in terms of performance or functional requirements?

EXAMPLE 2_ A company needs to decarbonize its corporate buildings

Technical specification	Functional/performance specification
Supply and installation of an electric heat pump for providing heating and cooling. Nominal power of XX kW and minimum performance of XX%	Supply HVAC solution, not powered by fossil fuels, which ensures that a temperature of XX°C is maintained for XX hours a day, with minimum consumption of primary energy.
	Provide HVAC solution, feed by electricity, that ensures comfort conditions inside buildings with reduces energy consumption in XX%

How are needs defined in terms of performance or functional requirements?

Which one of the following definitions is defined in terms of functionality?

EXAMPLE 3_ A listed building consumes too much energy for heating due to poor thermal envelope quality

- 1 Retrofitting solution for protected façade that allows to reduce heating consumption in xx%
- 2 Provide a solution to reduce heating losses through envelope maintaining the protected external façade, and minimum reduction of useful interior surface (maximum admitted xx cm)
- 3 Supply xx m² of insulation material, thickness xx cm, and thermal conductivity xx kWh/m²

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Which one of the following definitions about THIS NEED is defined in terms of functionality?

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How are needs defined in terms of performance or functional requirements?

EXAMPLE 3_ A listed building consumes too much energy for heating due to poor thermal envelope quality

Technical specification	Functional/performance specification
Supply xx m ² of insulation material, thickness xx cm, and thermal conductivity xx kWh/m ²	Provide a solution to reduce heating losses through envelope maintaining the protected external façade, and minimum reduction of useful interior surface (maximum admitted xx cm)
	Retrofitting solution for protected façade that allows to reduce heating consumption in xx%

How are needs defined in terms of performance or functional requirements?

Which one of the following definitions is defined in terms of functionality?

EXAMPLE 4_ A municipality needs to centralize the control of its municipal buildings in order to reduce general energy bill. Renewable energies are also needed. Everything must be controlled by a centralized management system

1

Supply a management system to perform a central management of building energy systems as well as energy production on site to reach a general reduction of xx % in the municipal energy bill.

2

Supply a management system for xx buildings, provided by xx communication protocol, up to xx output signals,...

3

Supply a management platform that allows to have centralized all information regarding energy needs in municipal buildings, with capacity to perform intelligent and predictive management of on site produced energy to ensure the better use of energy in each moment.

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Which one of the following definitions regarding this municipality's need is defined in terms of functionality?

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How are needs defined in terms of performance or functional requirements?

EXAMPLE 4_A municipality needs to centralize the control of its municipal buildings in order to reduce general energy bill. Renewable energies are also needed. Everything must be controlled by a centralized management system

