VALENCIA

Roadmap

Funded by the H2020 programme of
the European Union

TOMORROW

Valencia Roadmap

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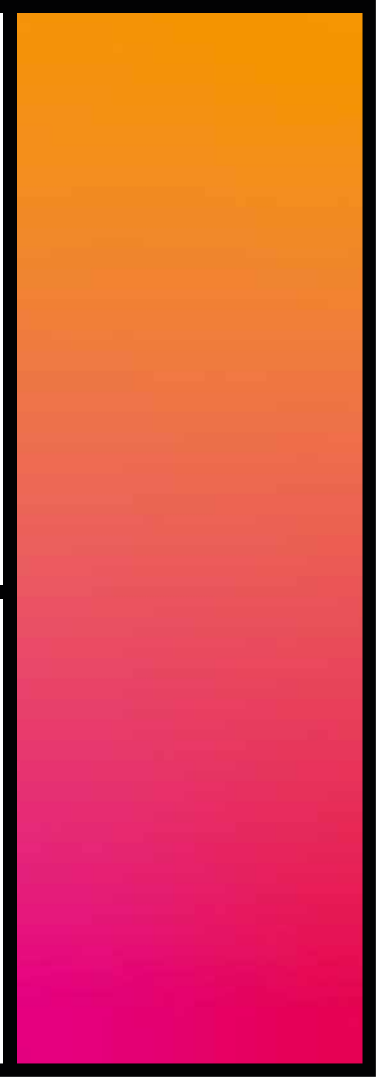
FAIR AND INCLUSIVE ENERGY TRANSITION STRATEGY



VALÈNCIA 2030

Coordination and drafting:
AJUNTAMENT DE VALÈNCIA, VALÈNCIA CLIMA I ENERGIA

Dynamisation:
INGENIO CSIC-UPV

Graphic design and editorial layout:
XINXETA MULTIMEDIA SL

Impression:
GRAFIMAR COOP. V.

FAIR AND INCLUSIVE ENERGY TRANSITION STRATEGY

VALÈNCIA 2030

ENERGY TRANSITION BOARD

This Strategy has been drawn up collaboratively by the participating entities of the València Energy Transition Board and its Demonstration Project Commissions, which represent up to **30 entities from the 5 helices of the city** (civil society, academic sector and research, private sector, public administration and media).

For more than 2 years of work, the ETB and its Commissions have designed this Strategy over **30 joint work sessions.** Their contributions do not imply that they fully endorse this Strategy and their contributions may not necessarily represent the entity to which they belong.

Nuria Baeza Roca (AeioLuz), Salva Moncayo Granados (AeioLuz), Ignacio Lacomba (Ajuntament de València), José Villalba (Ajuntament de València), Carlos Sánchez (ASELEC), Juanjo Catalán (ASELEC), Rafael Castillo (ASELEC), Maite Mercado (Asociación de Periodistas de Información Ambiental), Inmaculada Bordera Guijarro (AVAESEN), Pepe Sanchís (CEFIRE CTEM), Vicente Iranzo (CEFIRE CTEM), Empar Puchades (CEL Castellar-L'Oliveral), Juana Blasco Soler (Colegio de Administradores de Fincas de València y Castellón), Salvador Puigdengolas (Colegio Ingenieros Industriales Comunitat Valenciana), Xesco Martínez (Diputació de València), Miriam Eisermann (Energy Cities), Paco Romero (Federació d'Associacions Veïnals de València), Alfredo Sanbeat (Generalitat Valenciana), Celsa Monrós (Generalitat Valenciana), Cristina Vicent (Generalitat Valenciana), Pedro Fresco (Generalitat Valenciana), Margarita Tomàs (GNE Finance), Patricio Cartagena (GNE Finance), i-DE Redes Eléctricas Inteligentes, Gema Alcañiz (IMEDES), Ana Escario (INGENIO CSIC-UPV), Guillermo Palau (INGENIO CSIC-UPV), Sergio Segura (INGENIO CSIC-UPV), Ana Sanchís (Institut Valencià de l'Edificació), Begoña Serrano (Institut Valencià de l'Edificació), Cristina Jareño (Institut Valencià de l'Edificació), Miriam Navarro (Institut Valencià de l'Edificació), Pau Carnero (Institut Valencià de l'Edificació), Tomás Gómez (Instituto Ingeniería Energética, Cátedra Transición Energética Urbana UPV), Laura Martín Frax (Instituto Tecnológico de la Energía), Victòria Pellicer (Las Naves), Maria Josep Picó (Organisme Autònom Municipal de Parcs, Jardins i Biodiversitat Urbana), Juan Sacri (Sapiens Energía), Maribel Polo López (Som Energia València), Alejandro Gómez (València Clima i Energia), Andreu Escrivà (València Clima i Energia), Arturo Zea (València Clima i Energia), Carlos Sánchez (València Clima i Energia), Corentin Girard (València Clima i Energia).

COORDINATION AND DRAFTING
Ajuntament de València, València Clima i Energia

DYNAMISATION
INGENIO CSIC-UPV

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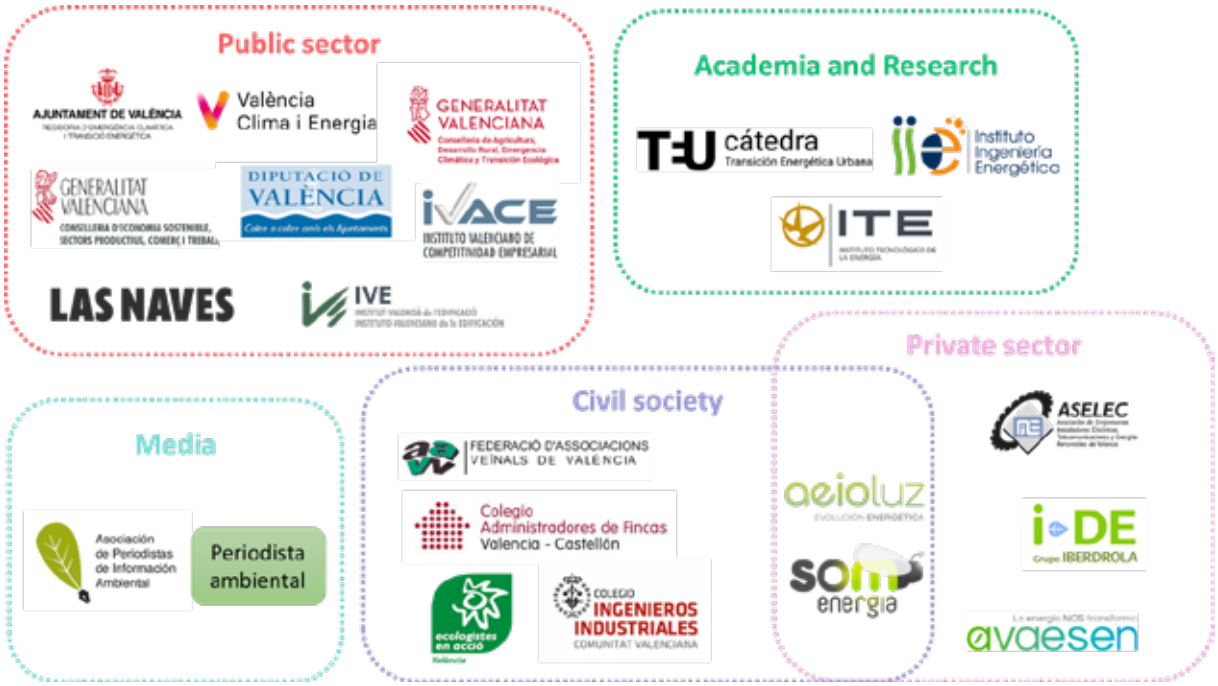


Figure 1 – Participatory entities on the Energy Transition Board

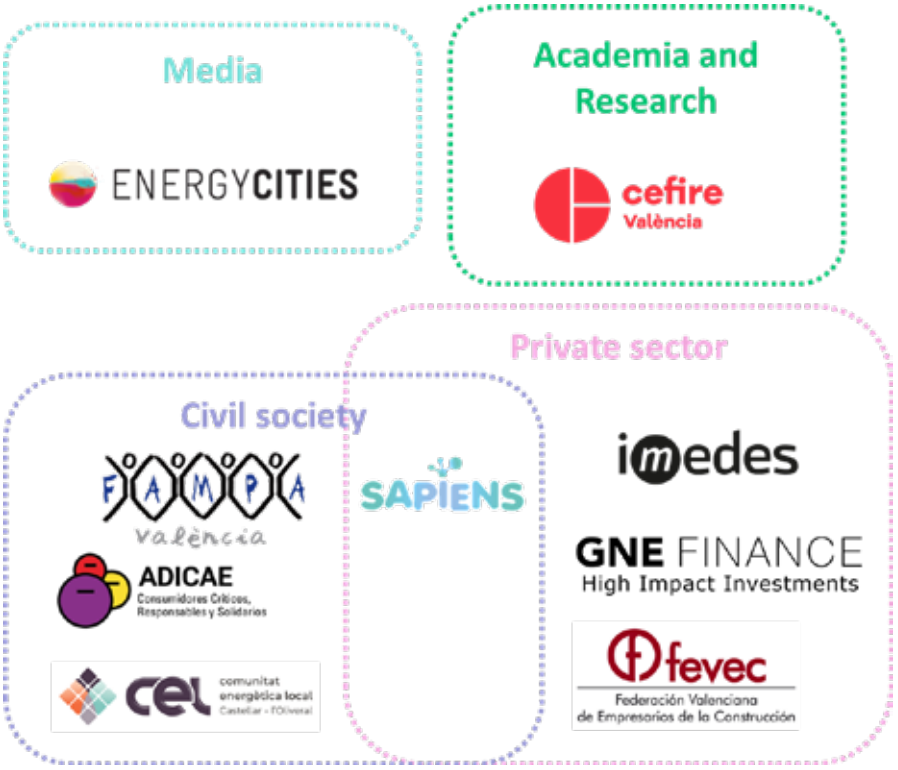


Figure 2 – Participatory entities in the Demonstration Project Commissions

INTRODUCTION

1

València 2030+ Urban Strategy

The Fair and Inclusive Energy Transition Strategy is part of the València 2030 Urban Strategy, a wider exercise that seeks to rethink **the city model of València** in order to adapt it to the new realities and anticipate the changes that are about to take place in the next decade. This city framework seeks to create a space for reflection, deliberation and shared action in order to integrate the approaches of the various public, private, social, citizen, academic and cultural institutions and entities on the future of the city.

The Urban Strategy, recently approved and published, offers a mid- and long-term and broadly agreed vision that addresses the problems of the real city and that provides a holistic perspective and emphasizes cross-cutting elements. But, above all, it has included strategic planning in the way of working on the city's challenges with a living and flexible plan, able to adapt to increasingly rapid and disruptive changes.

The process has been developed with a spirit of collaboration and dialogue between agents in order to integrate a wide spectrum of visions about the present and the future of the city. Thus, planning is conceived as an **action-planning process** supported by demonstration projects (lines of action) to develop innovative strategies that allow us to face the great collective challenges of the city and its metropolitan area.

València's strategic framework places people at the centre, as the beginning and end of the whole process. On them and on their needs and expectations, the views of València are incorporated that represent that aspiration for a city model dreamed of for València that aims to be a legacy for the future generation. The views of València recognize our idiosyncrasy, our values and our way of seeing and living life and aspire to rethink València as a **healthy, sustainable, shared, prosperous and entrepreneurial, creative and Mediterranean** city.

About the people and views in València, the **twelve strategic lines** are incorporated to transform the city, one of them being the fair and inclusive energy Transition. These strategic lines guide and serve as inspiration and guidance for the formulation of public policies of local governments and for the design and implementation of demonstration projects.

These **demonstration projects** make it possible to articulate solutions to the identified challenges in practice and to demonstrate the path that must be followed to achieve the strategic objectives. These transformative projects are promoted both from the public and private spheres and are an essential part of the city's strategic framework because they give dynamism to the process from a planning-action approach.

Finally, the strategic planning of the city incorporates the perspective of innovation as a transversal element and has a **mission orientation**. Global missions for the transformation of the city that will have to be widely agreed upon and that aspire to align the set of public policies and private initiatives to bring together efforts in favour of the city model to which we aspire.

Therefore, the 6 lines of action picked up in this Fair and Inclusive Energy Transition Strategy are picked up in the València 2030 Urban Strategy, mainly in its Program 4: Energy Transition.

València 2030 Climate Mission

The European Commission has proposed as a mission to achieve **100 climate-neutral European cities before 2030 for (and for) citizens.** Its objective is none other than to facilitate, promote and demonstrate how 100 European cities can progress, through a systemic transformation, towards climate neutrality before 2030, knowing that the global European objective is set for 2050.

València responds to this call with the **València 2030 Climate Mission**, which aims for the city to lead the fight against climate change at European level, being one of the first 100 European cities to be climate neutral. This Climate Mission began with the Missions València 2030 initiative, which proposed that the city's innovation model be oriented towards missions that improve people's lives. This strategic framework of innovation follows the postulates established by the European Commission through its Horizon Europe 2021-2027 framework and culminated its institutional maturity and social involvement with its approval at the Plenary of the City Council on May 28 2020 with the support of the entire government and the main opposition parties, 31 votes in favour of 33 possible.

In January 2022, the City Council Plenary approved its commitment to the València 2030 Climate Mission to move towards climate neutrality in 2030, with broad consensus from the government and the opposition. In April 2022, València was effectively chosen as one of the 100 European cities to be climate neutral by 2030.

The European Commission proposes for the 100 chosen cities, the signature of a **City Climate Contract** as a new mechanism to deploy the support of the European Union. The climate contract will be signed by the mayor or mayoress of the city, the European Commission and regional and national governments.

In addition, citizens have a special relevance in the climate mission because the success of the mission will depend on the role of people, who will have to play an active and leading role with new platforms to act and better resources to do so. The idea is to implement communication and awareness campaigns, along with participative processes that manage to encourage citizen participation and involvement in the decarbonization of the city.

For this reason, **l'Aliança per la Missió Climàtica** (the Alliance for the Climate Mission) is created. This initiative seeks to unite the commitment and join the efforts of the entire city towards the Mission of making València a climate-neutral city in 2030. In this way, the Alliance reflects the social support towards the Mission, it reflects that the whole citizens, private companies,

public administrations, social organizations, academic centres and the media are united and committed to a joint Mission.

The Alliance also allows efforts to be coordinated around demonstrative and transformative projects in the city, so that multiplier effects are achieved. It allows tools, information and support to be given to each involved party according to their needs and capabilities, so that all necessary parties are involved and mobilized, in accordance with their corresponding responsibilities. In this way, they aim to achieve systemic and radical changes in the city, which are led and enjoyed by their neighbours.

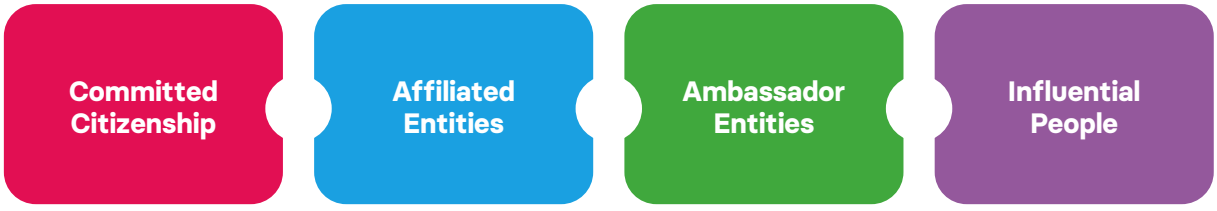
This Alliance has 4 different levels of participation:

- **Committed Citizenship:** it is the central part of the Alliance and the key to the success of all the initiatives defined in this Strategy. Citizens have the real power to achieve radical and lasting changes, through changes in the way they consume, the way they move, the way they produce and manage energy or the way they relate to the environment. Any citizen can become part of the Alliance through the commitment form on the Alliance website.

