



## ANNEX I. CHALLENGE DESCRIPTION

*The following specifications of the unmet need are purely indicative. These specifications may evolve as the state of the development in each of the fields is updated.*

**THE PROJECT “VALENCIA, A CLIMATE-NEUTRAL CITY IN 2030; PPI STRATEGIC LINE 4: CIRCULAR AND SUSTAINABLE VALENCIAN ECONOMY”, FOCUSES ON: THE IDENTIFICATION OF INNOVATIVE TECHNOLOGIES AND SOLUTIONS THAT CONTRIBUTE TO THE MINIMISATION OF WASTE WITHIN THE CITY; PARADIGM SHIFT IN THE MANAGEMENT OF SOLID AND LIQUID WASTE TOWARDS A SCENARIO OF ZERO WASTE AND CLIMATE NEUTRALITY. GREEN TRANSFORMATION OF THE ECONOMIC AND CULTURAL ACTIVITIES OF THE CITY**

### 1. BACKGROUND

The Valencia City Council has proposed a framework for strategic reflection with a city planning vision for the year 2030. This long-term vision pursues a transition towards a more sustainable, healthier, more shared, and more prosperous and entrepreneurial city, and involves identifying and implementing solutions for the great urban challenges.

To this end, and in collaboration with numerous entities within the Valencian science, technology and innovation system, in 2020 it launched the Missions Valencia 2030 research and innovation governance model. This model places people, the relationships between them and their interactions with the urban environment and the environment that surrounds them at the centre, and proposes the development of innovation oriented towards missions that improve people's lives, fundamentally serving their needs and in line with their expectations. In short, innovation with a tri-fold purpose and impact: economic, social and environmental.

With this humanistic vision, the Valencia City Council is developing its Valencia 2030 Urban Strategy where it merges its public policies inspired within the framework of the 2030 Agenda and the sustainable development goals with the innovation missions launched from Missions Valencia 2030. Thus, the Valencia Urban Strategy is structured by uniting the 2030 Agenda and innovation, in order to solve the greatest complexities that society and cities face. This strategy is based on 6 Visions aimed at achieving a Healthier, more Sustainable, more Shared, more Prosperous and Entrepreneurial, more Creative and more Mediterranean city for its citizens, while following a roadmap to generate and improve capacities in its Local Public Administration in order to ensure its role of support and key instrument for the realisation of the desired city model.

Within this strategic context, in 2021, with a broad social and political consensus, the city of Valencia approved its first innovation mission: the Valencia 2030 Climate Mission, which aspires to make Valencia a climate-neutral city by 2030 within the context of the European mission to reach 100 climate neutral and smart