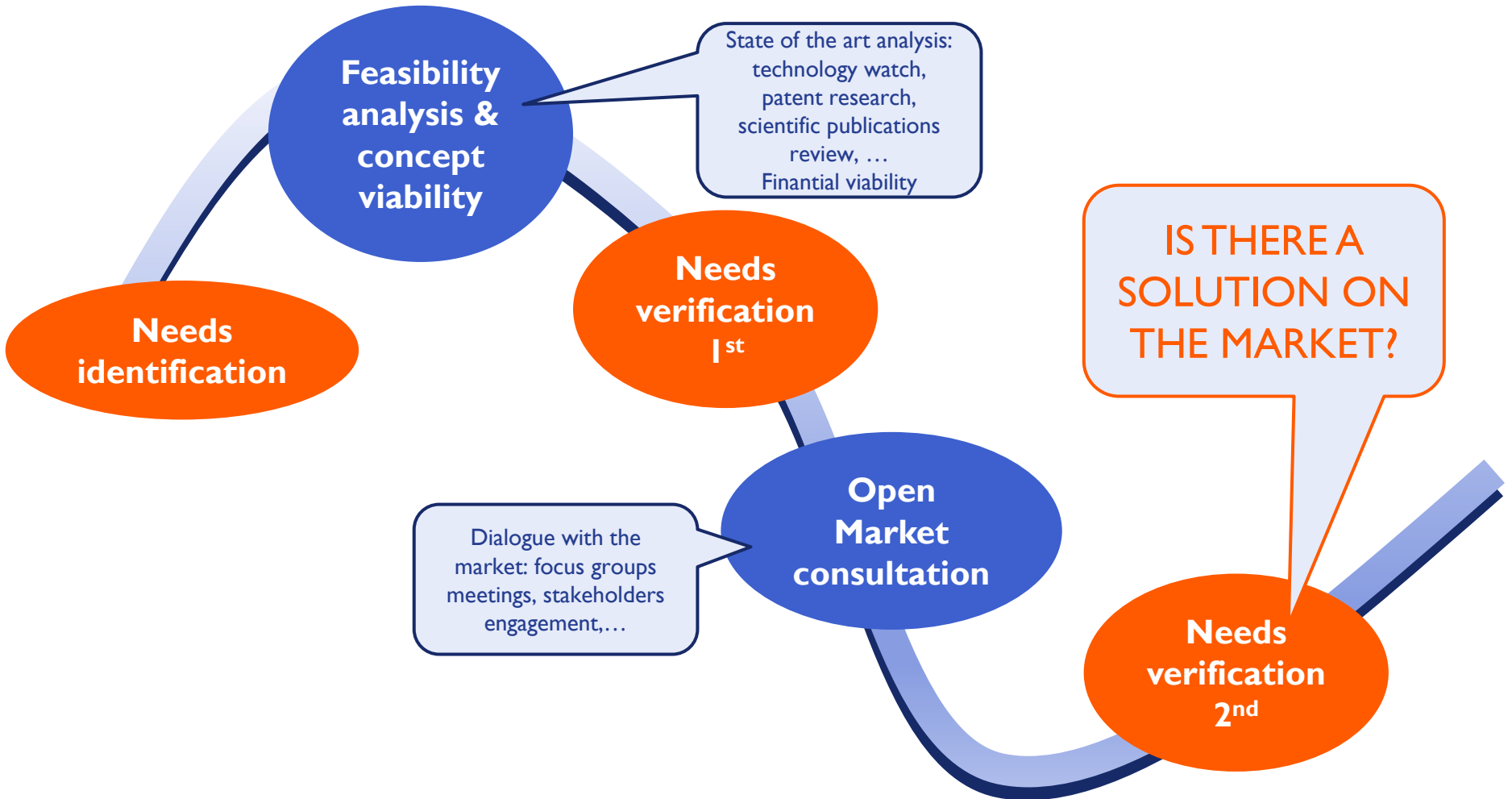
Technical specification	Functional/performance specification
Supply a management system for xx buildings, provided by xx communication protocol, up to xx output signals,...	Supply a management platform that allows to have centralized all information regarding energy needs in municipal buildings, with capacity to perform intelligent and predictive management of on site produced energy to ensure the better use of energy in each moment.
	Supply a management system to perform a central management of building energy systems as well as energy production on site to reach a general reduction of xx % in the municipal energy bill.



How are needs defined in terms of performance or functional requirements?