- **Affiliated Entities:** they are all those entities that contribute to making València a more sustainable city through changes and voluntary actions in its daily operation, its business models and its operations. Any company, platform, association, neighbourhood group, non-profit entity or organization can join the Alliance by filling out a commitment form on the Alliance website.

- **Ambassador Entities:** they represent the Alliance for their commitment to the energy transition and the sustainability of the city. Its contribution to the decarbonisation of the city is ambitious, clear and is specified through the signing of specific and personal commitments by each entity.

- **Influential People:** they are people known and loved by valencian society, who create and fight for a more sustainable world. These people have the ability and, also, the responsibility, to get their message across to a large part of Valencian citizens. They act, therefore, as loudspeakers of the Mission, bringing the message to the population and inspiring more entities and people to be part of it.



Picture 1 – The four levels of the Climate Mission Alliance

Project TOMORROW

TOMORROW is a European project of the program Horizon 2020 that seeks to promote the Energy Transition of different European cities towards a decarbonized, fair, democratic, sustainable and renewable model. The project guides several cities in the development of their itineraries for the Energy Transition towards 2050, in an open and collaborative way with citizens and all the entities of the city.

The project is coordinated and led by Energy Cities, a European network of leading cities in the Energy Transition, of which València is part of the Board of Directors. In addition, the project has the participation of Drift (Dutch research institute) which provides methodological support to cities in their transition processes. The partner cities that act as pilots of the project are Moucron, Dublin, Brest, Nis, Brasov and València, which is represented through the València City Council and València Clima i Energia.

The methodology followed by the project consists of 5 phases:

· **Learning and analysis:** develop methodological tools for pilot cities, analyse success stories from other European cities and study the needs and context of each pilot city.

· **Development and participation:** implement participatory processes to involve citizens and entities, develop energy transition strategies and start implementing them.

· **Review and recommendations:** evaluate the work done by pilot cities, review and improve methodological tools and produce policy recommendations.

· **Escalation:** motivate other cities to implement their transition processes following the methodological tools, the example of the pilot cities and the political recommendations developed.

· **Training:** train public employees in the pilot cities and develop their capacities to facilitate transition processes with citizen participation.

Therefore, the project aligns with the city's 2030 Urban Strategy, and allows València to design its energy strategy in a participatory and consensual manner with all citizens and interested parties. At the same time, TOMORROW offers an opportunity for València to advance its positioning as a leading city at European level in the fight against climate change and the promotion of a new, fairer, renewable and citizen-friendly energy model.

Background of the energy transition in València

València initially signed the **Pact of Mayors** in 2009, with the commitment to reduce greenhouse gas (GHG) emissions by 20% by 2020 through the approval of an Action Plan for Sustainable Energy (APSE). The objectives were ratified in 2011 with the publication of the Climate Change Strategy València 2020, the result of integrating two previous plans the Environmental Action Plan - which is part of the process Local Agenda 21 - and the APSE itself

In 2016, the **València City Council's energy diagnosis** is published (the objective is to improve its energy and economic efficiency), as well as the first mapping of energy poverty in the city of València and a feasibility study for direct purchase of energy by the City Council.

In 2017, an inventory of 2014 reference emissions, an assessment of risks and vulnerabilities arising from climate change and an **Adaptation Plan** were drawn up; also in 2017, the process of drawing up the **Climate and Sustainable Energy Action Plan (CSEAP)** began, following the methodology developed at European level.

In 2018, an update to 2016 of the baseline emissions inventory was carried out and in March 2019 the city's **CSEAP** was approved with its commitments and action plan to 2030. Shortly afterwards, in September 2019, the City Council, as part of joining the initiative promoted by the Climate Emergency Alliance, declared a climate emergency.

In 2020, the **Itinerary for the energy strategy of València 2020-2030** was prepared and in April 2021 an update was carried out of the inventory of reference emissions and of the implementation status of the Action Plan for the Climate and Sustainable Energy of the city.

In January 2022, the **València 2030 Climate Mission was approved,** with which the city presented its candidacy for the Mission of the 100 climate-neutral and smart European cities by 2030. In April 2022, València to be effectively chosen as one of the 100 selected cities on the continent.

Finally, in September 2022, the city approved its **València 2030+ Strategy**, which includes the demonstration projects defined in this Fair and Inclusive Energy Transition Strategy.

In relation to **working groups**, apart from the Energy Transition Board and the Commissions for Demonstration Projects created within the framework of this Strategy, it should be emphasized that València has other spaces for coordination and joint work that fulfil different functions:

· **Energy team of València City Council:** working group formed in 2016 with the aim of making and updating the energy diagnosis of València City Council itself, to improve its energy and economic efficiency.

· **València City Council working group** for the energy transition: set up in December 2019 to coordinate, update and agree on the development of CSEAP with the different City Council services that are involved.

· **Red Connecta Energia:** formed by representatives of the 4 propellers around the right to energy, energy efficiency, renewable energies and energy culture. It seeks to pool actions, share experiences and take advantage of synergies in this area.

2

INVENTORY OF EMISSIONS IN VALÈNCIA

Objectives of the city in 2030

The objectives of València in relation to energy and the fight against climate change start from the vindication of the values and principles that frame that **energy is a right of the citizens**, a basic good, a public attribute that must prevail over other issues and interests.

In terms of commitments, the València 2030 Climate Mission, approved in January 2022, meant a very significant change in the city's decarbonisation objectives for 2030. This qualitative leap is aligned, however, with the declared climate emergency situation in 2019, as well as with the latest IPCC updates that point to a worse-than-expected scenario if the trend and efforts of the last decades continue.

In this context, València presented its commitment and vision of the future to be climate neutral in 2030, and it did so with a great political and social consensus. In April 2022, it was chosen as one of the 100 climate-neutral and smart cities of the European Union for 2030. Therefore, the goal in the short term is tremendously ambitious, to achieve a sustainable, self-sufficient city, emission-free and decarbonized in 2030.

In addition, this Mission must be done by and for the public, that is, promoting a just transition that includes the most vulnerable, allows for the reduction of social inequalities and has the public as the main driver of change.

Energy diagnosis and inventory of emissions in the city

The latest emissions inventory of València, published in 2021 with data from the year 2020, shows that energy consumption fell by 19.6% in the period 2007-2020 and greenhouse emissions were reduced by 20.5% in the same period.

Specifically, in 2020, a total of 7,800,977 MWh of energy was consumed in the city, causing the emission of 2,234,962 tons of CO2. The distribution of consumption and emissions by sector can be seen in the following figures, where it should be emphasized that 56% of consumption and 71% of emissions are caused by the private and commercial transport sector. In second and third place are the residential and service sectors, which together with transport, cover 94% of consumption and 92% of the city's emissions.

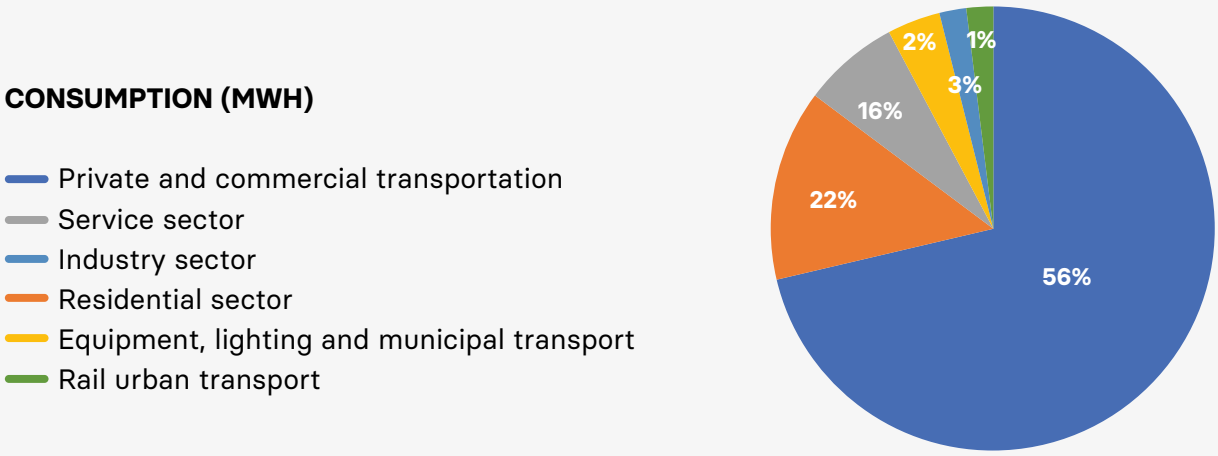


Figure 3 – Energy consumption in València in sectors, 2020. Source: València City Council.

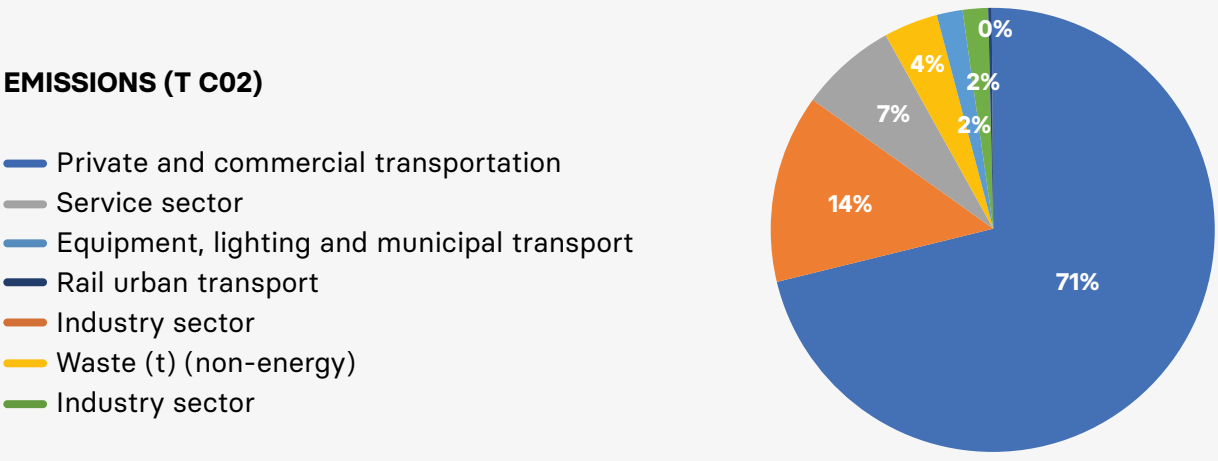


Figure 4 – tCO2 emissions in València in sectors, 2020. Source: València City Council.

Regarding the fulfilment of commitments, as can be seen in the consumption graph, in 2020 València was close to achieving the 20% energy savings goal set for that year. In addition, a gentle but clear trend of decreasing energy consumption is observed in the period 2017-2020, following the stagnation observed in the period 2013-2017, where part of the consumption lost during the first years of the crisis was recovered (2007-2013).

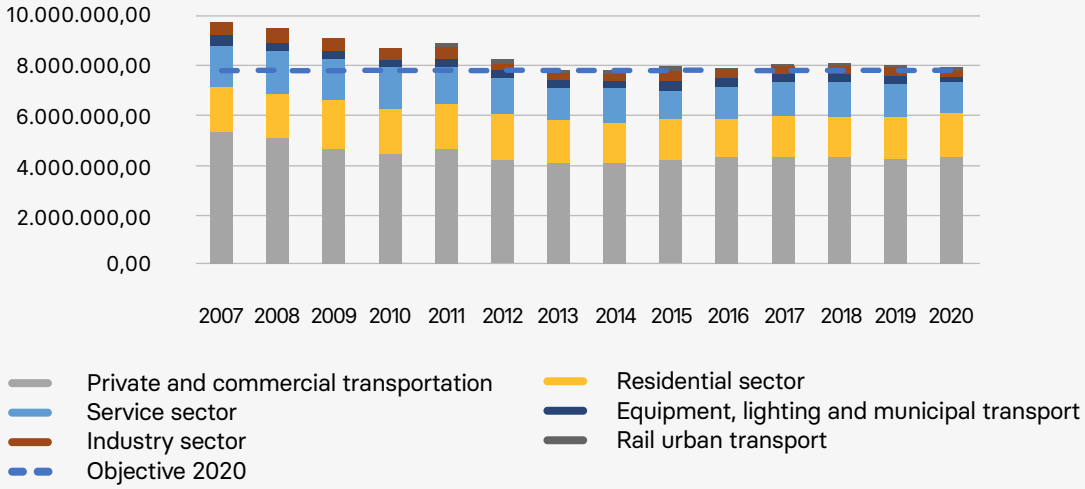


Figure 5 – Evolution of the consumption (MWh) in sectors 2007-2020. Source: València City Council

With respect to the emissions graph, a clear rise is observed in 2020, explained by the methodological changes applied to this latest inventory and explained in the following section. In fact, the data for the period 2012-2019 showed a reduction in emissions of around 30% compared to the reference year, above the 20% target set for 2020. However, the graph shows a worrying tendency towards stabilization during this same period, where there has been no recovery of the emissions saved during the first years of the crisis, but neither does a downward trend seem consolidated.

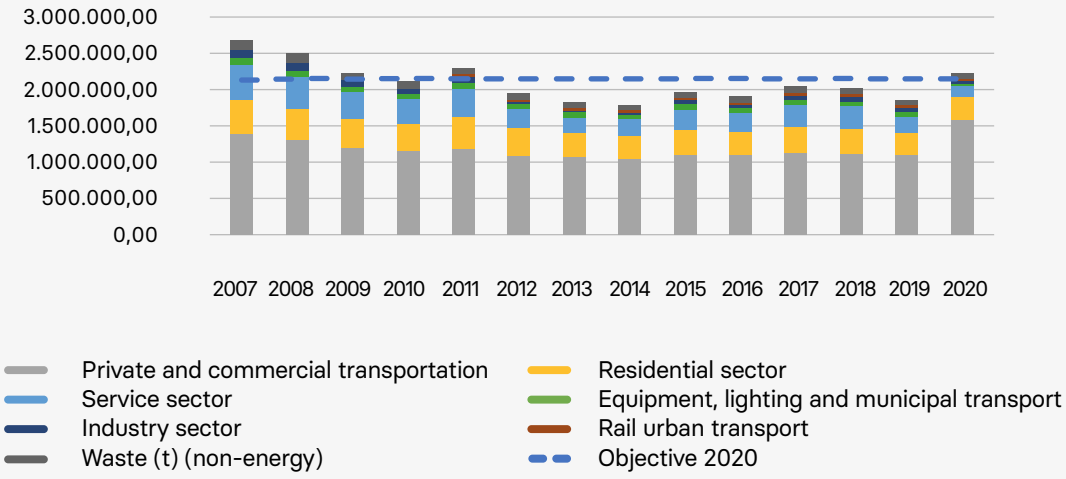


Figure 6 – Evolution of emissions (tCO2) in sectors 2007-2020. Source: València City Council.

Therefore, the different actions promoted in CSEAP, the efforts of the whole society, private projects, civil society initiatives, the impact of the economic crisis of 2008 and the technological and social changes of recent years, have served to significantly reduce the city's emissions and meet the goals set for 2020. However, the key decade for the fight against climate change is now beginning, marked by renewed goals and commitments of an ambition never seen before, in line with the commitments of the Paris COP and the new European Mission of the 100 climate neutral cities. It is therefore necessary to continue working to achieve the 2030 objectives, focusing action in sectors such as private transport, the residential sector and the services sector. The need to promote a joint action by the whole of society, beyond the municipal level, is becoming evident, in order to break with the stabilization achieved in recent years and deepen the reduction of emissions in an ambitious and lasting way.

Methodological clarification

When interpreting the data collected in this section, especially those referring to the historical evolution of emissions, it must be considered that in this latest inventory of the city's emissions there has been a series of methodological changes that have meant an increase in estimated emissions compared to previous years. These changes are summarized in:

- Specific estimations of greenhouse gas emissions other than CO2 have begun to be made. Specifically, Methane (CH4) and Nitrous Oxide (N2O) emissions have been specifically estimated. In this way, it has been verified that CO2eq emissions are higher than those estimated in previous inventories.