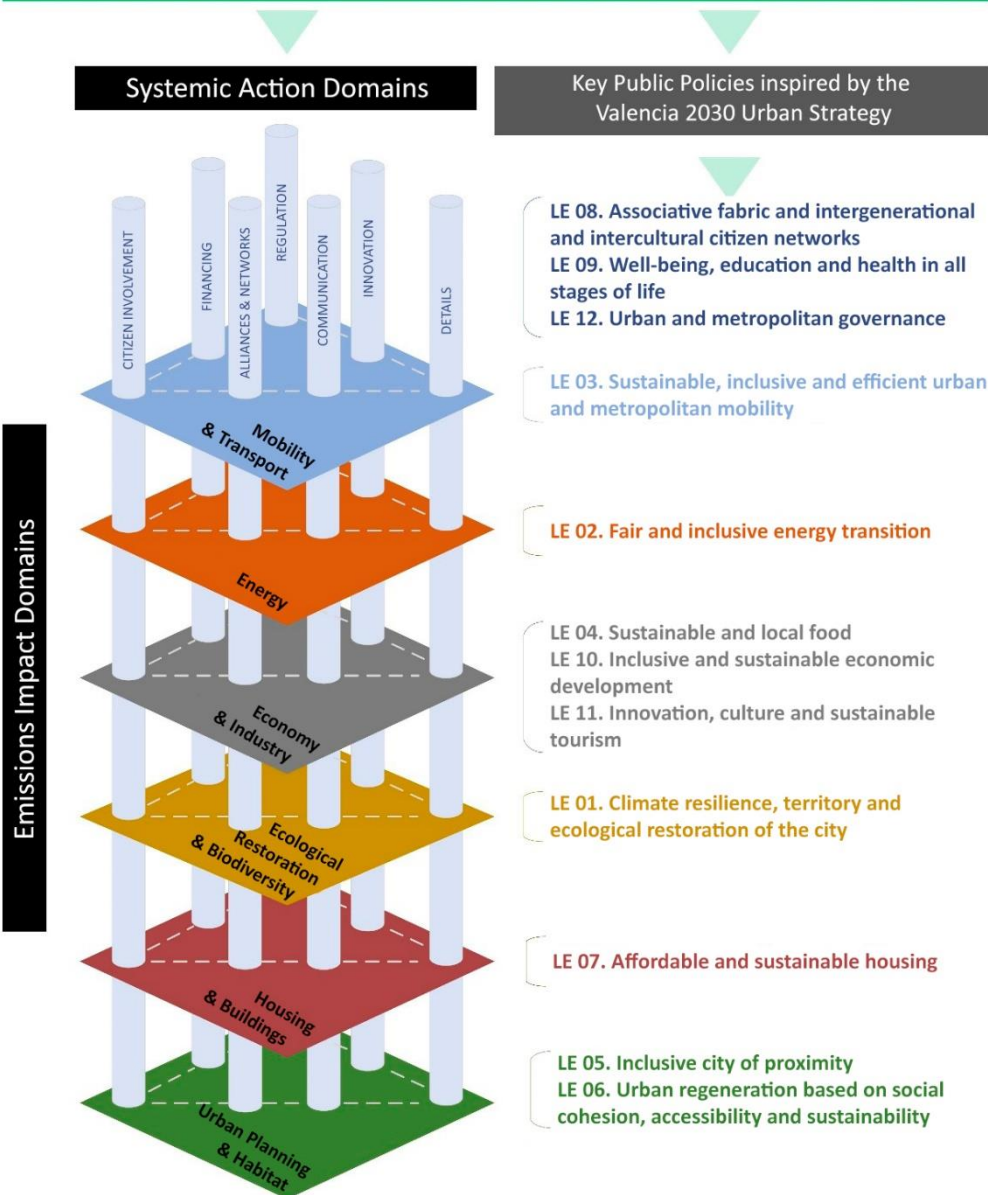
cities by the end of the decade. The following image identifies the domains with the greatest impact on emissions and the domains of systemic action necessary for the success of the Valencia 2030 Climate Mission.



### VALENCIA 2030 CLIMATE MISSION

Valencia, a climate neutral city by 2030, by and for the citizens

### IMPLEMENTATION PLAN OF THE VALENCIA 2030 CLIMATE MISSION Systemic Transition and Innovation towards climate neutrality in Valencia



This exercise is enabling the development of an action plan adapted to the specific urban, climatic, social and economic characteristics of the City of Valencia under the vision of progress led by its City Council. A plan that proposes responses adapted to large-scale challenges, many of which are global in nature,



and which are progressively being included in the urban development agendas of major cities around the world.

But adequately addressing these challenges is not an easy task or an immediate solution. It will require a very large and prolonged effort to transform the city model, both at the public and private levels and on the social level, and it will not be possible to face them by mobilising only the solutions and technologies available today. Making it happen, and on time, will require the massive development and deployment of innovative technologies and solutions, many of which are still in the pipeline.

The Valencia City Council is aware of this reality, of the magnitude of the challenges that the city inescapably has to face, of the need to do so according to a social agenda that enables it to achieve the minimum negative impact on its entire population, mainly among the most disadvantaged, and of the importance that technological innovation will have throughout the process.

For this reason, it has decided to resort to Public Procurement of Innovation (PPI) in order to stimulate the development and initial deployment of new adapted solutions and technologies within the city that support this transformation effort. Innovative technologies and solutions that can be subsequently scaled up in the Valencia area, both through public and private initiatives, and that can also be applied in other urban centres with similar characteristics, with the consequent pull effect of this initiative.

This recourse to Public Procurement of Innovation is not conducted with a narrow vision, addressing only one or several specific challenges. It is proposed in a comprehensive format, in order to obtain a broad vision of the potential solutions to support this necessary urban transformation, and then invest progressively, depending on the availability of resources, in those that have a greater potential to have an impact on the city. The goal of this is also to have a justified Strategic Plan for the PPI, including a “pipeline” of projects consistent with the municipal strategy, which guide a consistent activity of raising complementary funds that multiply the action capacity of the Valencia City Council.

