



AJUNTAMENT
DE VALÈNCIA

Missions
València 2030

LAS NAVES

Early Demand Map València 2030 Sustainable València -
Climate Change



**Early Demand Map València 2030 -
Sustainable València - Climate
Change**



Presentation of the Sustainable València Look- Climate change

The Sustainable Look from the perspective of climate change refers to the **interrelationship and interdependence between people and the environment**, that is, between the citizens of València and the territory they inhabit. A sustainable city is one where the environment and its inhabitants enjoy dignity and quality, **without putting existing resources at risk and taking into account future generations**, in order to ensure social justice, **through a just and inclusive ecological transition in the face of climate change**.

This vision leads us to a València 2030 as a **city resilient to climate change**, which has managed to **integrate green and blue urban areas at a metropolitan level, and to maintain its biodiversity**, through the orchard, the coastline and the Turia river beds. A city that **has reduced greenhouse gas emissions to improve air quality, that uses renewable energies and is energy efficient**.

It is a city that practices urban planning that respects the territory, **promotes responsible consumption and local and sustainable production with a dynamic**, fair and local agri-food system. It is a city that **sustainably manages the integral water cycle** and is committed to the circular economy to reuse, repair, recycle and reduce the waste it generates. The city provides **a healthy environment** in 2030 in which people and sustainability are the driving force of **the new economic model with the generation of new economic activities and employment**.

The challenges and unmet public needs presented below must be read, interpreted and understood together with those of the Sustainable València Look from the perspective of sustainable mobility.





Challenges sheet

The following is the set of challenge sheets that have been identified for the configuration of the Early Demand Map associated with the Sustainable València Look - Climate Change



1

Optimisation of the MSW collection system



Justification of the need/challenge

The Valencian Region is the fourth largest autonomous community in Spain in terms of waste generation. In the city of València, the fraction of domestic packaging waste is the most worrying.

Despite intense work to raise awareness among citizens and economic agents about the value and importance of recycling and the correct classification of products to avoid mixing different types of waste, there is still a wide margin for improvement in recycling results, especially in the case of electronic devices, plastics, batteries and oils. Along these lines, in addition to identifying reasons such as lack of space in the home, lack of containers or distance from the home to the containers as the main reasons for not achieving the targets, it is considered essential to make progress in incentives focused on rewards.

In this way, the purpose of this challenge is to promote innovative solutions that reduce the amount of waste, while at the same time improving waste collection and sorting processes, taking advantage of the greater environmental awareness that Valencian citizens as a whole have experienced in recent years, as stated in the EAE Business School's Environmental Awareness in Spain Report.

Global challenge associated

Reducing the city's environmental impact and combating climate change

Strategic line

Climate resilience, territory and renaturalisation of the city

Field of Missions

Urban waste reduction

Priority

LOW MEDIUM HIGH

Deadline

SHORT MEDIUM LONG

Expected impact

Local Government [5 green squares]

Business fabric [4 green squares, 1 grey square]

Citizenship [5 green squares]

Unmet public needs



Harvesting technology

Development and construction of smart surface containers for the characterisation of organic solid waste, based on the use of open IoT technologies, the application of machine learning algorithms and the use of open data

Digitisation and electrification of waste collection systems, both trucks and manual collection trolleys



Awareness-raising and promotion of separate collection

Advancement of new gamification-based solutions to promote waste separation from the household level

Green taxation and other bonuses associated with separate collection



2

Waste treatment and conversion



Justification of the need/challenge

Traditionally, waste management has been treated by the different municipal administrations as a first order need aimed at collecting and treating waste to guarantee the cleanliness and healthiness of cities and, subsequently, also to reduce the impacts on the environment and people's health. Following the spread of "throw-away" consumption practices, municipal waste management policies have been aimed at **"collecting and depositing" increasing waste in landfills or incinerators.**

However, the growth in waste figures, coupled with a greater social awareness of the scarcity of resources, has imposed **the need to change the framework for waste management approaches and to put waste prevention first and foremost, and maximum recovery of waste** once it has been generated, at the centre. Although municipal waste represents less than 10% of the total waste generated in the EU, it is one of the most polluting waste streams.