- In relation to this, refrigerant gases (HFCs) and their impact on greenhouse gas emissions (CO2eq) have also begun to be considered and estimated.

- The methodology for estimating the consumption and emissions of the private and commercial transport sector has been modified, to consider that it better fits the reality of the city, which has caused a considerable increase in the emissions attributed to this sector.

PARTICIPATORY PROCESS

3

Energy Transition Board in València

The Board is the reference group in the field of energy in València and seeks to be a space for reflection, consensus and work to democratize decision-making and make the definition of the strategy, objectives, plan collaborative of action and city projects in relation to energy. The participants meet, with a variable frequency depending on the needs, with the following objectives:

· Leading the participatory definition of València's Just and Inclusive Energy Transition Strategy.

· Defining and promoting all the necessary steps to establish and expand the Alliance for the Climate Mission, encouraging the involvement of the entire city.

· Leading the definition and collaborative development of demonstration projects for the city's energy transition, based on the Demonstration Project Commissions.

Picture 2 – Meeting of Energy Transition Board

· Collaborating with other urban strategies and working groups in climate change mitigation and adaptation.

· Generating a space for reflection, consensus and analysis formed by all the propellers of the energy ecosystem.

The structure of the Energy Transition Board is made up of the technical secretariat, members and external advisors. Currently, the technical secretariat falls to València Clima i Energia, as voted by the Board itself. The functions of this secretariat are to take the initiative in proposing the lines of work, guide the discussions, take charge of the organizational aspects of the meetings, energize the meetings and discussions, and coordinate with the Steering Committee of the strategy and the rest of the working groups.

On the other hand, 22 people are part of the Board as members, 6 of them from the local and regional public sector, 2 from the academic world, 5 from the business or cooperative field, 4 from organized civil society, 2 of the media and 3 intermediary entities, as shown in the following table:

	Institution	Category
1	Fundació València Clima i Energia	Government (Local)
2	Ajuntament de València	
3	Dirección General Cambio Climático Generalitat Valenciana	Government (Regional)
4	Dirección General de Energía Generalitat Valenciana	
5	Dirección General Transición Ecológica Generalitat Valenciana	
6	Diputació de València	
7	Red Conecta Energía – Las Naves	Intermediary
8	Institut Valencià de l'Energia (IVE)	
9	IVACE Energía	
10	Cátedra Transición Energética - Universitat Politècnica de València	Academy
11	Instituto Tecnológico de la Energía	
12	AVAESEN	Private Enterprise
13	ASELEC (Asociación de Empresas Instaladoras)	
14	Iberdrola distribución (I-DE)	
15	Aeioluz	Civil Society (Coop.)
16	Som Energia València	
17	Ecologistes en Acció País Valencià	Civil Society
18	Federación de Asociaciones de Vecinos y Vecinas de València	
19	Colegio de Ingenieros Industriales de la Comunitat Valenciana	
20	Colegio de Administradores de Fincas de València y Castelló	
21	Asociación de Periodistas de Información Ambiental	Media
22	Periodista	

Table 2 – Members of the Energy Transition Board

Picture 3 – Energy Transition Board Teamwork

Finally, different experts have been invited to the Bureau as external advisors. These experts guide the Board in different subjects and serve as inspiration for its work, presenting projects and initiatives that may be of interest to the Board and offering a space for debate with the members. Some of these expert entities are: Fundación Renovables, Energy Cities, the Polytechnic University of Madrid, Barcelona City Council or Sapiens Energia.

The Energy Transition Board, therefore, is the body that has developed and validated in a consensual and collaborative manner the contents, objectives, action plan and projects of this Just and Inclusive Energy Transition Strategy. Specifically, he has carried out the following work sessions, as indicated in Figure 5.

1. Presentation of the group and its objectives: summary of the antecedents of the energy transition in València. Presentation of the members invited to the ETB and open dialogue around the expectations of the participants, the added value of the working group and the practical keys to take into account for its efficient operation.

2. Validation of the group and work on challenges: definition and validation of the constitution document of the working group for approval by the Board of Governors. Presentation of the city's energy diagnosis and the itinerary for decarbonisation. Group work to identify the major challenges of the energy transition in the city.

3. Project identification: presentation of European strategies and experiences regarding the energy transition of cities. Validation of the teamwork plan and milestones for the next 18 months. Identification of demonstration projects.

4. Classification and evaluation of demonstration projects: presentation of the European Mission of 100 climate-neutral and smart cities by 2030. Demonstration project workshop to identify barriers, opportunities, key players and select the 6 priority demonstration projects for to the group.

5. Demonstration project itinerary: workshop to define the objectives of each project towards 2030 and positioning along the timeline of the actions necessary to achieve these objectives. 6. Communication strategy: experiences and good communication practices about energy in European cities. Work in groups on the communication strategy needed to talk about energy transition in the city. Proposal and vote on the name of the working group: Energy Transition Board.

7. Commitments and citizen participation: examples of citizen participation in European cities. Workshop to define citizen participation actions related to energy and sustainability. Definition of citizen commitments in this area.

8. Demonstration Projects Commissions Constitution: creation of the Commissions to work on the 6 demonstration projects in depth and workshop to define their mode of operation, periodicity, objectives, etc.

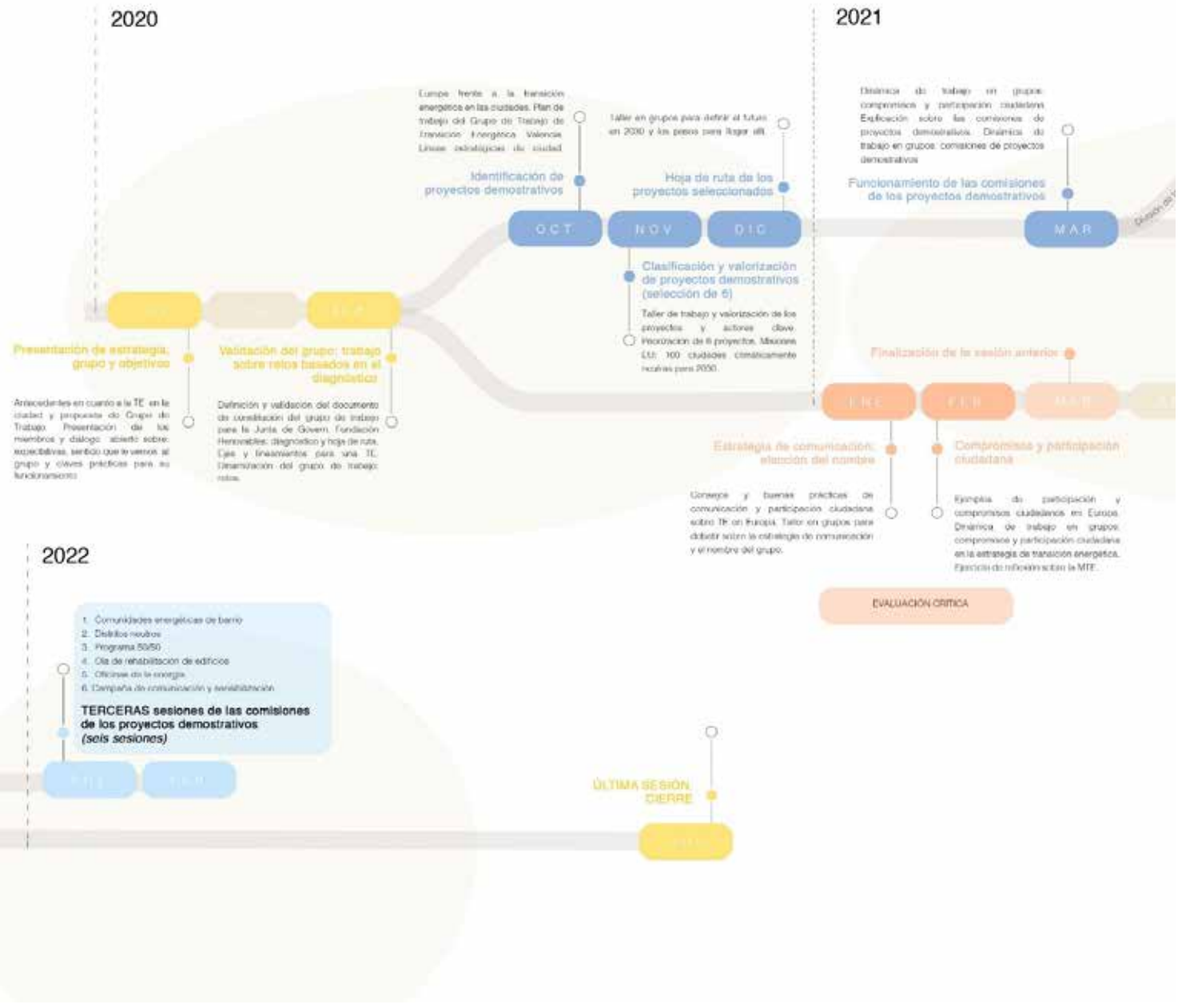
9. Brand and communication plan: workshop to propose ideas related to the brand and the communication plan of the Fair and Inclusive Energy Transition Strategy and of the Energy Transition Board itself. We work on what, why, when, who, how and where to communicate.

10. Return of the first Commissions: return of the work done in the first round of meetings of the 6 Demonstration Project Commissions. Collective evaluation of the work achieved so far in the ETB and the Commissions and reflection on future expectations.

11. Return of the second Commissions: return of the work done in the second round of meetings of the 6 Demonstration Project Commissions. Reflection on the role of ETB within the Climate Mission, the València 2030+ Strategy and the development of demonstration projects. Planning possible objectives and operations for the ETB in the medium term.

12. Return of the third Commissions: return of the work done in the third round of meetings of the 6 Demonstration Project Commissions. Evaluation of the final result achieved by the Commissions and the ETB. Workshop to decide the operation and objectives of the ETB and the Commissions in the future**.**

Picture 4 – Miro Panel of the work done in the Energy Transition Board


2020
2021
Cumpe frente a la transición energética en las ciudades. Plan de trabajo del Grupo de Trabajo de Transición Energética Valencia. Líneas estratégicas de ciudad.
Identificación de proyectos demostrativos
Taller en grupos para definir el futuro en 2030 y los pasos para llegar allí.
Hoja de ruta de los proyectos seleccionados
Dinámica de trabajo en grupos: compromisos y participación ciudadana. Explicación sobre las comisiones de proyectos demostrativos. Dinámica de trabajo en grupos: comisiones de proyectos demostrativos
Funcionamiento de las comisiones de los proyectos demostrativos
OCT
NOV
DIC
MAR
Clasificación y valorización de proyectos demostrativos (selección de 6)
Taller de trabajo y valorización de los proyectos y actores clave. Priorización de 6 proyectos. Misiones UE: 100 ciudades climáticamente neutras para 2050.
Presentación de estrategia, grupo y objetivos
Antecedentes en cuanto a la TE en la ciudad y propuesta de Grupo de Trabajo. Presentación de los miembros y diálogo abierto sobre expectativas, sentido que le vemos al grupo y claves prácticas para su funcionamiento
Validación del grupo: trabajo sobre retos basados en el diagnóstico
Definición y validación del documento de constitución del grupo de trabajo para la Junta de Govern. Fundación Renovables, diagnóstico y hoja de ruta. Ejes y lineamientos para una TE. Dinamización del grupo de trabajo: retos.
Finalización de la sesión anterior
Estrategia de comunicación: elección del nombre
Consejos y buenas prácticas de comunicación y participación ciudadana sobre TE en Europa. Taller en grupos para debatir sobre la estrategia de comunicación y el nombre del grupo.
Compromisos y participación ciudadana
Ejemplos de participación y compromisos ciudadanos en Europa. Dinámica de trabajo en grupos: compromisos y participación ciudadana en la estrategia de transición energética. Ejercicio de información sobre la MTE.
EVALUACIÓN CRÍTICA
2022
1. Comunidades energéticas de barrio
2. Distritos neutros
3. Programa 50/50
4. Ola de rehabilitación de edificios
5. Oficinas de la energía
6. Campaña de comunicación y sensibilización
TERCERAS sesiones de las comisiones de los proyectos demostrativos
(seis sesiones)
ÚLTIMA SESIÓN CIERRE

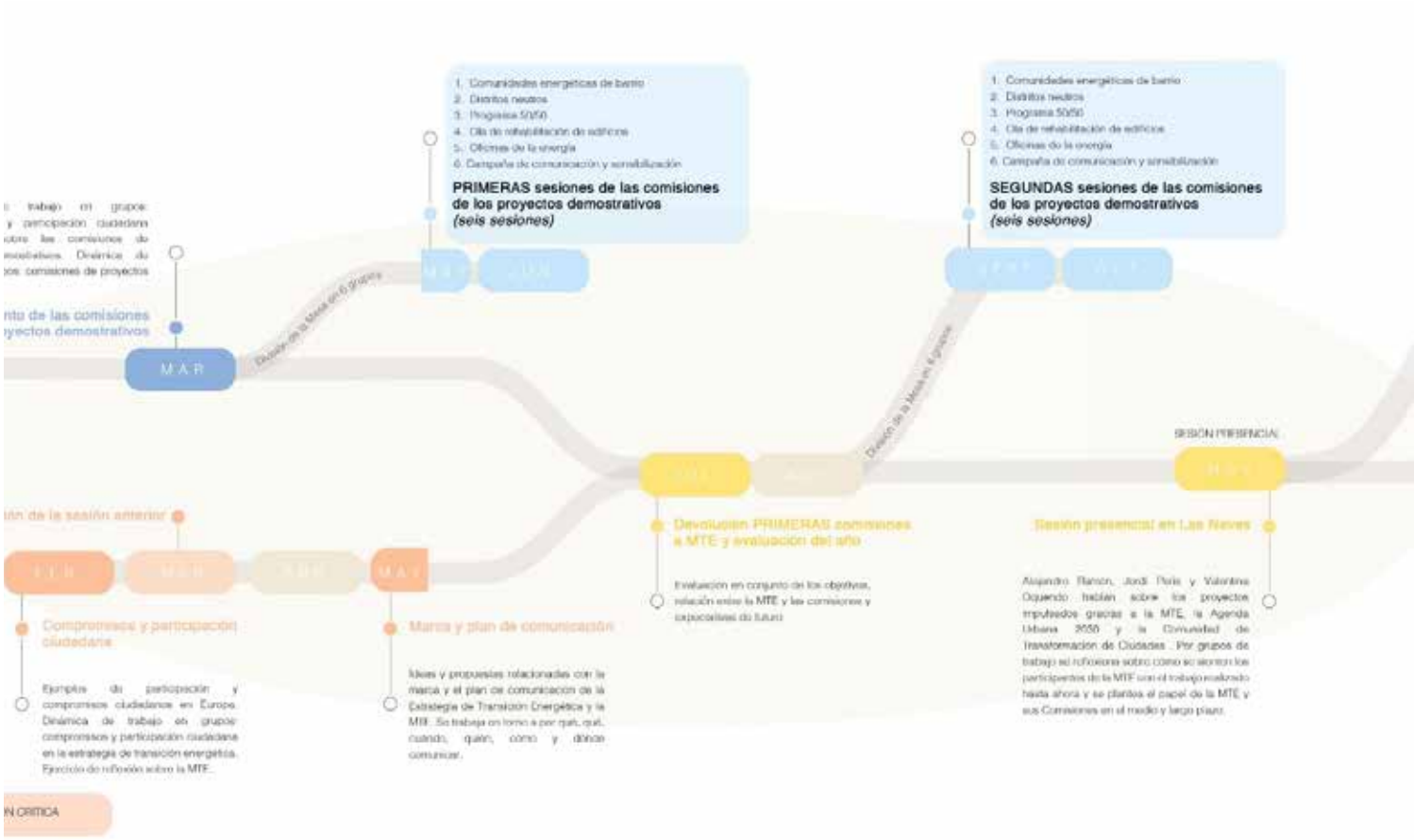


Figure 7 – Work Schedule of the ETB and its Commissions

Demonstration Project Commissions

Demonstration Project Commissions are working groups that arise as a necessity of the Energy Transition Board to be able to work on specific projects in more detail. Specifically, the Board defined 6 demonstrative projects as the most relevant and transformative projects of the city's energy model, as well as representative of the new model that is sought to be promoted:

1. Deployment of Energy Offices
2. Wave of energy renovation of buildings
3. 50/50 program for public and private entities
4. Carbon Neutral District
5. Neighbourhood Energy Communities
6. Massive energy culture campaign

In order to collaboratively define each of these demonstration projects, it was decided to set up a Commission, made up of members of the Board who voluntarily wanted to deal with this project, and other external entities that were considered interesting to add to the discussion. Specifically, 9 new entities participated in one or more of the Commissions, 1 of them with a communication expert profile, 1 from the educational field, 4 from civil society and 3 from the private field.