To this end, and thanks to the involvement of a large group of representatives from public and private entities, and from Valencian civil society, the Valencia City Council has co-created and published its Valencia 2030 Early Demand Map (EDM), which identifies a total of 54 challenges and 305 public needs not met efficiently by the market, and which will probably require the development of new products and services to meet them, and thus maximise the generation of public value.

A prioritisation of these 54 challenges and these 305 needs has been carried out with an eye on the Valencia 2030 Climate Mission, and the result has subsequently been reviewed and improved with the support of researchers and technical and legal experts. This prioritisation has operated on the Sustainable Vision as the backbone of the entire PPI strategy, and has applied three assessment factors: the City Council's ability to act according to its competence



framework, the potential to create value from technological innovation, and its specific weight in the city's transformation and decarbonisation goals.

As a consequence, a Strategic PPI Plan has been developed, which is structured around 8 lines of work:

***PPI strategic line 1: Sustainable mobility***

Transformation of the city's internal mobility and logistics model towards a scenario of minimum energy consumption and climate neutrality.

***PPI strategic line 2: Energy model***

Transformation of the city's Energy Model towards a scenario of production and consumption of energy from renewable sources within the context of a fair and inclusive transition towards climate neutrality.

***PPI strategic line 3: Urban planning and sustainable habitat***

Adaptation and renovation of infrastructures, equipment, buildings and homes, public and private, in order to optimise their energy efficiency, minimising the city's energy demand and emissions in a scenario of climate neutrality.

***PPI strategic line 4: Circular and sustainable Valencian economy***

Minimisation of city waste; paradigm shift in the management of solid and liquid waste towards a scenario of zero waste and climate neutrality. Green transformation of the economic and cultural activities of the city.

***PPI strategic line 5: Ecological restoration***

Maximising the ecological restoration of public and private spaces within the city and the use of sustainable solutions based on nature, in support of the Valencia 2030 Climate Mission.

***PPI strategic line 6: Resilience and adaptation***

Adaptation of the city to deal effectively with the adverse effects that may arise from Climate Change. Optimising its resilience capacity in a climate neutrality scenario.



### ***PPI strategic line 7: Smart governance***

Strengthening of the Valencia City Council with those public capacities necessary to be more efficient and to monitor and intelligently govern the systemic transformation of the municipality towards climate neutrality, and towards a city model adapted and resilient to climate change.

### ***PPI strategic line 8: Education and social involvement***

Maximisation of education, awareness, participation and involvement of citizens, public and private entities, and civil society in achieving the systemic transformation of the City of Valencia in accordance with the goals of the Valencia 2030 Climate Mission.

In Article 115 of Law 9/2017 of 08 November, regarding Public Sector Contracts, which transposes the Directives of the European Parliament and of the Council 2014/23/EU and 2014/24/EU, of 26 February 2014, Articles 40 and 41 – hereinafter referred to as the LCSP–, it is established that the contracting authorities may carry out preliminary market consultations in order to prepare the possible procurement and inform the economic operators about their plans and the requirements that will need to be met in order to take part in the eventual award procedure, as well as the rest of the aspects that must be taken into account in a process of this nature.

In this sense, the Decree of 03 November 2016 of the Delegate of the Government Department of Economy and Finance, approving Instruction 4/2016 regarding the processing criteria for conducting preliminary consultations of the market within the scope of municipal public procurement, the goal of which is to establish common and general processing criteria that must be taken into account by the contracting authorities for conducting preliminary market consultations, is also key.

This document addresses PPI Strategic Line 4: Circular and Sustainable Valencian Economy: Minimisation of city waste; paradigm shift in the management of solid and liquid waste towards a scenario of zero waste and climate neutrality. Green transformation of the economic and cultural activities of the city.

## **2. STATE OF THE DEVELOPMENT**

Cities represent 85% of the world's GDP generation, are responsible for 75% of the consumption of natural resources and nutrients, and generate 50% of global waste. As a consequence, the transformation of value chains in urban areas is essential for an efficient transition to a circular economy model.

In addition to the actions aimed at recovering the solid and liquid waste that is generated, this transition involves reducing the amount of this waste, developing and applying innovative solutions that enable the redesign of consumption flows related to six priority sectors; construction, food, fashion, consumer goods, tourism and industry.



New flows that make it possible to close the circularity of the economy by working on the initial design of products and services, promoting local production and distribution, facilitating repair and reuse, and maximising recycling and final recovery. All this so that the products, materials and resources used within the city remain in use for as long as possible.