It is therefore necessary to make progress **in improving the treatment of the waste that is collected**, with a particular focus on being able to reintroduce it into the economy as value-added products, as sources of energy, etc.

Global challenge associated

Reducing the city's environmental impact and combating climate change

Strategic line

Climate resilience, territory and renaturalisation of the city

Field of Missions

Urban waste reduction

Priority

LOW MEDIUM HIGH

Deadline

SHORT MEDIUM LONG

Expected impact

Local Government

Business fabric

Citizenship

Unmet public needs

New treatment techniques

Modernisation of treatment plants with optical separators and the implementation **of full automation solutions for composting**

Development of **new bio-waste treatment solutions**

Advances in **transformation processes and social innovation** regarding uses and **alternatives to plastic**

Production of **Building Blocks for industry** - extraction and recovery of **high added-value compounds** from municipal waste streams

Valorisation

Introduction of tools and technologies for the **improvement of material recovery rates**

New energy recovery solutions through biomethanisation and biogas treatment



3

Promoting the circular economy and recycling

C O N S U M E

L E S S

S H A R E

B E T T E R

Justification of the need/challenge

Cities are the main driving force of the economy and are the main focus of natural resource consumption (75%) and waste generation (50% of global production), so they must play an essential role in the transition to a circular economic model. However, **today the economy is still almost entirely linear, with only 12% of secondary materials and resources re-entering the economy.**

Global challenge associated

Reducing the city's environmental impact and combating climate change

Priority

LOW

MEDIUM

HIGH

Deadline

SHORT

MEDIUM

LONG

Expected impact



Local Government



Business fabric



Citizenship



For this reason, and beyond the challenges associated with improving the collection and treatment of waste, it is also **necessary to focus on the beginning of the chain**, i.e. improving the design phases to achieve product durability by combating programmed obsolescence and promoting servitisation, reuse, refurbishment, recycling and reprocessing of components. All of this is **based on the need to provide consumers with the necessary information** when making purchasing decisions.

At the level of the Valencian Region, and closely linked to this challenge, it is necessary to highlight the **online platform EnCircular.es**, whose vocation is to become a meeting, information and training point, as well as to generate synergies and common projects linked to the circular economy model of the territory.

Strategic line

Climate resilience, territory and renaturalisation of the city

Field of Missions

Consumir menos, mejor y más local

Unmet public needs



Promoting the materials cycle

Deployment of **collection containers for useful objects** for sharing at neighbourhood level among users

Development of **biodegradable materials as an alternative to plastic**

Use of **new materials and solutions based on eco-design**



Circular economy business models

Promoting the **circular economy through public procurement**

Incorporation of **the sustainability layer in the Valencian creative sector**: fashion, crafts, etc. in order to generate new products with high added value



Citizen empowerment

Development of new solutions for **the fight against food waste**

Development of new formulas and solutions based on **gamification to promote recycling**



4

Reduction of CO2 emissions



Justification of the need/challenge

Mitigating the effects of climate change on a global scale is a huge challenge for humanity. At the same time, there is a general consensus that there is not much time left before it is too late to make the necessary societal transformation a reality. **Cities cover 3% of the earth's land area, yet they are responsible for 72% of global greenhouse gas emissions.**

Global challenge associated

Reducing the city's environmental impact and combating climate change

Priority

LOW MEDIUM **HIGH**

Deadline

SHORT MEDIUM LONG

Expected impact

Local Government

Business fabric

Citizenship

Against this backdrop, the city of València signed the **Covenant of Mayors** in 2009, which involved making international commitments to reduce its level of CO2 emissions by at least 40% by 2030. In 2016, València had managed to reduce emissions by 28%, which was considered an insufficient rate. For this reason, and within the framework of the València 2030 Missions Strategy, the first of the innovation missions approved was, precisely, the **"València Neutral City"** Mission.