	Institution	Category
1	CEFIRE València	Academy
2	IMEDES	Private Enterprise
3	GNE Finance	
4	FEVEC (Federación Valenciana de Empresarios de la Construcción)	
5	Sapiens Energía	Civil Society (Coop.)
6	Federación AMPAs València	Civil Society
7	Comunidad Energética Local Castellar-L'Oliveral	
8	ADICAE - Consumidores Críticos, Responsables y Solidarios	
9	Energy Cities - communication expert	Media

Table 2 – extra members of the Demonstration Project Commissions

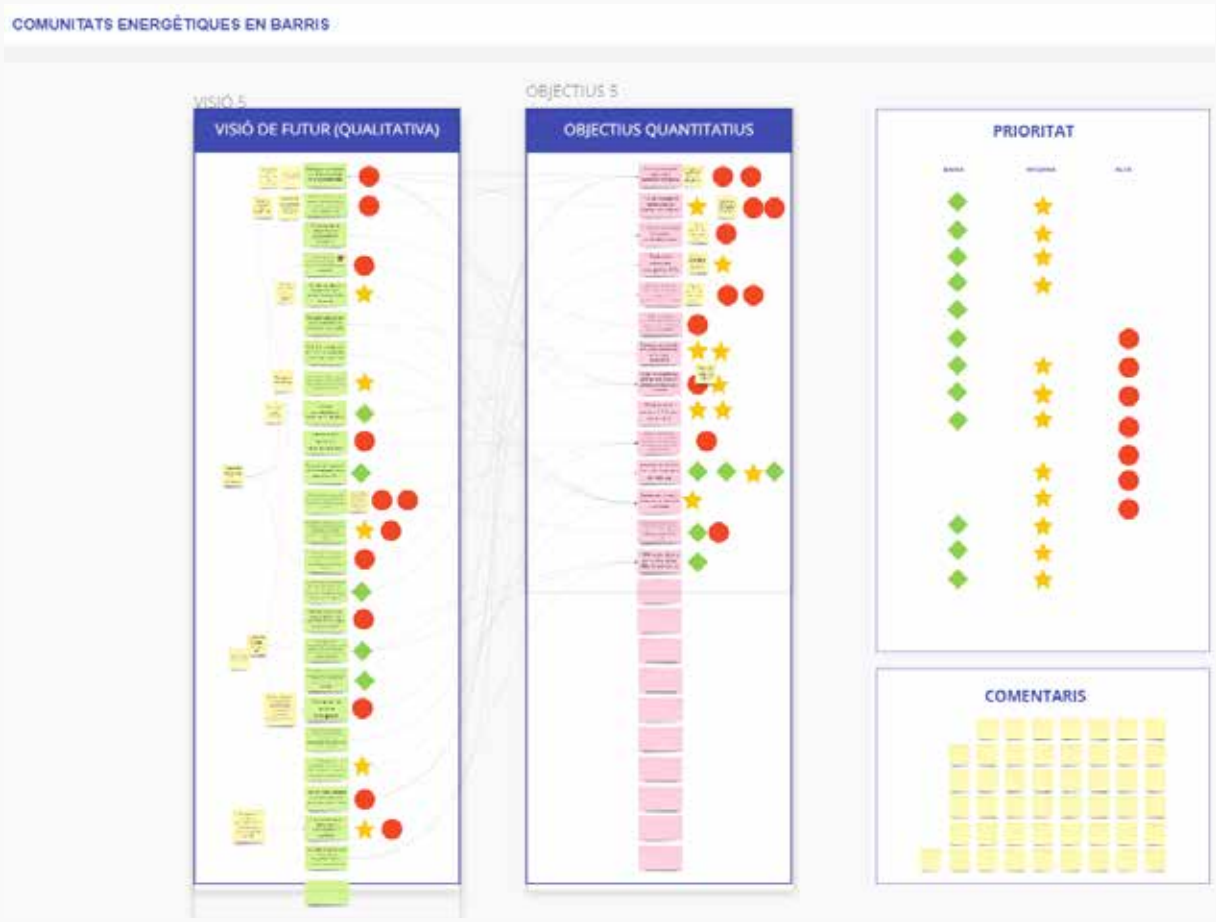
These Commissions, therefore, comply with the spirit of planning-action of the Strategy, since they focus on projects that can be defined and developed in the short and medium term, while following the line of democratization of decision-making, since they allow more entities to continue to be included in the discussions and corresponding working groups.

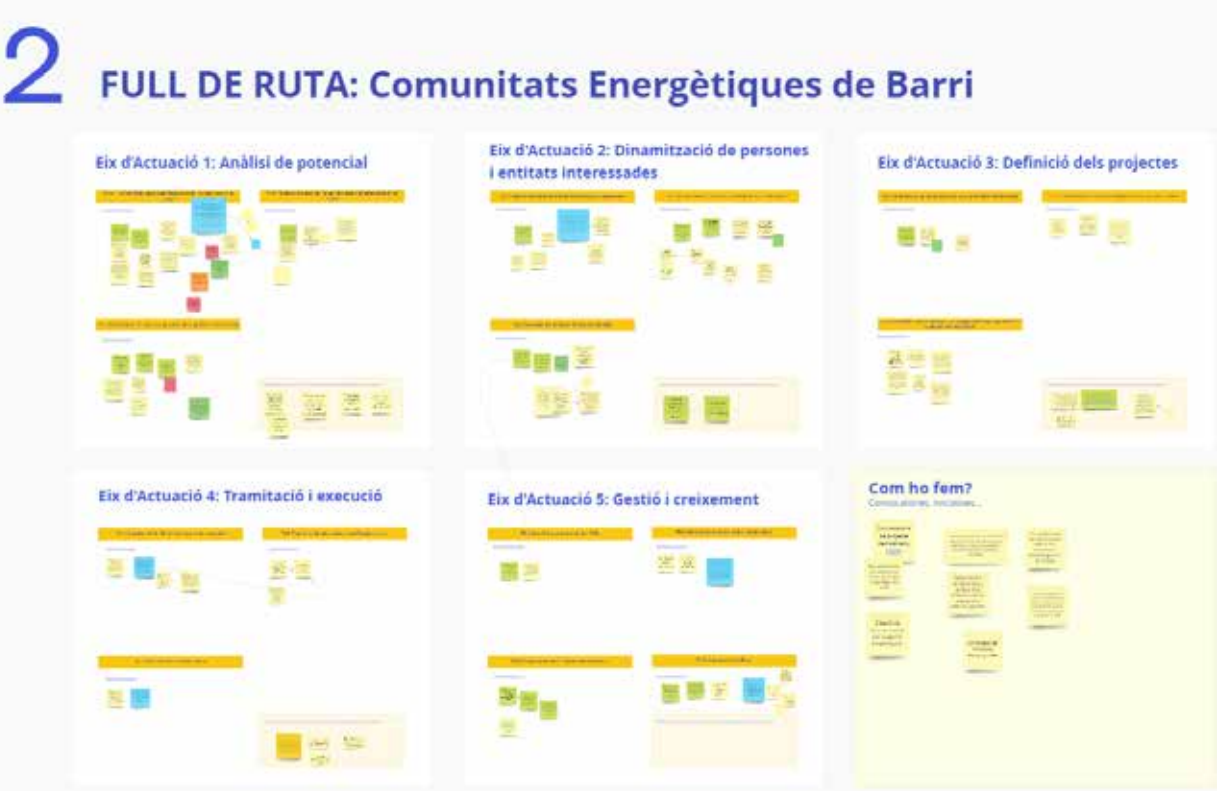
Therefore, there are 6 Commissions, each linked to one of the demonstration projects described in this Strategy. Each Commission has been responsible for defining and validating the content of its project. Specifically, as shown in Figure 5, each Commission held 3 joint work sessions, where the following aspects were defined:

1. Starting point and analysis of the context: review and validation of the final report that is to be produced with the work of the Commission. Identification of relevant actors to invite to participate in the Commission and to validate the results. Identification of similar initiatives to learn from and proposal of questions to transfer to these initiatives. Selection of a spokesperson for the Commission.

2. Definition of project objectives: invitation to promoters of initiatives like the project studied, to learn from them and their experience. Definition of the project's objectives in 2030, both qualitative (vision of the future) and quantitative (key indicators).

3. Definition of the project itinerary: definition of the project action plan to achieve the previously defined objectives. Proposal of axes of action, tasks and financing mechanisms to carry out the project.





Picture 5 – Miro Panel of the Demonstration Project Commissions work

València Change for the Climate!

València Change for the Climate! is an initiative of the València City Council that seeks to publicly highlight all the proposals and actions that are proposed and developed in the city in favour of the energy transition and to deal with the consequences of climate change.

In 2020, the third consecutive year in which the event was held, Alliance for a sustainable city was chosen as the motto, as it was intended to emphasize the need to strengthen València's social structure, a citizen structure, informed, proactive and interconnected to be able to carry out the transition towards the model of a city free of emissions and pollution, green, healthy, integrative, supportive and tailored to people. In short, a city for a democratic, fair and equitable society.

Thus, on March 4 there was the objective, among others, of launching the participatory process of the Fair and Inclusive Energy Transition Strategy of the city. On this first day, guidelines and opportunities for the Strategy were analysed, identified and agreed upon, from the point of view of organized civil society and activism.

The main results and conclusions of the workshop are summarized below. The complete results of the day can be consulted in this document: https://climaienergia.com/wp-content/uploads/2020/05/VCC-040302020-LN-Informe-de-Resultados_web.pdf

The workshop had the participation of 23 people and the objectives were four:

1. WHAT? Assessing the city's challenges in energy transition and how progress is being made, giving continuity to previously approved objectives and lines of action.

2. HOW? Proposing specific actions that civil society and activism can develop to influence the challenges posed.

3. WHO? Encouraging citizen participation in the city's energy transition and map the actors of organized civil society and the activism to be involved.

4. Share a vision of the city, framed in the European project TOMORROW.

Following previous participatory processes, and due to time constraints, the workshop focused on two challenges of the city's energy transition:

- Generating and consuming renewable energy locally.

- Guaranteeing the right to energy for all people.

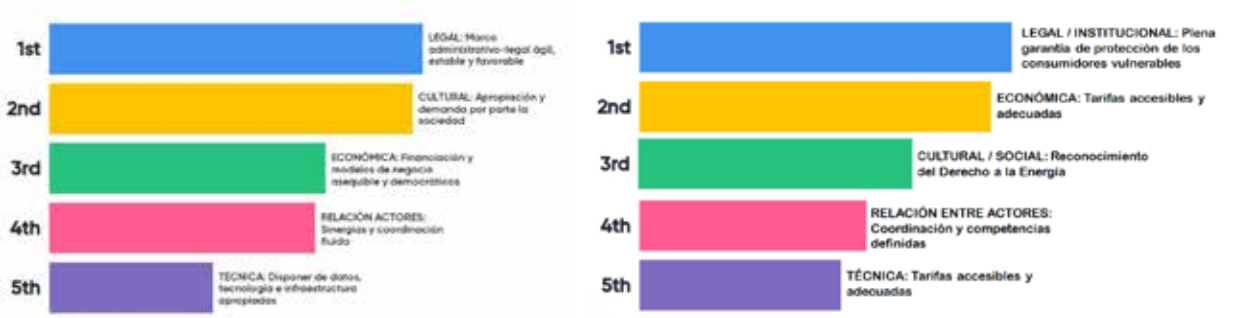
Objective WHAT? Assessing the city's challenges in energy transition and how progress is being made, giving continuity to previously approved objectives and lines of action.

For each challenge, previous participatory sessions had defined 5 sub-challenges, according to their technical, social, institutional/legal, economic and relationship dimensions between the actors. With this starting point, the following exercises were considered:

· Scoring from 1 to 5 the current degree of achievement of each of the sub-challenges. "How successful do you think each sub-challenge is in València?".

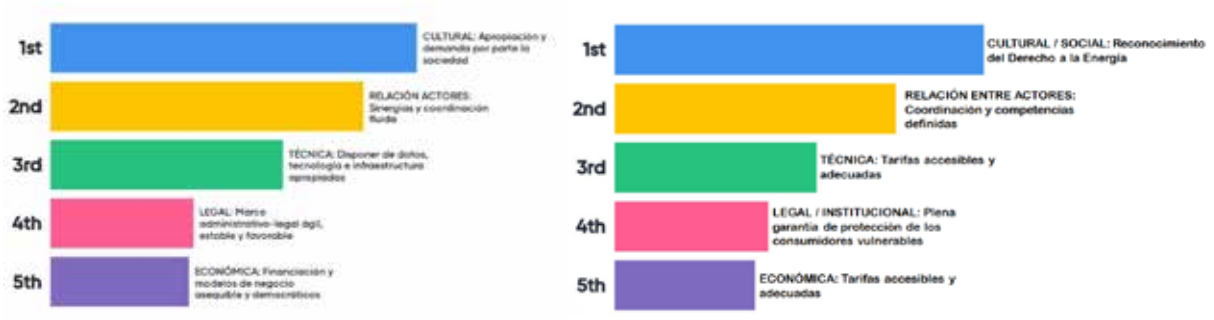
Picture 6 – Results of the dynamic València Change for the Climate! 1

· Sorting the 5 sub-challenges by degree of relevance in order to achieve the proposed challenge. "Prioritize the sub-challenges in order of relevance in València".



Picture 7 – Results of the dynamic València Change for the Climate!

· Sorting the 5 sub-challenges according to the contribution capacity of civil society and activism in each of them. “As an actor in civil society and/or activist, where can you contribute more?”



Picture 8 – Results of the dynamic Valencia Change for the Climate! 3

Objective HOW? Proposing specific actions that civil society and activism can develop to affect the challenges raised.

Based on this analysis of the starting situation, the second work block focused on openly debating the question How can the organized citizenship and activism affect the different sub-challenges defined above?

For challenge 1 of renewable energy generation, the following solutions were proposed:

- **Awareness and training**

The need to organise at different levels (from the personal level to the level of the whole city and political decision-makers) was raised:

· Promoting photovoltaic energy on a personal and community level: at work, among neighbours, in groups of acquaintances and friends, etc.
· Demanding and promoting communication and awareness campaigns (in the city, and also in the neighbourhoods).
· Contributing to the community and neighbourhood structure (to create neighbourhood structures that act as speakers for renewable generation; seconding the existing one, such as the Falles, and supporting incipient initiatives).
· Generating spaces and working groups (between the different actors at the city and metropolitan area scale).
· Training people who make decisions (decision-makers in public administrations).

An issue shared by the majority is that it is necessary to get the local renewable generation to have a greater presence in the neighbourhoods, working with the already existing organized citizens so that the awareness strategy is capillary and reaches many more people than now.

· Political pressure

Requiring the City Council to set an example with the self-production and self-consumption of photovoltaic energy. These facilities - mainly those located in educational centres and municipal buildings visited by the public - can be used in awareness and education actions.

· Encouraging the creation of a renewable energy observatory.
· Make a political impact, through meetings and vindictive acts, mainly in 3 areas:
    · Demanding a favourable, agile and stable legal and regulatory framework.
    · Demanding that ambitious decisions be taken, in line with the existing climate emergency situation.
    · Asking for responsibilities and that the responsibilities of the private sector are defined and controlled from the public administration.