The implementation of these new flows requires, in many cases, the development and implementation of innovative technologies, solutions and business models: new packaging materials, new models of ownership of goods and provision of services, new concepts of use and reuse of clothing, new materials, technologies and construction and housing models, new planning systems for food purchases and consumption, etc.

The Valencia City Council has developed numerous activities in favour of sustainability and the circular economy. Among the most recent actions is its participation in the Sustainability and Circular Economy Cluster of the hospitality sector under the slogan “If we move, everything will change”, being the first city in the world to certify the carbon footprint of tourism. Among the topics discussed were food waste, compensatory measures for the carbon footprint of terraces and the impact of the sector on the social structure.

On the other hand, the Valencia City Council is part of the European Green City Accord, which reduces pollution, promotes the circular economy and increases biodiversity, preparing its candidacy for the European Green Capital in 2024. This application represents a step forward in creating EU funding opportunities for a transition to a cleaner and healthier Europe.

Additionally, the Valencian Regional Government, in collaboration with Ecovidrio and the Metropolitan Entity for Waste Treatment (EMTRE), rolled out an innovative glass container recovery module at the Manises urban waste plant, which enables the recovery of tonnes of glass not separated correctly, so that it becomes a valuable resource that can be recycled and reused.

Different national, regional and local administrations have developed activities with the aim of redirecting the economy and production and consumption models towards circular models. At a national level, the approval of the Spanish Circular Economy Strategy and the Pact for a Circular Economy stand out.

These elements lay the foundations for promoting a new production and consumption model focused on the life cycle of materials and products, for the minimisation of waste and the efficient use of resources. The Strategy is aligned with the goals of the European Union plans, with the European Green Deal and the 2030 Agenda for Sustainable Development.

On the other hand, the Circular Economy Action Plan is an initiative promoted by the Ministries of Agriculture and Fisheries, Food and Environment, and Economy, Industry and Competitiveness to advance in the transition towards this new economic model.



Among the lines of action set forth is the development of new materials and advanced, sustainable and versatile products, together with the use of new ICT and logistics technologies, optimising production and distribution systems. They also highlight measures for the establishment of a circular economy model in housing and the automotive industry, involving citizens. Challenges related to business models are included, such as extending the useful life of products, producing and increasing the use of products from renewable sources, recycling and improving the efficiency of available resources. Finally, public-private collaboration is encouraged, through R&D&i programmes conducted by universities and companies, in the process of diversifying the economy and promoting efficient and sustainable business progress.

### 3. UNMET NEEDS

Within the framework of the Missions Valencia 2030 programme, and the Strategic Plan for Public Procurement of Innovation described above, this proposal is motivated by the need to implement solutions related to PPI Line 4: Circular and Sustainable Valencian Economy: Minimisation of city waste; paradigm shift in the management of solid and liquid waste towards a scenario of zero waste and climate neutrality. Green transformation of the economic and cultural activities of the city.

For this reason, it launches the Preliminary Market Consultation phase aimed at companies and organisations that intend to collaborate with the Valencia City Council in response to this challenge, developed more extensively in “Section 5 Specific Goals” of this same document, providing information that improves the definition and scope of the potential Public Procurement of Innovation projects to be tendered.

### 4. GENERAL GOAL

The general goal of this project is to collect the necessary information to prepare a Framework Agreement on the Public Procurement of Innovation, with different batches, provided that the result of the Preliminary Market Consultation (PMC) is in the terms provided for the Public Procurement of Innovation. This Framework Agreement on the Public Procurement of Innovation will give rise to the different contracts as provided for in the Public Sector Contracts Law.

It should be noted that, depending on the state of the development and the solutions proposed, it may give rise to other types of bidding, whether they are ordinary public procurement tenders, because the market is sufficiently mature, or pre-commercial public procurement procedures, as well as partnership procedures for innovation, if the results of the PMC were in very early stages, far from commercial solutions.

Additionally, another of the goals set out in this project is to inform economic operators about the plans and contracting requirements of the Valencia City Council.



More precisely, the specific goal of the project is to stimulate R&D&i activities in the private sector through the PPI to generate solutions for the main needs currently existing in the City Council within the scope of the Valencia 2030 Climate Mission.

## **5. SPECIFIC GOALS**

To identify innovative solutions and technologies, of any nature, with potential application within the City of Valencia, which enable its City Council to promote the transformation towards a circular model of the City in any of the areas related to its urban dynamics, in compliance with the goals of the European Green Deal, the European Green City Accord, and the Circular Economy Action Plan of the Government of Spain, with a global ambition of Zero Waste and decarbonisation of the city towards climate neutrality promoted by the Valencia 2030 Climate Mission.