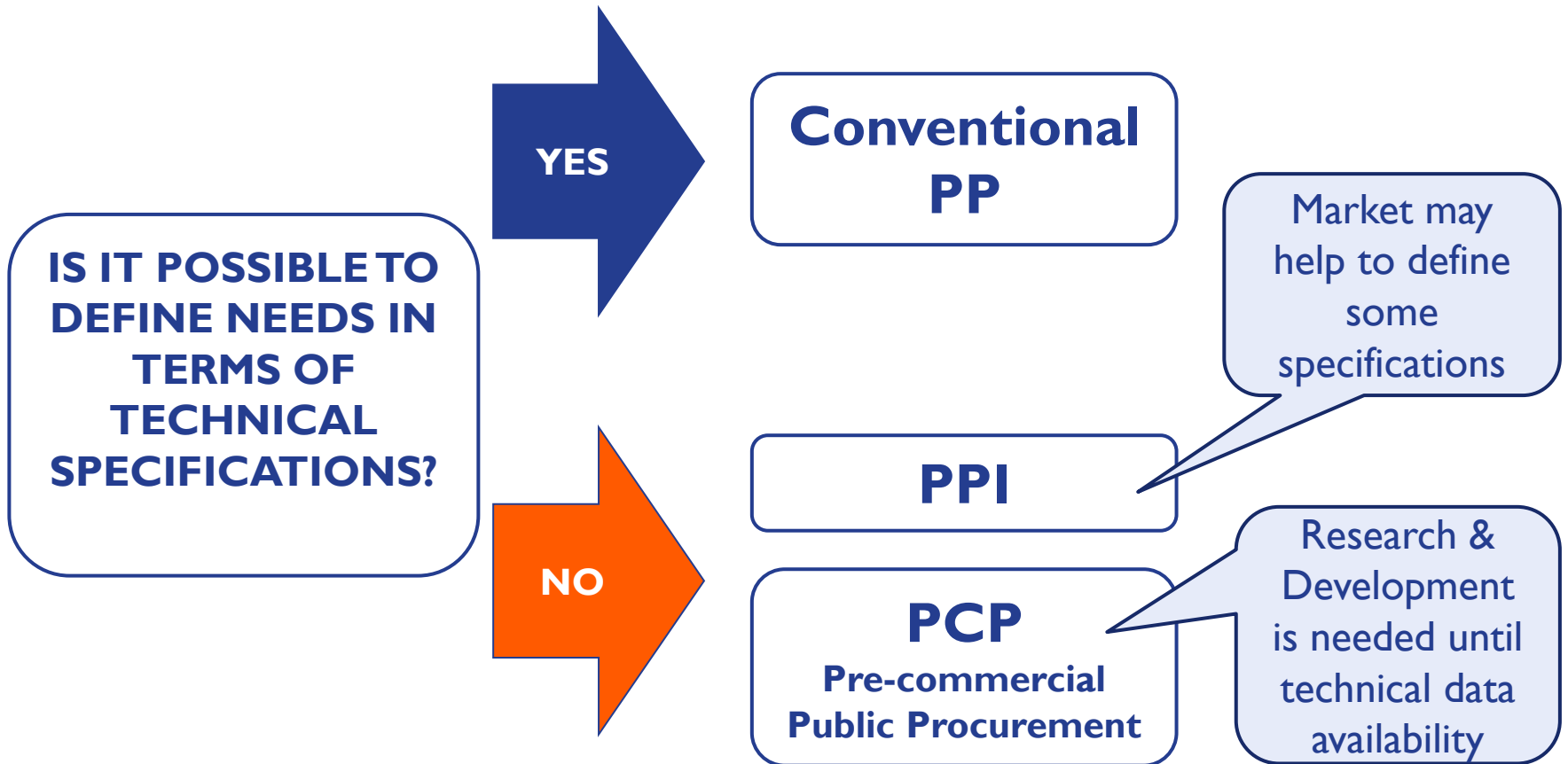
Technical specification	Functional specification
Replacement of oil-fired boiler providing a heating capacity of X.	Heating system designed to heat Room X to a temperature of X for X hours per day, and Y rooms to a temperature of Y for y hours per day, with a primary energy consumption of Z
Urban road lighting with AAA type lighting systems or equivalent	Lighting of urban roads with lighting systems capable of reducing electricity consumption by up to 70% while maintaining a luminous power equivalent to AAA systems (mixed technical and functional model). equivalent to AAA systems (mixed model, technical and functional specification)
Supply and maintenance of XXX dialysis equipment with XXX technical requirements.	The hospital needs to perform XXX daily dialysis practices with the characteristics XXX and XXX for XXX hours per day. or, The number of daily dialysis practices will be increase by X%; the duration of each practice shall be reduced by at least X% and the number of patients increased by at least X%. patients will be increased by at least X%.

How do you know if I need to go for a PPI?