The general feeling in this debate was that more ambition was needed on the part of the Administrations, and that they had to redouble their efforts to remove administrative and regulatory obstacles for those who want to generate energy autonomously.

In general, it was criticized that the actions taken are not consistent with the recent climate emergency declarations, at national, regional and local level.

· Pilot projects

· Creating a database for neighbourhoods and/or districts where citizens report their energy consumption and actual or potential renewable energy production. So that you can take advantage of e.g., to create energetic communities in the neighbourhoods.

· Creating a municipal web page that contains all the legal and administrative requirements that a citizen must know if she wants to process an installation.

· Promoting and participate in pilots (following a cooperative model) that provide real results and solutions; e.g., energy communities.

A shared idea is that the pilots make it possible to visualize the potential and real results of local renewables for the public, and thus encourage them to appropriate it.

Several participants emphasize the idea that citizens, in a particular and organized way, must be directly involved in the development of real projects, since this is the best way to raise awareness, sensitize and demand political ambition.

For challenge 2 of defending the right to energy, the following solutions were proposed:

· Awareness and training

· Carrying out awareness-raising actions that defend the right to energy for all people, as a basic good to live a dignified life.
· Generating discourse and critical mass, making visible the injustices related to the energy world. Detecting and calling attention to unfair, undemocratic or untransparent practices and facts that occur in relation to energy, to encourage critical thinking on this subject.
· Educating and raising awareness through neighbourhood networks: associations, educational centres, schools...
· Contributing to a change of discourse in the fight against energy impoverishment: from assistance to empowerment.
There is a clear consensus that activism must act as a figure that monitors and denounces social injustices and, in this way, encourages the strengthening of a conscious and critical movement that opposes the current energy model and promotes a fair, renewable, transparent and decarbonized model.

· Political pressure

· Demanding that public funds be dedicated to social and local projects, and that positive social impact criteria are always respected in projects and public contracts.
· Demanding legislative and administrative changes to defend energy as a constitutional right and effectively protect vulnerable people.
· Demanding that there be a figure within the City Council who leads the fight against energy impoverishment.
· Promoting agility among all actors in the defence of the right to energy and the fight against energy poverty.
· Demanding responsibilities from the public and private sector and that commitments are evaluated and fulfilled.
The participants emphasized that a determined political commitment is needed, with a figure who leads the defence of the right to energy and who exercises coordination between the different actors and sectors involved and who, in addition, makes sure that the commitments made are fulfilled.

· Pilot projects

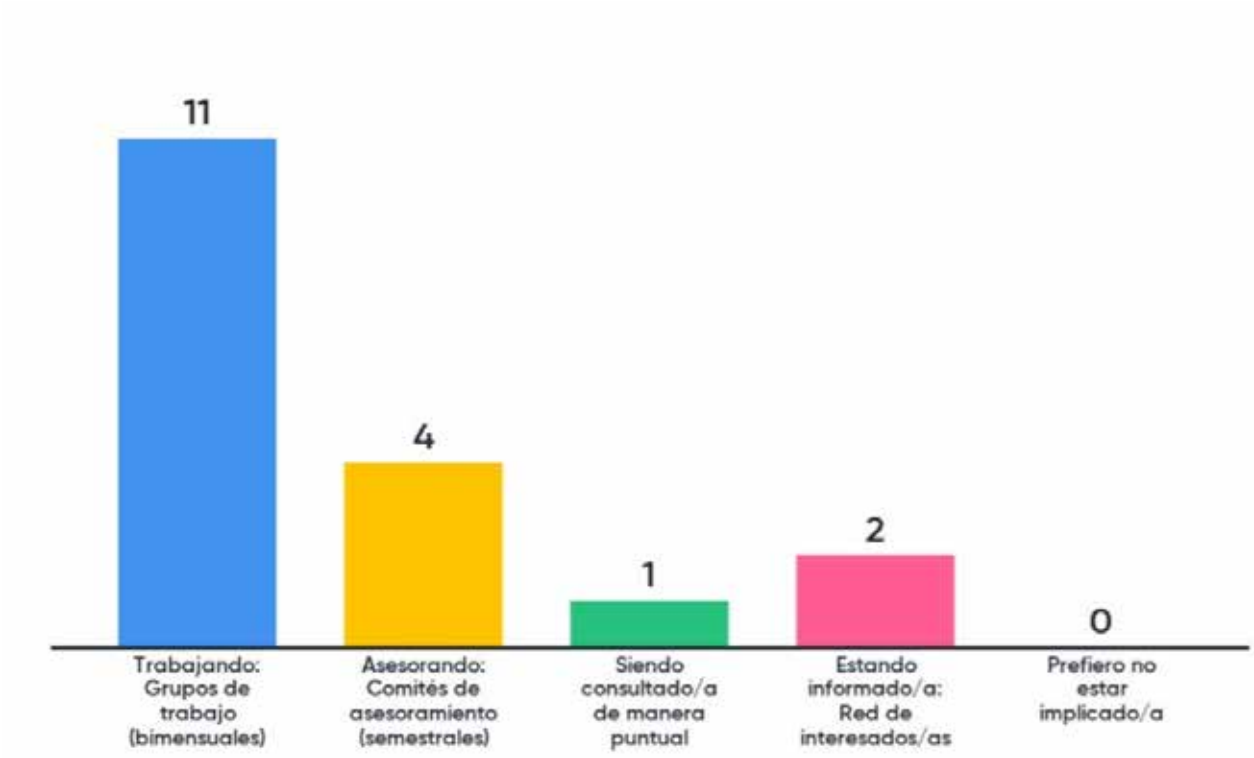
· Promoting and participating in pilots (following a cooperative model) that provide real results and solutions; e.g., energy communities.
· Promoting micro interventions; e.g., time banks and citizen solidarity networks.
· Supporting local cooperatives that defend another energy model and defend energy as a right.
During the workshop, it was emphasized that the pilot projects that encourage the self-production and self-consumption of decentralized renewable energy (Challenge 1) also empower citizens and allow the democratization of the energy model; therefore, there are solutions that can affect both challenges, such as energy communities and cooperative systems of renewable and fair energy production.

Objective WHO? Encouraging citizen participation in the city's energy transition and mapping the actors of organized civil society and the activism to be involved.

Finally, a list of entities, collectives, platforms, associations, NGOs or other actors in València that were considered to have the capacity to influence the achievement of the challenges was drawn up collectively among all the participants of the workshop raised Up to 27 entities from civil society, 4 entities from the social economy, 2 from the academic field, 4 financial entities with an ethical nature, 3 from the public sector, 3 associations from the private field and 2 professional schools. The full list of entities can be consulted in the full report of the day's results: **https://climaienergia.com/wp-content/uploads/2020/05/VCC-040302020-LN-Informe-de-Resultados_web. pdf**

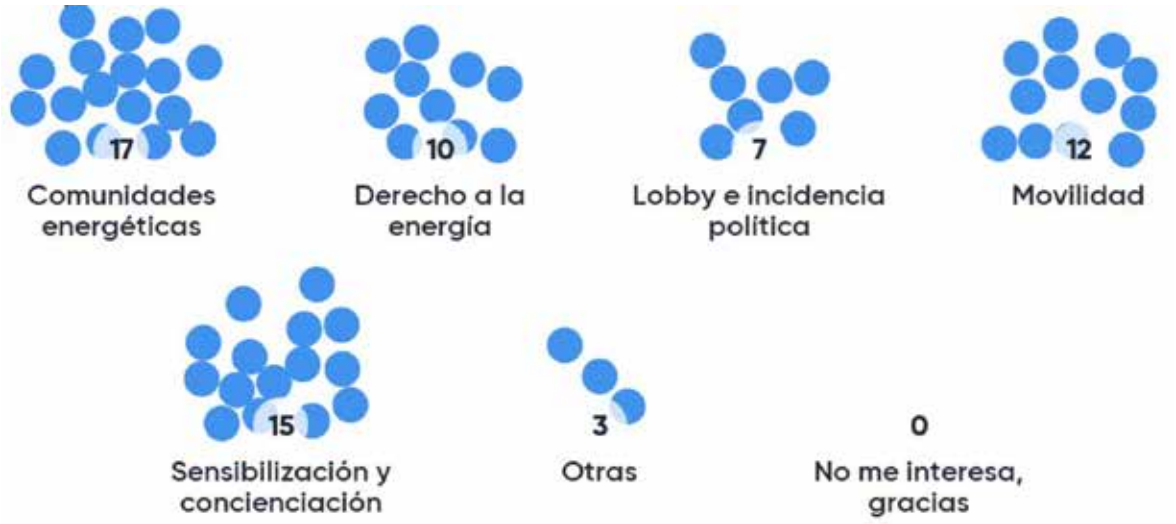
Finally, the participants showed their interest in continuing to be closely linked to this type of work around a Citizen Alliance to promote the city's energy transition. In the following images you can see the desired link and the themes that aroused the most interest: energy communities, awareness and communication, mobility and the right to energy.

To the question: "How are you interested in participating in the promotion of these challenges?", the answers were:



Picture 9 – Results of the dynamic València Change for the Climate! 4

To the question, “In which issue would you like to be involved?”



Picture 10 – Results of the dynamic Valencia Change for the Climate! 5

Objective: Sharing a vision of the city, framed in the European project TOMORROW.

Finally, the workshop ended with a visualization exercise of the desired city in the future. On the basis of a mural that showed an example of a possible sustainable city, each of the participants wrote at least one idea that they wanted to emphasize and underline about their dream city.

Picture 11 – Results of the dynamic València Change for the Climate! 6

It’s necessary to remark that the activity, more openminded and distended than the previous ones, was neither only focused on the two challenges previously analysed, nor in the aspect of the energy transition, but it encompasses the whole vision of a sustainable city.

Thus, the ideas collected were:

Energy transition	Naturalization of the city	Healthy city	Others
Ship roofs full of solar panels	Re-naturalisation	Sustainable mobility	Good life
Local energy (not multinationals)	Education on the environment	Shared vehicles in neighbourhoods	Time to be
Housing energy rehabilitation	Local products at school canteens	A lot of bicycles!	Closer products
Energy communities: Shared self-consuming	Urban vegetable/ fruit gardens	A company that leads all the public transport (underground, bus, train)	Awareness since the school period
Cooperative municipal electrical network	Urban woods	More public transport and better connected to the metropolitan area.	Municipal cooking for schools.
Efficient and low consumption housing	Young farmers with living wages	Better connections to villages (depopulation)	Local and distributed chains of value (food and others)
Closed nuclear plant	Growing local plants	Healthy community life	km 0 products
Solar panels in terraces (taking advantage of useless room)	Conserving and protecting biodiversity (making tourism compatible with the natural ecosystem)		Direct shopping
Housing with almost zero consumption	More (fruit/ vegetable) gardens		Streets full of people and full of life!
Solar panels in public buildings	Respecting and giving value to our landscape		Bonus points in tenders or public contracts in favour of local products
School projects about energy			
School projects about energy			
100% renewable energy			
Decarbonizing agriculture with renewable energy and agroecology practices			

My Neighbourhood in Transition

My Neighbourhood in Transition aims to bring the València 2030 Climate Mission closer to the city's residents, in order to incorporate their needs, wishes and priorities into the City Climate Contract that València must develop and sign together with the Generalitat Valenciana, the Spanish Government and the European Commission.

At the same time, it is sought to collectively consider the leading role of citizens in the implementation of this Mission. It seeks to involve citizens so that they take ownership of the Mission and support its implementation through their daily actions, their habits and the leadership of projects that transform their own neighbourhoods.

On June 4, 2022, as part of the programming of the IV edition of Batecs de Barri, a first edition of the event "My Neighbourhood in Transition" was held in Jardí d'Aiora. Around 110 people of different ages participated in the event, there were 9 volunteers who collaborated in dynamizing up to 10 debate tables and up to 42 proposals were proposed by the neighbours and the neighbours of the neighbourhood.

Picture 12 – Photos of My Neighbourhood In Transition 1

The final report of the day and the summary infographic can be found in this folder**: https://drive.google.com/drive/folders/1T2HliRxJVidMkFR5wXJzp6241T_90SUQ?usp=sharing** The video summary of the day can be found here: **https://youtu.be/ei7qOfJgNhQ**


Picture 13 – Photos of My Neighbourhood In Transition 2

The objectives of the day were:

· Nurturing the Climate Contract that València must develop and sign, within the framework of the Climate Mission, with the contributions of the residents of Aiora and Algirós.

· Validating the alignment of the Climate Mission with its real needs, priorities and concerns.

· Giving a sense of ownership and highlight the commitment and importance of citizen actions in achieving the Climate Mission.

As work prior to the celebration of the day on June 4, work was carried out to analyse the context of the neighbourhood and to establish collaborations and alliances to achieve a successful and useful day for the neighbourhood.

· **Workshop of needs:** firstly, in the context of Batecs de Barri, a workshop was organized with the entities and organizations of Aiora and Algirós to find out what the main needs and wishes of the neighbourhood were. This workshop made it possible to prepare a list of demands from the neighbourhood related to each of the 6 areas of action of the Climate Mission: Mobility and Transport, Urban Planning and Habitat, Re-naturalisation Biodiversity, Energy, Housing and Building, Economy and Waste.

· **Volunteer training:** secondly, a training workshop was held for people who had signed up as collaborators to support the event. In this way, it was possible to explain in detail the objectives and dynamics of the day, at the same time as creating a sense of team and reviewing the roles of the collaborators: active listening, recording the contributions of their groups, moderation of speaking turns.

Picture 14 – Photos of My Neighbourhood In Transition 3

Finally, the day of June 4 consisted of a series of practical exercises listed below, which were accompanied by different moments of break to have breakfast, share impressions and converse in a more relaxed way.

· Welcoming and presentation of the day.
· Exercises and games to get to know the participants, celebrate diversity and align expectations.
· Working at tables: getting to know the members of the table, know the rules of the day to allow an enriching and shared debate, continue aligning expectations.
· Working at tables: getting to know the benefits and needs of the neighbourhood. Sharing the vision that everyone has of their neighbourhood, in general.
· Working at tables: debating on the strategies and actions proposed by the Energy Transition Board and the Climate Mission and on the actions proposed by the neighbourhood associations, in relation to two of the Mission's six areas of action.

To nurture this Fair and Inclusive Energy Transition Strategy, all the tables began debating the energy field, while the second topic of debate was left open. The exercise was divided into the following phases:

1. Analysis of the problem sheets and proposals of the neighbourhood entities, the Energy Transition Board and the Climate Mission, in relation to the topic discussed.
2. Enumeration of the needs of the neighbourhood in relation to this topic.
3. Evaluating existing proposals in relation to this topic. What would you add? what would you change?
4. Prioritization of proposals from 1 to 5.
5. For each prioritized proposal, define what they are asking the City Council, what they are asking other entities and companies, and what they could do individually or collectively.

· Final speaking turn to collect the impressions and emotions of the participants, taking advantage to increase the sense of community.

The complete results and all the proposals collected in the first edition of My Neighbourhood in Transition held in Aiora can be consulted in this folder: **https://drive.google.com/drive/folders/1T2HliRxJVidMkFR5wXJzp6241T_90SUQ?usp=sharing**

As a summary, the 3 proposals and actions that were most prioritized by the debate tables are highlighted, for each of the 6 areas of action:

1. Energy Transition:

    a) Telling the citizens about the energy transition.
    b) Eliminating emery poverty.
    c) Promoting the energy local communities.

2. Economy and Waste:

    a) Promoting vegetable gardens and the local economy.
    b) Sustainable water management.
    c) Recycling reward system

3. Mobility and Transport:

    a) Changes in public bus fleets.
    b) Safe bicycle parking.
    c) Better connexions and prices regarding public transport.

4. Housing and Building:

    a) Aid for the rehabilitation of buildings.
    b) Aid to improve accessibility.
    c) Improvement of the management of public budgets.

5. Urbanism and Habitat:

    a) City of 15 minutes.
    b) Rehabilitation of Cabanyal.
    c) Road management and education.