Within the scope of impact of this PMC, the City Council's interest in also identifying technologies and solutions that specifically affect some of the key economic sectors for the success of the Valencia 2030 Climate Mission (tourism, agri-food, culture and leisure, commerce and services) is emphasised, promoting its transformation towards a sustainable economic model in a scenario of climate neutrality. Likewise, the City Council wants to highlight its interest in identifying proposals that contribute to promoting the economy of knowledge and entrepreneurship within the city.

In a non-exhaustive way, the aim is to identify innovative technologies and solutions that enable it to:

- a. Maximise the application within the City of the concept of waste hierarchy, promoting the prevention of its generation, encouraging reuse, strengthening recycling and favouring its traceability.
- b. Maximise the application of the concept of eco-design in municipal management infrastructures, facilities and services, both in new acquisitions and in renovation and improvement interventions. This is done with the goal of minimising its carbon footprint, minimising the introduction of harmful substances in its construction and production processes and in its composition, maximising the renewable origin of the materials used, facilitating its reparability, prolonging its useful life and enabling its recovery at the end of it.
- c. Maximise the application of the concept of eco-design in the organisation and implementation of significant cultural and sporting activities within the city, with a specific, but not exclusive focus on those related to the Fallas festival and with cultural and sporting events with mass participation, always maintaining or strengthening the current intangible value of our cultural heritage. This is done with the goal of minimising its carbon footprint, minimising the use of harmful products in its processes and materials, maximising the renewable origin of the products used, and where appropriate, enabling recycling.





- d. Promote responsible consumption, including both information tools on the characteristics of products and services, and models to promote their use by companies and citizens.
- e. Make the flows in the food value chains within the City more efficient, minimising food waste, including through solutions and technologies that promote greater efficiency in its management at the community and domestic level.
- f. Optimise the selective recovery of food waste from households and restaurants, with a high intrinsic potential for the generation of secondary raw materials or the production of energy vectors.
- g. Make more efficient, specifically, the flows in the value chains related to the operation of municipal markets and school canteens, in order to reduce food waste, promote local consumption, optimise the recovery of waste generated, and ensure the circularity of all materials and equipment related to its logistics.
- h. Maximise the recovery of the materials and products contained in the city's solid and liquid waste (of any origin) for reuse as raw materials and valuable resources, guaranteeing the health of people and the protection of the environment and with a goal of Zero Waste and climate neutrality. This includes contemplating paradigm shifts in management models.
- i. Contribute to promoting the circularity of consumption flows in the construction and fashion industries, with any type of solution that promotes the reuse of products and components and the recovery of raw materials.
- j. Maximise the energy recovery of those materials contained in the solid and liquid waste (of any origin) from the city and its surroundings that are not recoverable as raw materials, through direct recovery strategies and the production of energy vectors for transport and mobility. This is done in order to explore and promote the transition of the city's solid and liquid waste treatment plants towards a biorefinery model, guaranteeing the health of people and the protection of the environment, and with a goal of Zero Waste and the reduction of CO<sub>2</sub> emissions.
- k. Connect liquid urban waste recovery strategies with ecological restoration actions in order to maximise its potential as a non-conventional water resource, at the same time optimising the use of nutrients included in its organic fraction, guaranteeing the health of people and the protection of the environment.
- l. Any other innovative solution or technology that has the potential to make a significant contribution to the goal of transforming the City's consumption model towards circularity in any of the areas related to its urban dynamics.

## 6. EXPECTED RESULTS

As a result of this consultation, the aim is to obtain the necessary information to activate the bidding processes that are considered appropriate as described in section 4 "General Goal" of this document.



The Valencia City Council will study the proposals for solutions that are submitted and may use them, in accordance with the provisions of Article 126 of Law 9/2017, of 08 November, regarding Public Sector Contracts, to define the detailed functional or technical specifications that can be used in the contracting procedures for goods or services that, subsequently, can be summoned, fundamentally, although not exclusively, through the Public Procurement of Innovation (PPI) procedure.

The Valencia City Council will record, in a report of conclusions, the actions carried out within the framework of the Preliminary Market Consultation. The list of entities participating in the consultation will appear in said report and the next actions to be carried out by the entity will also be established. This report will form part of the eventual procurement files that derive therefrom.