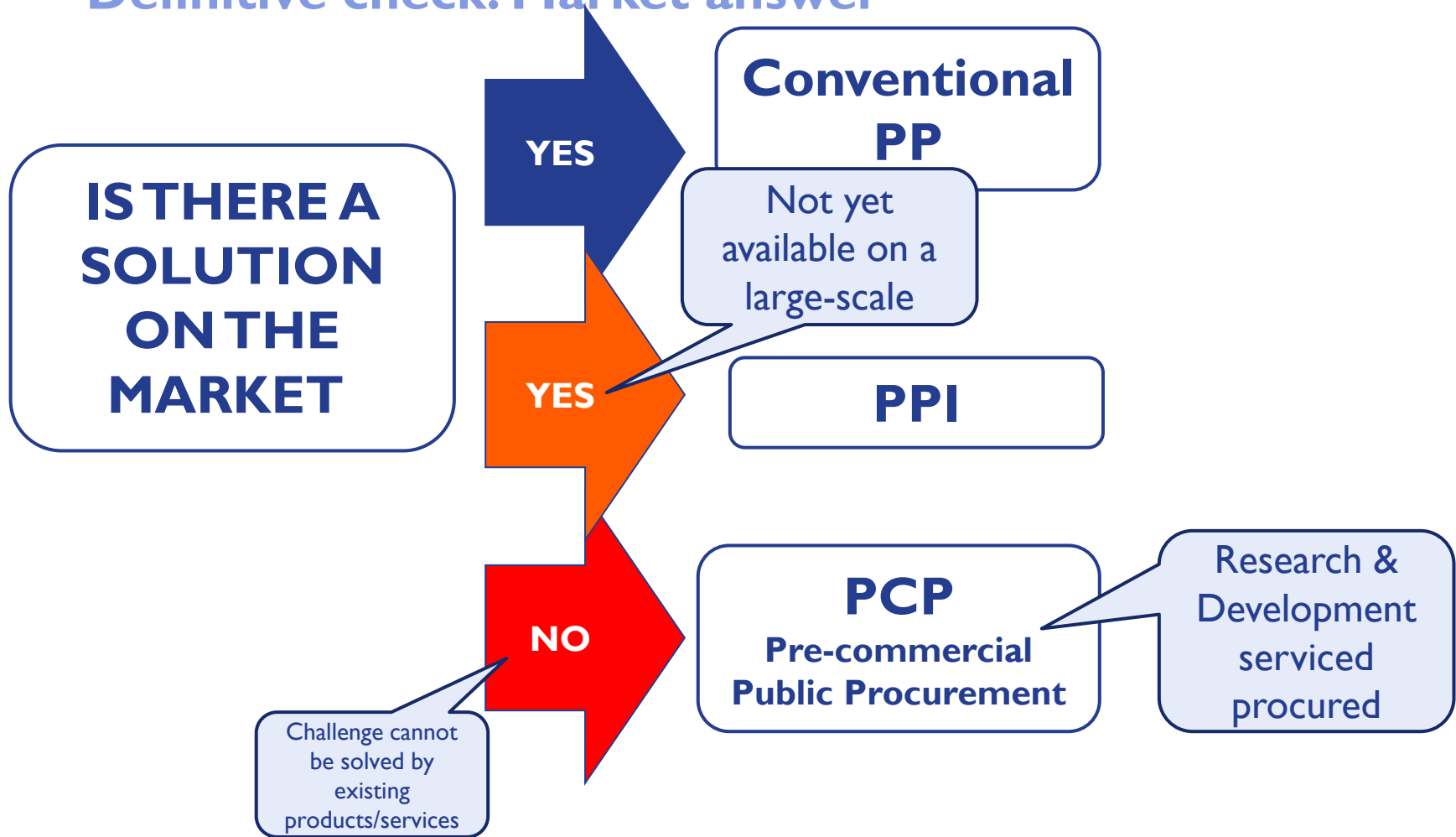
How do you know if I need to go for a PPI?

First check: Defining needs



How do you know if I need to go for a PPI?

Definitive check: Market answer



Is this innovative?

Examples of how to evaluate innovation

THE SUCCESS OR FAILURE OF THE PPI DEPENDS ON THE AWARD CRITERIA

- **Price** should not be a determining factor
- Determination of the weight of innovation in determining the "**best value for money**"
- Consideration of the "**life cycle**" **cost** and operating costs at the time of the award

Is this innovative?

Examples of how to evaluate innovation

The value of the economic criterion does not have to be the contract price

The economic criterion can be established by means of the value of the life cycle cost of the proposed solution, including the following costs or concepts:

1. Costs related to the purchase
2. Cost of use related to energy consumption
3. Maintenance costs
4. End-of-life costs, including collection costs and recycling costs



Is this innovative?

EXAMPLE I _ PPI for exterior carpentry solutions of the Magatzem de Cuco (Spain)

Criterion	Description	Points
Criteria quantifiable by formula or quantitative criteria		
1	Reduction of heating and cooling requirements associated with the thermal performance of windows	25
2	Quality assurance of the materials	10
3	Life-cycle cost	20
	Maximum score	55
Non-quantifiable criteria by formula or qualitative criteria		
4	Technical quality of the solution presented in relation to the needs identified. Cooling strategies 10 points Lighting 10 points Sound insulation 10 points Environmental 5 points	35
5	Innovative character of the proposed solution and possible future developments of the solution.	10
	Maximum score	45