Strategic line

Climate resilience, territory and renaturalisation of the city

In line with this mission, this challenge aims to promote **the creation of innovative solutions to achieve the commitments acquired in terms of emissions reduction**, with a special focus on the systemic transformation of its neighbourhoods from this perspective of climate change mitigation.

Field of Missions

Reduction of CO2 emissions

Unmet public needs

Emissions monitoring

Strengthening of the work of the Citizen **Observatory on Climate Change** through the development of **new systems for inventory and monitoring, analysis and prediction** of emissions and environmental intelligence

Development of **new innovative leak detection systems** (at petrol stations, gas pipelines, etc.)

Large-scale emission reduction

Development of **new innovative solutions based on District Heatings for the reduction of emissions** through innovative district heating networks

Development of new innovative solutions for the integral **decarbonization of Districts of the city of València**

Development of new innovative solutions to advance in **energy-positive districts**

Involvement of the 4 helix

Creation of new processes and mechanisms of **social involvement for decarbonization**

Development of **new taxation measures for emissions-reductions of CO2**



5

Increase in renewable energy production in the city



Justification of the need/challenge

In the framework of the aforementioned **Covenant of Mayors**, the city of València also committed itself to a **27% increase in renewable energy production by 2030**. However, by the mid-term measurement of 2016, it had only managed to increase its renewable energy production by 0.1%.

In the electricity sector, **mature renewable technologies**, mainly solar PV and wind, are already **economically competitive**. However, they still require a clear and stable framework that, in addition to providing predictability and facilitating the financing of investment in renewables, directly passes on to consumers the reduction in production costs that renewable technologies have experienced in recent years. These, and many other factors, are the lines of work for the future in the **Integrated National Energy and Climate Plan**, in which the growth in the penetration of renewable energies is an absolute priority.

In this context, this challenge aims to try **to increase the capacity of the city of València for renewable energy production**.

Global challenge associated

Advancing the energy transition

Strategic line

Just and inclusive energy transition

Field of Missions

50% of consumption from renewable energies

Priority

LOW MEDIUM **HIGH**

Deadline

SHORT **MEDIUM** LONG

Expected impact

Local Government **5/5**

Business fabric **5/5**

Citizenship **5/5**

Unmet public needs



Promotion of renewable energies in buildings

Integration of **renewable generators** (solar, wind, etc.) in existing buildings

Integration of **energy storage systems in buildings** to facilitate the penetration of renewables

Maximization of the use of the roofs of public buildings and urban areas as **photovoltaic generation areas**



New renewable energy sources

Electric and thermal power generation based on the use of **stationary generation fuel cells**

Development of innovative solutions based on the **implementation of green hydrogen as an energy source**



6

Digital and just energy transition



Priority

LOW MEDIUM **HIGH**

Deadline

SHORT **MEDIUM** LONG

Expected impact

Local Government

Business fabric

Citizenship

Justification of the need/challenge

The aspiration to significantly increase the share of renewable energies entails the need **to develop a more flexible, multidirectional and intelligent energy system** capable of efficiently and safely absorbing new renewable generation. This means, therefore, **the transformation of the electricity system from a technological perspective, including the deployment of new storage technologies, the technological updating of energy distribution grids and the development of new real-time energy monitoring systems, among others.**

All of this is framed within the acceleration of technical innovation processes from the digital prism, **establishing elements such as regulatory test beds** (sandboxes).

On the other hand, this challenge is also justified by **the need to shape an energy transition that leaves no one behind**. Thus, in addition to trying to identify and **develop new mechanisms to combat energy poverty**, the aim is also **to increase the technological options in the energy sector** from the demand side, developing new collaborative energy models based on self-consumption. .