6. Re-naturalisation and Biodiversity:

    a) Care and maintenance of parks and green areas.
    b) More shaded green areas.
    c) Protection of vulnerable people against extreme situations of rain, cold and heat.

Picture 15 – Photos of My Neighbourhood In Transition 4

In addition, the main commitments that the participating people acquired, individually or collectively, to facilitate all these transformations in the neighbourhood, in line with the Climate Mission, are:

· Consuming local agricultural products.

· Using your own containers when shopping, and going to places where you buy in bulk.

· Reducing the consumption of unnecessary goods and products.

· Drinking tap water.

· Being responsible for the behaviour of the pets.

· Taking care of public furniture.

Finally, some people present expressed that the day had served to create community and neighbourhood feeling. For this reason, a series of qualitative results are also highlighted:

· Civic dialogue between citizens of different ages, origins, traditions, ideologies and points of view was encouraged.

· A cordial and collaborative work was established in relation to the development and transition of the neighbourhood.

· A successful and replicable citizen participation pilot was created in other neighbourhoods in València.

· The Climate Contract in València was enriched with proposals from Algirós, Aiora and El Marítim neighbourhoods.

Figure 8 – Summary of the results of My Neighbourhood in Transition

València 2030 Urban Forum

The Urban Forum València 2030 held throughout the month of May 2022, was a gathering space for the entire social, economic, institutional and cultural structure of the city, which reflected in a shared way on the future sustainable development of our city and our environment.

In this way, and under the methodological framework defined by the Spanish Urban Agenda, the intention is that this Urban Forum serves to make visible and build together the Urban Strategy València 2030, as the itinerary that will lead to a comprehensive development, innovative, shared and transformation of the city for the next decade.

This Urban Forum proposes different days open to the public (in the form of thematic conferences, debate spaces, workshops or exhibitions, among others) to involve all the agents of the city, including the citizens themselves, in this journey towards the València we imagine. Specifically, for the vision of a Sustainable City, different discussions and participatory processes were stimulated, such as:

· Round table “The future of mobility: a more public and sustainable one”, a dialogue on sustainable urban mobility at the service of citizens.

· Round table “A new energy model of the city”, a dialogue on the use and management of energy in the city.

· Round table “Green València”, a dialogue on green spaces and their importance in the city.

· Participatory workshop “City Views Workshop”, where citizens could make proposals to enrich the València 2030 Urban Strategy.

The results of these workshops and round tables are collected in the following picture. Specifically, in order to define the Sustainable City, words such as: comprehensive and natural cycles of waste, resilience, degrowth, healthy eating, active mobility, environmental social justice, data intelligence and energy and climate change are highlighted and defined.

The strategic lines that are considered most prioritized by citizens and the city’s entities are: the fair and inclusive energy transition, climate resilience, territory and re-naturalisation of the city, and sustainable, inclusive and efficient urban and metropolitan mobility.

Finally, some proposed actions and projects are collected to advance the sustainable city that we want to achieve, such as: raising awareness and tax incentives for habits and actions that reduce the carbon footprint and dissuasive parking that allow and facilitate the access to the city by public transport.

Figure 9 – Summary of the results of the participatory process for the Valencian Urban Strategy 2030, Sustainable City.

ITINERARY

4

Based on the contributions and the collaborative work carried out in the spaces, working groups and conferences described above, the itinerary for the city's energy transition is defined. This itinerary involves and affects the whole city, its different sectors and its citizens as a whole.

València's energy transition itinerary is structured in 6 main lines of action. These 6 lines of action are included in l'Estratègia Urbana València 2030 (València 2030 Urban Strategy) Action Plan within Program 4: Energy Transition and Program 12: Regeneration, urban development and access to housing, following the following numbering:

- Line of action 4.1: Neighbourhood Energy Communities
- Line of action 4.2: Energy Offices
- Line of action 4.3: Program 50/50
- Line of action 4.4: Carbon Neutral Districts
- Line of action 4.5: Energy Culture
- Line of action 12.3: Building Renovation Wave.

This Strategy develops in more detail each of these lines of action, thanks to the contributions of citizens and city entities during more than 2 years of work and co-definition processes. Specifically, for each line of action, the following sections are defined:

- Description of the line of action
- Justification of the line of action
- Previous experiences and learning
- Vision of the future and objectives in 2030
- Governance and coordination
- Itinerary and budget

Beyond these 6 main lines of action that have been considered priorities by the Energy Transition Board and its Commissions, the Strategy also includes a series of projects or actions that have also been proposed and defined by the participating entities and by citizens and which, despite falling outside the priority lines of action, are considered necessary to achieve a fair and renewable energy model in 2030.

Description of the line of action

Energy communities have been recognized as a central element of the new energy model, given their **renewable, decentralized and democratizing** nature. An energy community is a new way of generating, using and managing energy at a local level through the cooperation of different agents (citizens, local administration and SMEs). Through this new figure, citizens and other participating entities become an active part of the energy sector, being able to produce and share renewable and local energy, offer energy efficiency services or promote ways of sustainable mobility, among others.

According to **Royal Decree 23/2020**, renewable energy communities are "legal entities based on open and voluntary participation, autonomous and effectively controlled by partners or members who are located in the vicinity of renewable energy projects that are owned by 'these legal entities and that they have developed, whose partners or members are natural persons, SMEs or local authorities, including municipalities and whose primary purpose is to provide environmental, economic or social benefits to their partners or members or to the local areas in which they operate, rather than financial gain."

These renewable energy projects, which can be controlled and managed by the energy community, are collective self-consumption facilities regulated in **Royal Decree 244/2019.** These collective installations must be close to the points of consumption, for example if they are connected, both generation and consumption, at low voltage and at a distance between them of less than 500 meters, or that are connected at low voltage tension and derive from the same transformation centre.

A Neighbourhood Energy Community can be divided into three interrelated elements:

- **Technical aspect:** for example, a collective photovoltaic installation that supplies renewable energy for the self-consumption of a series of entities and individuals in the vicinity.

- **Administrative aspect**: for example, an association or a cooperative that acts as a legal entity to be the owner of the collective facility and to carry out procedures on behalf of the co-owners of the facility: request a subsidy, request a loan, interact with the distributor company, etc.

- **Social aspect:** for example, the association mentioned above must serve not only to facilitate procedures, but also to create community, give a sense of belonging and provide a place for debate, reflection and joint decision-making.

Therefore, NECs are key tools to accelerate a massive and democratic deployment of renewable installations in an urban space like València, since they allow:

· Different **neighbours** to manage collective facilities on the roofs of their buildings, despite being spaces of shared ownership.

· **Public and private tertiary buildings** to share their roof to place a renewable installation shared with individuals and other consumers in the area.

· **Public administration** to use public space (public roofs, public roads, pergolas, etc.) to locate renewable facilities shared with citizens, prioritizing the participation of vulnerable families to defend their right to access to renewable and clean energy.

This project proposes, on the basis of the first successful experiences in València and other municipalities, to accelerate the pace and expand the deployment of a network of NECs throughout the city. This network aims to promote, aggregate and federate citizens around community energy transition projects, offering an empowerment and training tool for all.

SWOT and CAME analysis

OPORTUNITIES	THREATS
Alignment of national and European funds Synergies with other projects (50/50, communication, offices, rehabilitation) Institutional and political support at a high level	Lack of information and citizen training Possible opposition due to aesthetic changes Opposition and aggressive campaigns of the electric oligopoly
EXPLOTE	**ADAPT**
Taking advantage of the ETB as a coordination nexus between Commissions and demonstration projects Promoting state-of-the-art ordinance that obliges to install PV in favourable cases	Involving associative structure to achieve neighbourhood acceptance and participation Synergies with already existing communities (schools, neighbours, associations, etc.)
STRENGHTS	**WEAKNESSES**
Public-private-citizen collaboration Alignment with democratisation of energy and defence of the right to energy It increases the resilience of the city Greater social knowledge of the RE	Indefinite and non-facilitating regulation Need for a stimulating figure Many different cases (rental) Need for a space or cover to occupy Initial investment: people with little resources
MAINTAIN	**CORRECT**
Keeping focus on citizen and small business inclusion Possibility of municipally owned PPAs to fight energy poverty Independence from electricity price increases	Exploiting and taking advantage of existing models Using funds and subsidies to cover the fixed costs of revitalisation and technical support Offering public participation to facilitate the initial investment

Table 3 – DAFO and CAME analysis of Neighbourhood Energy Communities

Justification of the line of action

Why is it an emblematic project of the València energy transition?

The problem that the proposal seeks to solve is the need to urgently speed up an energy transition that reduces the city's emissions, at the same time that it benefits citizens financially and facilitates associationism and cooperation among neighbours. The transformation of the energy system is too slow and expensive, and energy communities and citizen action enable a more agile and lasting transition.

For this reason, the social aspect is key in this project, which seeks to bring energy closer to citizens and provide the information, support and tools necessary for the inhabitants of València to take an active role and place themselves at the centre of the system In addition, the importance of this social aspect of energy is reinforced by the current situation of the global pandemic COVID-19, which has forced us to spend more time in poorly conditioned homes, at the same time that many families have seen their income reduced. This pandemic has also highlighted the problem of cities due to their dependence on external resources, as well as their lack of resilience in the face of crisis situations. Energy communities provide solutions to these problems, strengthening neighbourhood networks of cooperation and mutual support, and taking advantage of local and renewable resources.

On the other hand, the energy sector tends towards electrification (of mobility and buildings) and the local production of energy favours this electrification, reducing the problems that the electricity network may have in combining a growing demand with a remote and centralized production. In addition, energy communities respond to the problem of managing individual consumers and producers, aggregating generation and consumption curves and thus increasing the efficiency of the system.

Why is it a transformation project in the city, beyond energy?

The project aims to deploy the model of energy communities throughout all the neighbourhoods and districts of the city, offering enormous transformative potential for the city. The associationism and social work of proximity also allows the energy transition to be the necessary lever to work on social, educational and economic issues, hand in hand with the social actors involved to achieve the transformation of the neighbourhood.

The project does not only involve the energy part of promoting renewable installations in the city, but its focus on the social part, associationism and collaboration between neighbours, small businesses and the public administration means a cultural change and of social organization that has a transformative and multiplying capacity.

Previous experiences and learning

Mapping of previous initiatives

The year 2020 has been the year in which the energy communities have gained relevance as a key figure within the energy sector. In the legislative and regulatory field, Royal Decree 23/2020 collected for the first time the figure of renewable energy communities as a legal figure, giving a generic description of their nature and functions.

At the same time, many initiatives throughout the Spanish territory have begun to promote collective renewable energy formulas that, despite their enormous variety and casuistry, are included in the broad framework of energy communities. These initiatives have been promoted both from the public, private and social spheres, as well as in collaborations between them. The IDAE collects in this viewer the existing initiatives in the different regions of the State: **https://view.genial.ly/60eef9e001f7650d996df9f**1

In the city of València, in 2020 the first public promotion of Energy Communities of the city was created, in the neighbourhoods of Aiora and Illa Perduda and in Castellar-L'Oliveral. Both initiatives were based on promoting bottom-up processes because the residents of the neighbourhoods organized and decided how they wanted to form an energy community and share local renewable energy.

After a long period of communication, awareness-raising and training on energy issues for the interested people, two participatory processes were implemented where the interested parties jointly defined what was the model of associationism, governance and financing that they wanted I will have. In addition, work was done to define the rules of the game for these energy communities: who could participate, with what obligations and with what rights. As a result, with the support of the Energy Office, the residents decided to form two associations, one in each neighbourhood, and defined their statutes. Subsequently, the Local Energy Community of Castellar-L'Oliveral association won an IVACE grant and plans to have its first photovoltaic installation located in the La Cebera Civic Centre, ceded by the València City Council, operating before from the end of 2021.

Learning

Both with the experience of València Clima i Energia supporting different incipient energy communities in the city, and with the experience of Sapiens Energia promoting more than 20 root projects throughout the Valencian territory, the following learnings are extracted, based on questions raised by the Commission.

What models of energy communities exist or are in operation?

As previously explained, the main initiatives of energy communities that are emerging in the territory are based on collective photovoltaic installations, in which the neighbourhood around the installations, small businesses and the administration participate, either as a promoter, as a participant or as a facilitator ceding a public cover. There are communities in the form of associations, cooperatives and even limited liability companies.

How many awareness-raising activities have been carried out and what has been their impact?

In the community of Castellar and Aiora and the Lost Island, a process of communication, information, dynamism and co-creation was carried out with a total cost of approximately €25,000 for both communities, which achieved the registration of approximately 150 people in total as interested in participating. The co-creation workshops had the participation of around 15-20 people in each of the communities and, finally, two driving groups were formed (one in each community) of 5-6 people who formed the board of directors of the associations that were created.

Have people in a situation of energy poverty participated?

In the CEL Castellar-L'Oliveral it is considered that families at risk of energy vulnerability participate, through the collaboration of València Clima i Energia with Social Services of the City Council and with the CEL Association itself. It is expected that around 3 families will participate at no cost with a power of 1 kW each.

What are the expected energy and financial savings?

In the case of Castellar-L'Oliveral, participating families are expected to have between 0.5 and 1 kW of power. Depending on your consumption and hourly consumption patterns, an average investment of €840 is expected, with which you can save around €220 and 160 kg of CO2 per year.

What is the level of citizen participation and interest in these projects?

Citizen interest and participation is probably the main barrier to the deployment of energy communities and it is important to dedicate part of the resources to communication and dynamism of the local neighbourhood structure. However, the Energy Office indicates that there has been significant progress over the last year, as many citizens are interested in participating and promoting energy communities in their neighbourhoods.

Are there clear references and frameworks for the CELs to define their regulations?

At the regulatory level, there is still a significant lack of these administrative and organizational frameworks and formulas that guide the communities. In València, Castellar-L'Oliveral's experience with the Energy Office allows us to have an example of statutes and internal operating regime for other communities that are interested.

Are public grants available to finance these initiatives?

Yes, from 2020 there is a specific subsidy line for energy communities by IVACE which annually subsidizes around 50% of the costs of these communities, considering not only the costs of photovoltaic installations, but also costs of revitalization, organization, project writing, etc. In addition, the new lines of incentives for renewable energies managed by IVACE and the DG of Ecological Transition of the Generalitat Valenciana contemplate the participation of energy communities as beneficiaries of aid and, therefore, present a perfect opportunity to finance these projects.

Future Vision and objectives in 2030

FUTURE VISION (QUALITATIVE)	**QUANTITATIVE OBJECTIVES**
Achieving public awareness and training on renewable energies and energy communities through communication	40% of homes participate in a NEC or self-consumption. 75% of the municipal buildings with photovoltaic plants There is an open platform to put interested and covered people into contact. There is a network of entities that collaborate with communication and dynamics (state administrators, neighbourhood associations, companies...)
Remarking leaders that generate reliability towards the citizenship and that are part of communication	40% of homes participate in a NEC or self-consumption.