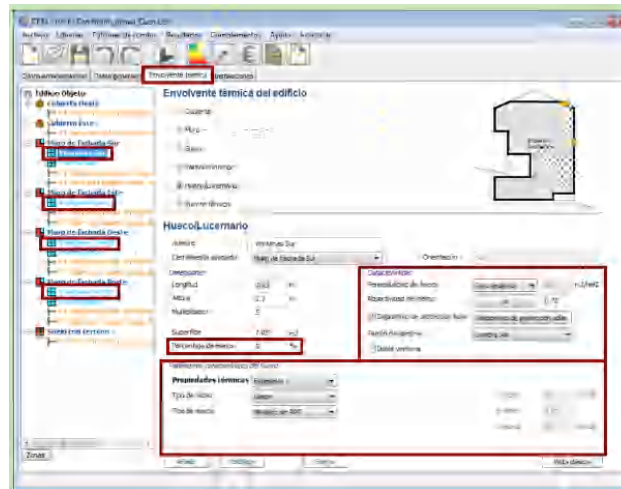


Is this innovative?

EXAMPLE I_ PPI for exterior carpentry solutions of the Magatzem de Cuco (Spain)

Criteria quantifiable by formula or quantitative criteria

- Calculation of the **reduction of heating and cooling requirements** according to the methodology provided - Transparency in calculation
- **Calculation of the life cycle cost** according to the methodology implemented in the excel file



Costes de Ciclo de Vida (CCV)	
Información general	
Horizonte temporal de planificación	30 [años]
Tasa de descuento nominal	4 [%]
Tasa de inflación	1 [%]
Vida útil de la solución de ventana propu-	30 [años]
Información sobre los CCV	
Costes totales de adquisición	0,00 [€]
Costes totales de funcionamiento por año	0,00 [€/año]
Costes totales de mantenimiento por año	0,00 [€/año]
Valor remanente y costes de eliminación	0,00 [€]
Resultados CCV en valor actual neto	
Total de costes en valor actual neto [después de 30 años]	0,00 [€]
Promedio de costes anuales en valor actual	0,00 [€/año]
Resultados CCV detallados	
Costes de adquisición	
Costes de adquisición e instalación [después de 30 años]	0,00 [€]
Costes de adquisición e instalación anuales promedio	0,00 [€/año]
Costes de funcionamiento	
Costes de funcionamiento [después de 30 años]	0,00 [€]
Costes de funcionamiento anuales promedio	0,00 [€/año]
Costes de Mantenimiento	
Costes de mantenimiento [después de 30 años]	0,00 [€]
Costes de Mantenimiento anuales promedio	0,00 [€/año]
Valor Remanente / Costes de eliminación	
Valor remanente / Costes de eliminación [después de 30 añ	0,00 [€]
Valor remanente/ Costes de eliminación anuales promedio	0,00 [€/año]



Is this innovative?

EXAMPLE 2_ Renovation of a public building for its transformation into a nZEB (Spain)

The value of the economic criterion does not have to be the contract price

Criterion	Description
Non-quantifiable criteria by formula or qualitative criteria	
1	Quality of the proposal, functionality and rational organization in the resolution of the programme of needs established for the improvement of the energy demand.
2	Quality of the description of the proposed energy study in the resolution of the programme of needs established for the improvement of energy demand
3	Economic and environmental sustainability: Integrity and constructive coherence that allows the minimisation of maintenance costs of the building to be assumed by the city council.
4	Technical feasibility
Criteria quantifiable by formula or quantitative criteria	
5	Energy savings from the solution based on reduced heating and cooling requirements associated with the planned energy improvement.
6	Emission reduction
7	Cost of the proposed solution based on the budget and on year of operation



How do I present an innovative offer? **GOOD TIPS**

Read in detail what is requested, and the **documentation requested** (i.e. specific formats to declare values, certain properties, etc.)

Emphasize **what solves the need** not covered by the conventional market, highlight the innovation of the proposed solution

Promote the **capabilities of the product**, even if it is new and has not yet been able to pass the homologation and/or certification processes

- Make use of **simulation tools** to justify the improvement introduced with the new product (dynamic energy simulation software, CFD calculations, ...)
- Provide **experimental results** of previous applications if they are available (monitoring of buildings with the solution implemented,...)
- **Laboratory tests** independent from certification (laboratories with experimentation capacity, experimental infrastructures, ie: Kubik by Tecnalía)

Highlight the advantages of the solution compared to other options on the market in technical and economic terms. For the **economic advantages**, the global operation of the solution must be considered (ie: reduced maintenance costs, availability economical spare parts, long useful life,...)

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tecnalia

MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

Thank you!