Global challenge associated

Advancing the energy transition

Strategic line

Just and inclusive energy transition

Field of Missions

50% of consumption from renewable energies + Reduction of inequalities + Full digitalization

Unmet public needs

Network digitization

Development of **smart energy communities** at the public level

Development of **platforms and solutions of a social nature** that facilitate the implementation of **community energy projects**

Collaborative energy models

Organization of collective and grouped purchases of energy rehabilitation solutions for buildings and homes

Development of new solutions based on **collective self-consensus**

Fight against energy poverty

Provision of public and private roofs (large surfaces) for **self-consumption of households in energy poverty**

Development of innovative solutions and mechanisms for the **early detection of households with energy poverty**



7

Efficient management of water and other resources of Albufera



Justification of the need/challenge

In recent decades, urban development, industrial growth and the settlement of an intensive agricultural model have had a significant **impact on this wetland of more than 21,000 hectares**. In 2004, **the State diagnosed the pollution problem** for the first time and, since then, measures have been developed to reduce the arrival of industrial waste and the network of wastewater treatment plants and storm tanks has been extended.

However, the problem of the **Albufera of València, a protected ecosystem included in the Natura 2000 Network** and the list of **wetlands of Ramsar importance**, is not only one of **water quality**, but also of **quantity**. In the 1950s and 1960s, the Júcar's inflow was 700 cubic hectometres, compared to the scarcely 200 that reach the lagoon today. This has been due, among other factors, to the **reduction in the contribution of water from the rivers** as other uses have been developed in the basin.

With all this, this challenge aims **to improve the environmental sustainability of this highly valuable asset**, by deepening the deployment of actions and new innovative tools to ensure its survival first and its subsequent enhancement.

Global challenge associated

Reducing the city's environmental impact and combating climate change

Strategic line

Climate resilience, territory and renaturalisation of the city metropolitano

Field of Missions

Enhance green and blue infrastructure and interweave it with the city

Priority

LOW MEDIUM HIGH

Deadline

SHORT MEDIUM LONG

Expected impact



Unmet public needs



Development of innovative solutions to compensate for **coastal regression on the Albufera** coastline as a result of the **port's impacts on sedimentary dynamics**

Development of innovative mechanisms to increase the **contribution of water from the city to the Albufera**, to compensate for the potential decrease in flows from other sources

Development of new tools for the **detection and elimination of microplastics** in the Albufera



Enhancement of the Albufera as a **carbon sink project**

Consideration of the Albufera as a **Low Emission Zone**



Development of new solutions for the **management of rice straw waste in the Albufera**



8

Resilience to adverse natural phenomena



Justification of the need/challenge

Resilience is defined as the capacity of individuals, communities and systems to survive, adapt and thrive in the face of stress and shocks, and even transform when conditions require it. More specifically, focusing on the application of this concept in urban environments, urban resilience is the capacity of a city to: **prevent hazards; resist impacts; respond to crisis situations; recover the functionalities of the urban and social system; and learn from experience.** With all this, **a growing concern related to natural disasters and their impacts** on an increasing number of people exposed to them has brought this concept into focus.

Each element that forms part of the urban habitat, its **functions and services, depends on the correct functioning of its infrastructures, the relationships between them, the relationship between these structures and the territorial environment and, finally, the capacities and tools to manage these relationships.**

So, this challenge aims **to find effective responses to increasingly complex risks with greater variability, especially those linked to adverse natural phenomena as a result of climate change.**

Global challenge associated

Reducing the city's environmental impact and combating climate change

Strategic line

Climate resilience, territory and renaturalisation of the city metropolitano

Field of Missions

Improving the resilience of the city in crisis or catastrophe scenarios

Priority

LOW MEDIUM **HIGH**

Deadline

SHORT MEDIUM LONG

Expected impact

Local Government

Business fabric

Citizenship

Unmet public needs

Development of innovative solutions in the form of **water evacuation systems in case of floods** (gardens such as storm drainage systems)

Development of innovative solutions in the form of **emergency electric power generation systems**

Development of innovative solutions in the form of **coastal protection systems for responding to sea level rises**

Development of innovative solutions in the form of **cybersecurity systems for basic public services**

Development of innovative solutions in the form of **heat wave response systems**

Development of **innovative solutions for the social protection of vulnerable groups** and people in crisis situations



Response systems



Predictive models of risk situations

Development of a **platform for management, prediction and response to adverse natural phenomena** in real time and multi-agent