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Normalizing the NECs inside the urban associations and achieving fluid and transparent communication between the actors and the several NECSs	There is more than 100 NECs in the city There is an open platform to put interested and covered people into contact. There is a Valencian Network of NECs
Successfully establishing the NECs as benchmarks of the new energy model, and with a diversity of models and topologies	There is more than 100 NECs in the city The participants of the NECs diminish their energy consumption a 20%
Promoting and coordinating an ecosystem of dynamic actors specialized in the energy aspect	The NECs are economically sustainable with no public contribution There is a network of entities that collaborate with communication and dynamics (state administrators, neighbourhood associations, companies...)
Establish innovative business models with benefits for all parties and based on the green and sustainable economy	The NECs are economically sustainable with no public contribution
Generating knowledge and open data	There is an open platform to put interested and covered people into contact. There is a Valencian Network of NECs
Eliminating administration barriers, simplifying procedures and elaborating guides and templates	Average duration of the administrative procedures process of less than 1 month
Developing new business models associated with NECs, such as demand management, network management or shared electric mobility services	There is at least 1 NEC with electric and shared mobility services in the city

FUTURE VISION (QUALITATIVE)	**QUANTITATIVE OBJECTIVES**
Standardizing which part of the production goes to vulnerable families to ensure their right to energy	At least the 60% of the NECs give a part of the production to the right of energy
Massively promoting collective facilities in buildings, either through NECs or through the owner communities	Average duration of the administrative procedures process of less than 1 month 15% of the residential energy consumption is covered with local renewables. 80% of the electric consumption in the city is renewable (local or contracted)
Public buildings (home or tertiary) are part of the NECs	There is more than 100 NECs in the city 75% of the municipal buildings with photovoltaic plants
Developing a network of Energy Offices to monitor, accompany and procced NECs	Average duration of the administrative procedures process of less than 1 month 8 fixed Energy Offices and 2 itinerant Energy Offices
Establishing public-private financing models that lower facility costs through economies of scale and pooled purchasing	The NECs are economically sustainable with no public contribution
Achieving the fact that big tertiaries participate in the NECs and externalize their covered	At least the 60% of the NECs give a part of the production to the right of energy

Table 4 – Future Vision of the Neighbourhood Energy Communities

Governance and coordination

The entities shown in this section have been identified through three successive mappings carried out collaboratively with the INGENIO Institute of the Universitat Politècnica de València, the participating entities of the Energy Transition Board and the participating entities of the Specific Commission of this demonstration project, respectively.

However, the list of entities that are protagonists in the different roles and sectors can change and grow with the contributions of more entities and with the progress of their implementation.

	Public sector	Academy	Private Sector	Civil Society	Social media
Promotors	**VCE, City Council (Climate Emergency and Energy Transition)**		**AVAESEN**	**CAFVC**	
Executors			Engineering, Social revitalization companies, Rehabilitation agents, Rehabilitation managers, Property managers, Installation companies, Energy sector companies		
Support	**IVE, GVA (Ecology Transition), GVA** Climate Change), GVA (Educational Infrastructures), City Council (Central Services), **The ships, IVACE, IDAE**	**UPV-IIE-Catenerg, ITE,** Universitat de València	**ASELEC, I-DE**, Equipment manufacturers, Financial companies ECrowd	**COIICV,** CAATIE, COACV, COITCV, **FAAVV**, tertiary sector entities, Shops Association of neighbourhood businesses, Horta Sud Foundation, Falles, Music Bands, Sport Clubs	**APIA,** València Plaza, Levante, València Extra, À Punt, EFE Verde
Users	City Council (Technical Central Services), GVA	Educational institutions, Universities		Citizenship, Owners	

Table 5 – Entities involved in Neighbourhood Energy Communities

Itinerary

Line of Action 1: Potential analysis

Task 1.1: Photovoltaic potential analysis of city roofs

This task seeks to develop a massive simulation of the photovoltaic potential of all the roofs of the city's buildings, based on cadastre data, solar irradiance, planning limitations and other open data. A representative sample of the simulations will be validated by academia, the private sector and public administration, so as to ensure a good quality of the estimates.

This simulation must incorporate key parameters of collective self-consumption, improving similar studies aimed at estimating the potential of individual self-consumption facilities. It will be based on previous work that already exists, such as the mapping of the photovoltaic potential of the city carried out by the Polytechnic University of València, the IMPACTE and Pylon simulation tools, the study of the photovoltaic potential of the Valencian Community carried out by the ITE and IVACE, the RenovEU tool of the IVE or the photovoltaic potential study of educational centres of the DG of Ecological Transition of the Generalitat Valenciana.

T1.2: Open publication of the city's photovoltaic potential map

This task aims to make publicly visible the results of the photovoltaic potential analysis carried out in T1.1. This publication in the form of a map of the city allows any person or professional to know the photovoltaic potential of their building or roof, or of the roofs around it, and aims to encourage action.

The tool will differentiate buildings by different typologies (residential, public, tertiary) to also facilitate decision-making by public administration and private companies, and to facilitate the creation of energy communities in neighbourhoods. It is also proposed that the same map incorporates information about the already existing facilities, so that it is possible to see how the deployment is progressing throughout the city.

To avoid duplication and take advantage of resources, the map must be integrated into existing viewers, such as the Cartographic Viewer of the Generalitat Valenciana or the Geoportal of the València City Council. It is based on similar experiences in other municipalities such as the solar map in Barcelona or the Som Comunitat Energètica map in Catalunya.

T1.3: Identification, formation and implication of owners interested

In collaboration with the Massive Energy Culture Campaign and Energy Offices projects, the aim is to reach the entire population so that they know the benefits, opportunities and steps to follow related to collective self-consumption and energy communities.

To achieve this, this task contemplates the implementation of communicative actions, the design of materials and the organization of information days, being conveyed, when possible, through the Energy Offices deployed in the neighbourhoods. In order to involve residential owners, special support will be provided by property managers and neighbourhood associations. In addition, communication and information will be focused on the associative structure already existing in the neighbourhoods (schools, neighbourhood associations, Fallas, music bands, AMPAs, etc.).

Finally, it is planned to take advantage of communication channels that already exist between the administration and citizens, such as the payment of the IBI or administrative procedures related to housing or energy. The task also contemplates the proactive involvement of large private and public owners of large roofs with photovoltaic potential that can be socialized through the energy communities.

Total budget of Line of Action 1

Neighbourhood Energy Communities	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Potential analysis	4.725.200€	1.865.080€	1.657.320€	478.770€	257.010€	-	467.020€
T1.1: Photovoltaic potential analysis of city roofs	235.000€	47.000€	94.000€	35.250€	35.250€	-	23.500€
T1.2: Open publication of the city's photovoltaic potential map	55.000€	44.000€	11.000€	-	-	-	-
T1.3: Identification, formation and implication of owners interested	4.435.200€	1.774.080€	1.552.320€	443.520€	221.760€	-	443.520€

Table 6 - Total Budget of Line of Action 1 in Neighbourhood Energy Communities

Financing options and mechanisms for Line of Action 1

Although this Line of Action contemplates a predominantly public investment, in order to be at a preliminary stage of the project, the following alternative financing routes have been identified:

· Calls for Next Generation funds where the development of tools and studies for the promotion and dynamism of energy communities can be included, such as CE Aprende (IDAE).

· Collaboration with entities such as the UPV, IMPACTE, Pylon, IVE, ITE, IVACE or GVA, to take advantage of their existing tools and studies and contribute to the joint development of T1.1.

· European innovation projects, such as MAtchUP or POWER UP, where the development of photovoltaic potential simulations and their visualization in map form can be included.

· Collaboration and sponsorship of private companies in the organization and participation in informative conferences and workshops on the benefits and opportunities of energy communities.

Line of Action 2: Dynamicity of people and entities interested

T2.1: Databases management of roofs and people interested

This task aims to develop a platform, ideally linked to the T1.1 potential simulation tool, which serves for physical and juridical people to show their interest in participating in energy communities around them. In this way, the platform will be able to interrelate these people with the available roofs around them or even with already existing solar installations that want to socialize.

This tool can provide different services, such as: visualizing the energy communities that exist to set an example and facilitate their growth; provide information to the public administration and entities in the energy sector about the potential of energy communities in different neighbourhoods and the level of interest of the neighbourhood; facilitate the contact and organization of people from the same neighbourhood; notify the targeted people within a radius of 500 meters when there is a cover available that is looking for more participating people; facilitate the formation of a Valencian Network of NECs in T2.3.

The platform must avoid duplicating efforts and start from existing tools or to which it can be linked, such as the one developed in T1.1 or energy community maps developed at regional (IVACE) or national (IDAE) level.

T2.2: Stimulating participative co-definition processes

With the nuclei of interested and informed people and entities, this task seeks to stimulate co-definition processes in the different neighbourhoods so that natural and legal persons with an interest and/or with available coverage jointly define their interests, governance model, operating rules, forms of financing, etc.

It is sought that the neighbourhood itself be the one to lead the process of collaboration and decision-making, while the public and private promoting entities only offer social dynamism and technical and legal support. This support will be linked whenever possible with the Energy Offices deployed in the neighbourhoods.

In addition, it is considered necessary to proactively involve vulnerable people in the neighbourhoods, in collaboration with the municipal centres of social services and with social NGOs, so that their participation in the NECs is facilitated and they benefit from their deployment.

T2.3: Formation of a Valencian Network of NECs

This task aims to create a local network that brings together all the NECs in the city and facilitates the emergence of synergies and the exchange of resources between them. The Network will also provide technical, administrative and legal support to the NECs that need it. Finally, the Network also serves to give visibility to the city's NECs.

This Network will seek to be economically sustainable, financed from the savings achieved by the NECs already operational and possible subsidies. The Network will allow the replication of the model to be accelerated, advising new and small NECs and providing them with resources and recommendations learned from the experience of existing CEBs.

On the other hand, the Network offers the possibility of organizing joint purchases at cheaper prices, to acquire solar panels, technical services, communication materials or joint legal advice, etc. The Network may be integrated, if it is considered appropriate, into existing potential networks at higher levels such as regional or national.

Total budget of Line of Action 2

Neighbourhood Energy Communities	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA2: Dynamicity of people and entities interested	4.215.200€	1.708.080€	1.460.820€	403.520€	201.760€	-	441.020€
T2.1: Databases management of roofs and people interested	55.000€	44.000€	11.000€	-	-	-	-
T2.2:Stimulating participative co-definition processes	4.035.200€	1.614.080€	1.412.320€	403.520€	201.760€	-	403.520€
T2.3: Formation of a Valencian Network of NECs	125.000€	50.000€	37.500€	-	-	-	37.500€

Table 7 – Total budget of Line of Action 2 in Neighbourhood Energy Communities

Financing options and mechanisms for Line of Action 2

The following financing channels are identified for this Line of Action:

· Calls for Next Generation funds where the dynamism of participatory processes, the advice of energy communities or the development of the T2.1 platform can be included, such as CE Aprende and CE Planifica (IDAE).

· The Valencian Network of NECSs can be financed directly by the payment of a fixed or variable fee by the CEBs that form it and benefit from its services.

· Collaboration with entities such as the UPV, IMPACTE, Pylon, IVE, ITE, IVACE or GVA, to take advantage of their existing tools and studies and contribute to T2.1.

· Collaboration and sponsorship of private companies or other entities in the organization of training workshops and legal and technical advice to NECs.

Line of Action 3: Definition of projects

T3.1: Elaboration of administrative documentation of the NECs

This task encompasses all the preparation of administrative documentation necessary to constitute the NECs in accordance with the models and rules defined collaboratively in T2.2. This documentation includes statutes, internal regulations, contracts, acts of agreement between partners, acts of agreement between owners, etc.

The task also envisages drawing up, with the learning of the pioneering NECs, a detailed guide with the steps to follow to constitute an energy community and with the document templates necessary for each of these steps.

Finally, there is a need to work directly with the different administrations involved in these administrative processes in order to convey to them the needs and experiences of these NECs in order to simplify and speed up these procedures and administrative needs.

T3.2: Preparation of engineering projects for the facilities

This task encompasses all the preparation of technical documentation for the facilities managed by the energy communities, including projects or execution reports and financial budgets. Through the T2.3 Network, we will seek to share learnings and technical resources during the development of these projects, in order to achieve optimal prices and dimensions.

The projects must take into account, in addition to the energy and economic performance, aspects related to the regular use of the roofs and landscape aspects and must seek, whenever possible, maximum citizen and neighbourhood consensus.

These projects will start from the simulations of T1.1 and the consensuses approved in T2.2 and will be developed looking for collaboration and possible synergies with professional associations (architects, technical architects, engineers, property managers), companies of the sector, professionals and freelancers, financial institutions, and control bodies such as ASEIVAL.

T3.3: Definition of the social model of the NECs to include people in energy vulnerability

This task seeks to ensure that vulnerable people participate in the NECs that are formed in their neighbourhoods and, therefore, the energy transition also serves to mitigate the city's energy poverty and reduce social inequalities.

For this reason, the T2.2 decision-making and the administrative (T3.1) and technical documents (T3.2) will include solutions such as: including a minimum of social housing owned by public administrations; give free part of the energy produced to vulnerable families; give priority to the participation of people who perceive the social good of electricity; allocating part of the NEC's financial savings to measures to fight energy poverty in the neighbourhood.

Total budget of Line of Action 3

Neighbourhood Energy Communities	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA3: Definition of projects	3.900.000€	1.990.000€	1.260.000€	-	-	160.000€	490.000€
T3.1: Elaboration of administrative documentation of the NECs	300.000€	30.000€	60.000€	-	-	-	210.000€
T3.2: Preparation of engineering projects for the facilities	400.000€	40.000€	80.000€	-	-	-	280.000€
T3.3: Definition of the social model of the NECs to include people in energy vulnerability	3.200.000€	1.920.000€	1.120.000€	-	-	160.000€	-

Taula 8 – Total budget of Line of Action 3 in Neighbourhood Energy Communities

Financing options and mechanisms for Line of Action 3

The following financing channels are identified for this Line of Action:

· Calls for Next Generation funds where the preparation and drafting of administrative and technical documentation for the NECs, such as CE Aprende, CE Planifica and CE Implementa (IDAE), can be included.

· Local and regional public administrations finance the participation of vulnerable families, either in homes they own or privately owned, so that families benefit from self-consumption, at the same time as financial aid dedicated to paying energy bills is reduced.

· Corporate Social Responsibility policies of companies that can finance the participation of vulnerable families in the NECs created.

Line of Action 4: Processing and execution

T4.1: Simplification of administrative processes

This task seeks to align and coordinate all the entities involved throughout the process of administrative processing and registration of energy communities and renewable energy installations, in order to make the process as easy as possible for users. These entities include, among others, the City Council's Licensing Service, the Department of Industry of the Generalitat, PROP Offices of the Generalitat, the marketing company and the distribution company.

After aligning these entities and seeking to simplify the necessary administrative processes as much as possible, a guide on the steps to follow for the processing of these types of projects will be jointly developed, with information of interest, contact numbers, templates of documents to present and examples of successful cases. This guide will be based on the IDAE professional self-consumption processing guide, but will try to be more illustrative and practical, and applied directly to the Valencian context.

T4.2: Management of administrative processes and grants

There are currently a large number of subsidies and bonuses applicable to the different models of collective self-consumption and energy communities, such as the specific IVACE and IDAE calls for energy communities, the calls for generic renewable self-consumption installations of the Generalitat Valenciana, or the tax deductions of regional personal income tax or IBI and municipal ICIO that may apply depending on the type of project.

Through multi-level collaboration in the public sphere and the inclusion of private financial entities, the aim is to simplify and facilitate the access of property owners to all these subsidies, tax deductions and financing options, with a special focus in the financing options offered by rehabilitation agents or energy service companies as "turnkey" solutions.

The project will systematically collect all this information and transmit it in a simplified and accessible way to citizens, through the communication channels and the offices of T1.3, training and information days in T2.2, and taking advantage also the platforms for citizen use developed in tasks T1.2 and T2.1.

T4.3: Execution of the installations

This task includes the execution of the facilities defined in the technical documents of T3.2. in a manner aligned with the social criteria defined in T3.3 and the administrative processes and subsidies managed in tasks T4.1 and T4.2.

Again, this task involves the collaboration and action of the entire private, public, social and academic ecosystem of the city, since they are all involved in different points of the administrative, technical and economic process of establishing the energy communities and execution of the installations.

Total budget of Line of Action 4

Neighbourhood Energy Communities	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA4: Processing and execution	19.170.000€	2.836.000€	5.834.000€	-	-	-	10.500.000€
LA4: Processing and execution	170.000€	136.000€	34.000€	-	-	-	-
T4.2: Management of administrative processes and grants	4.000.000€	1.200.000€	2.800.000€	-	-	-	-
T4.3: Execution of the installations	15.000.000€	1.500.000€	3.000.000€	-	-	-	10.500.00€

Table 9 – Total budget of Line of Action 4 in Neighbourhood Energy Communities

Financing options and mechanisms for Line of Action 4

The following financing channels are identified for this Line of Action:

· Calls for Next Generation funds to subsidize administrative processing, establishment of CEBs and execution of works, such as CE Aprende, CE Planifica and CE Implementa (IDAE).

· Local and regional public administrations finance part of the installation costs, either to include public buildings as participants in collective self-consumption or to cover the participation of families in a vulnerable situation. Public participation can also be contemplated by ceding, free of charge or at a reduced cost, their roofs to house renewable energy installations.

· Tax deductions from national income tax (Ministry of Finance), regional income tax (GVA), municipal IBI (City Council) and ICIO (City Council) for solar installations on roofs.

· Call for aid for self-consumption and storage of renewable energy in the residential sector, public administrations and third sector entities (GVA).

· Call for aid for energy communities (IDAE) and renewable energy communities (IVACE).

· Financing solutions and "turnkey" services offered by rehabilitation agents and energy service companies that assume the financing needs to carry out the works without the need to make an investment on the part of the owners.

· Financial entities, banks and savings banks that finance the costs or advance the grants awarded, allowing participants not to make any initial investment.

Line of Action 5: Management and growing

T5.1: Management and tracking of the NECs

This task includes the social and administrative management necessary to keep the NECs created under T4.3 running. This management includes the specific processes of each NEC, such as assembly meetings, board meetings and decision-making, management of changes with people entering or leaving the NECs, growth with new facilities, etc.

This task is, therefore, mainly carried out by the members of the NECs themselves, although it contemplates specific support from entities such as the Energy Offices and the subcontracting of certain tasks to entities that are experts in the management and dynamism of 'this type of communities.

Finally, it is considered interesting to make use of the Valencian Network of NECs created in T2.3 to continue sharing experiences and tools during the life of the communities.

T5.2: Technical maintenance of the installation

Apart from the management of the social part of the NECs, it is necessary to contemplate the technical maintenance of the energy installations managed by the communities. It is expected that this task will be subcontracted in most cases to companies that are experts in renewable energy, with the generation of local employment in the energy sector that this can generate.

Again, use will be made of the Valencian Network of NECs to exploit the existing synergies, including the drafting of a guide and templates for the maintenance contracts of the facilities, with the actions to be carried out, the services to be they must also include their periodicity. The possibility of using this Network to make a joint procurement of these maintenance services for the different NECs is also considered.

T5.3: Proposal of new installations and services

This task aims to continue the progress and growth of the NECs created in T4.3, encouraging the development of new collective facilities to be managed by these NECs, and analysing new services to be incorporated into their activity, such as the energy rehabilitation of buildings and homes, energy advisory services, shared electric mobility services and demand management services.

Finally, the synergy of these NECs with other associations in the neighbourhoods and other areas will be sought, so that the figure of the citizen community is exploited to the maximum, for example with agro-food consumption groups, shared parenting groups, care networks, etc.

T5.4: Evaluation and visibility

This task seeks to evaluate the operation and the impacts achieved by the NECs, through the collection of data on production, savings, emissions and satisfaction achieved. These results will be published openly so that they serve as an inspiring element for other communities and neighbourhoods. Channels and tools developed in T1.2 or the T2.3 Network will be used.

On the other hand, the organization of an annual Meeting of Neighbourhood Energy Communities is also contemplated where these results can be shown, successful and inspiring experiences made visible and the exchange of experiences between the NECs encouraged. This meeting will be held in synergy, when deemed appropriate, with other congresses that may exist at European (REScoop), national (IDAE) and regional (IVACE) level.

Total budget of Line of Action 5

Neighbourhood Energy Communities	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA5: Management and growing	2.255.200€	196.300€	137.300€	26.000€	-	-	1.895.600€
T5.1: Management and tracking of the NECs	1.396.000€	69.800€	68.800€	-	-	-	1.256.400€
T5.2: Technical maintenance of the installation	279.200€	-	-	-	-	-	279.000€
T5.3: Proposal of new installations and services	450.000€	22.500€	67.500€	-	-	-	360.00€
T5.4: Evaluation and visibility	130.000€	104.000€	-	26.000€	-	-	-

Table 10 – Total budget of Line of Action 5 in Neighbourhood Energy Communities

Opciones y mecanismos de financiación para el Eje de Actuación 5

The following financing channels are identified for this Line of Action:

· Social management, technical maintenance and evaluation of results can be financed by the NECs using part of the savings and economic benefits achieved by their activity.

· The annual Meeting of Neighbourhood Energy Communities can be financed by the Valencian Network of NECs, that is, with the participating CEBs.

· New services and new facilities developed in T5.3 can be financed from calls for Next Generation funds as described in previous sections, depending on the scope of these new services.

Total budget

This budget shows the financial contributions needed to implement the project, from the public private social and academic sectors.

Neighbourgood energy communities	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
LA1: Potential analysis	774.400€	564.400€	564.400€	564.400€	564.400€	564.400€	564.400€	564.400€	4.725.200€
T1.1: Photovoltaic potential analysis of city roofs	200.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	235.000€
T1.2: Open publication of the city's photovoltaic potential map	20.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	55.000€
T1.3: Identification, formation and implication of owners interested	554.000€	554.000€	554.000€	554.000€	554.000€	554.000€	554.000€	554.000€	4.435.200€
LA2: Dynamicity of people and entities interested	524.400€	509.400€	559.400€	524.400€	524.400€	524.400€	524.400€	524.400€	4.215.200€
T2.1: Databases management of roofs and people interested	20.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	55.000€
T2.2: Stimulating participative co-definition processes	504.400€	504.400€	504.400€	504.400€	504.400€	504.400€	504.400€	504.400€	4.035.200€
T2.3: Formation of a Valencian Network of NECs	-	-	50.000€	15.000€	15.000€	15.000€	15.000€	15.000€	125.000€
LA3: Definition of projects	407.00€	421.000€	470.000€	498.000€	540.000€	540.000€	526.000€	498.000€	3.900.000€
T3.1: Elaboration of administrative documentation of the NECs	3.000€	9.000€	30.000€	42.000€	60.000€	60.000€	54.000€	42.000€	300.00€
T3.2: Preparation of engineering projects for the facilities	400.000€	12.000€	40.000€	56.000€	80.000€	80.000€	72.000€	56.000€	400.000€
T3.3: Definition of the social model of the NECs to include people in energy vulnerability	400.000€	400.000€	400.000€	400.000€	400.000€	400.000€	400.000€	400.000€	3.200.000€

Neighbourgood energy communities	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
LA4: Processing and execution	750.000€	960.000€	2.010.000€	2.610.000€	3.510.000€	3.510.000€	3.210.000€	2.610.000€	19.170.000€
T4.1: Simplification of administrative processes	100.000€	10.000€	10.000€	10.000€	10.000€	10.000€	10.000€	10.000€	170.000€
T4.2: Management of administrative processes and grants	500.000€	500.000€	500.000€	500.000€	500.000€	500.000€	500.000€	500.000€	4.000.000€
T4.3: Execution of the installations	150.000€	450.000€	1.500.000€	2.100.000€	3.000.000€	3.000.000€	2.700.000€	2.100.000€	15.000.000€
LA5: Management and growing	29.800€	34.200€	132.200€	349.400€	245.400€	341.400€	627.800€	495.000€	2.255.200€
T5.1: Management and tracking of the NECs	4.000€	16.000€	56.000€	112.000€	192.000€	272.000€	344.000€	400.000€	1.396.000€
T5.2: Technical maintenance of the installation	800€	3.200€	11.200€	22.400€	38.400€	54.400€	68.800€	80.000€	279.200€
T5.3: Proposal of new installations and services	-	-	50.000€	200.000€	-	-	200.000€	-	450.000€
T5.4: Evaluation and visibility	25.000€	15.000€	15.000€	15.000€	15.000€	15.000€	15.000€	15.000€	130.000€
TOTAL BUDGET	2.485.600€	2.489.000€	3.736.000€	4.546.200€	5.384.200€	5.480.200€	5.452.600€	4.691.800€	34.265.600€

Table 11 – Total budget of the Neighbourhood Energy Communities

Description of the line of action

The Energy Offices (single windows or One-Stop Shops) are a key tool to energize citizens and local actors around the energy transition, as well as to facilitate their participation in the new energy model efficient, emission-free, decentralized, and democratic.

The offices provide local advice on energy law issues, energy bills, energy efficiency, or renewable production in communities. In addition, they serve as a link with the citizens of other projects developed in the neighbourhoods, such as 50/50 programs, Neighbourhood Energy Communities (CEB), rehabilitation programs, etc. These offices answer specific questions: how to save energy, how to produce renewables, what to do if I can't pay for the electricity at the end of the month... offering very practical advice and technical and financial help to act as catalysts for the energy transition in València.

It is proposed to deploy a network of energy advisory offices in the city, distributed among districts and parishes, which may be fixed or itinerant, and which will act as the backbone of the energy transition in the city, connecting the rest energy projects with citizens, small businesses and neighbourhood social organizations, favouring public-private collaboration.

Around the topics mentioned above, the physical offices will mainly offer the following services:

· Appointments for individual advice on optimizing invoices, information on aid and subsidies, good energy practices, self-consumption and energy rehabilitation.
· Group workshops, open and for closed groups, on the same topics.
· Workshops for professionals in the social, technical, estate administration fields, etc.
· Guidance and support in dealings with electricity and gas companies.
· Energy study of the home and delivery of a personalized intervention and improvement plan.
· Orientation and pre-design of renewable self-consumption or energy efficiency solutions.
· Validated list of professionals in the energy field (renewables, renovations, equipment).
· Information on financial solutions available to users.
· Group empowerment sessions for families to share experiences.

The physical offices will serve as demonstration spaces in themselves of the energy transition, giving an example of the benefits of efficiency and sustainability in construction. For this reason, the offices will be located in renovated premises that comply with high environmental criteria: energy certification A, circular economy materials, recycled and recyclable materials, etc.

In addition to fixed offices, the creation of itinerant offices is being considered to offer a local service to neighbourhoods or districts not directly covered by a fixed office. In this way, it is ensured that the entire Valencian population has access to a local energy advisory service, while optimizing the resources used.

The itinerant service will be offered by taking advantage of already existing facilities and public assistance offices, such as, for example, local councils. If necessary, the production of mobile offices (van or stand) is also considered to reach visible points such as squares, markets, etc. The itinerant offices will have a monthly schedule, similar to the mobile Eco parks model.

Finally, this network of physical offices will be accompanied by a digital office that offers online services, includes the information, materials and tools used by the physical offices, and makes it possible to reach a more varied audience in terms of age and geographical location. The main services of this digital office are:

· Remote counselling appointments via videoconferences, phone and mail.
· Online workshops using videoconferencing platforms.
· Training and informational materials: guides, brochures, infographics, etc.
· Tools for self-diagnosis and pre-design of solutions: optimisation of invoices, energy study of the home, photovoltaic potential.

SWOT and CAME analysis

OPORTUNITIES	THREATS
There is growing public interest in energy (bills, renewables...) Previous experience Energy Office	Energy is still perceived as a complicated and non-transparent issue The city is saturated with services and information: difficult to reach
EXPLOTE	**ADAPT**
Synergies with other campaigns and news Replicating first Office of Energy	Working with the associative structure that exists in the neighbourhoods

STRENGHTS	WEAKNESSES
Centralisation of citizen doubts Link between AP, companies and citizens Proximity, trust and neutrality Synergies with other projects	Lack of resources and sustainable business model Dependent on high public investment Need for technical knowledge to be able to solve all kinds of doubts
MAINTAIN	**CORRECT**
Sufficient human resources to maintain advice and local treatment Good relationship with the energy ecosystem	Develop public-private models that favour the sustainability of the model Look for other income: professional fees, special services, courses, etc.

Table 12 – SWOT and CAME analysis of the Deployment of Energy Offices

Justification of the line of action

Why is it an emblematical project in the València energy transition?

The Spanish energy model, based on a centralised production of energy from fossil resources, has shown to have limitations, both at a social, economic and environmental level: rise in energy poverty in Spanish households, lack of awareness and citizen participation in the energy market, continuous increase in energy consumption and greenhouse gas emissions, lack of efficiency in the production and distribution system, significant energy dependence on imported resources.

In order to achieve an ambitious, fast and lasting energy transition, it is necessary to promote social and cultural change at all levels of the city. Once the technology that allows this energy transition has existed for years, and the legislative and political framework has also been adapted to favour it, the awareness and involvement of the entire population in the energy transition becomes important, as a lever definitive change.

The single energy windows allow this involvement and citizen awareness, by offering a service of proximity and trust, at the same time that they become a point of union and dynamism of public-private-citizen initiatives.

Why is it a transformation project of the city, beyond the energy?

The transformative character of the project resides mainly in its commitment to empower citizens and achieve their adherence to a project of which it is a part. For this reason, the project focuses its resources on the training, advice and energy empowerment of citizens, elements that ensure a real and lasting transformation of the city.

In addition, the project aims to transform the city neither in its centre nor in an emblematic or exemplary place, but impacting all its districts and neighbourhoods via the deployment of a network of unique windows that will activate change and be the point of reference in each neighbourhood. And this transformation will be integral given that the energy transition will be the lever to work on social, educational and economic issues, hand in hand with the social actors involved to achieve the transformation of the neighbourhood.

Previous experiences and learning

Mapping of previous initiatives

International	Nacional	Local
Project Powerpoor	Cadiz City Council, Transition Board	València Energy Office
GNE Finance	Olot City Council (HolaDomus)	Offices OMIC (consumer information)
Save the Homes	Basque government (Opengela) El Prat City Council (BCN) Barcelona Energy Advice Points Socaire Madrid Intiam Ruai OSIR, Agencia Extremeña de la Energía	Aeioluz

Table 13 – Mapping of previous initiatives of the Deployment of Energy Offices

Learning

	Question	València Energy Office	Sites for energy advice in Barcelona	HolaDomus, Olot
1	**What are the issues of information offered?**	Right to energy, Bills, Efficiency, Energy rehabilitation, Renewables, Energy culture	Energy efficiency, review of invoices, guaranteeing access to basic supplies, social awareness, workshops and talks, promotion of rights, insertion of labour partners.	Air conditioning, Insulation, Renewables, Smart Homes, Closures, Accessibility, Rehabilitation and refurbishment
2	**What are the most asked questions or the most successful issues?**	Optimisation of invoices, Renewable energies, Social Bonus, management with companies	Processing of the social bonus, changing to a regulated market, eliminating extra services, lowing hired power	Refurbishment, Renewable Energies
3	**What services are the best valuated?**	Individual advice appointment	Personalised advices, active listening, accompaniment	Accompaniment, centralised interlocution and assistance with subsidies
4	**What is the annual budget in each office?**	235.000€	Around 95.000€	
5	**What is the total number of people advised by each office and year?**	1500 (appointments and workshops) + 2300 (other activities))	Data 2019: Nine neighbourhood: 3.546 people/ Sant Andreu-Sant Martí: 2.350/ Sants, Sarrià and Les Corts: 2.568/ Ciutat Vella and Eixample: 2.188/ Horta-Guinardó and Gracia: 2.125/ Total Barcelona: 12.777	335 (advised) + 95 (projects on or done)
6	**How long is an individual appointment assisted?**	45 minutes	45 minutes	
7	**Where does the budget to maintain the offices come from?**	80% city council + 20% European projects	100% municipal inversion	

	Question	València Energy Office	Sites for energy advice in Barcelona	HolaDomus, Olot
8	**Administrative and license procedure competences, some help?**	No	No, we are referral agent to the departments of the competent administrations	Yes, the office is inside the City Council and next to the administration offices
9	**Do they have lists of validated professionals or skills?**	No	No	Yes, 60 registered professionals who meet technical, financial and legal criteria.
10	**What are the most effective ways to get citizenship?**	Mouth to ear, neighbourhood associations, communication campaign	Referral of Social Services or Housing Offices, community axis with mouth to ear talks and workshops.	Visible office at the foot of the street and in the City Council building. Mouth to ear.
11	**What are the main barriers to achieving greater impact?**	Lack of resources (staff, tools, communication), difficulty with multi-family buildings, improving coordination with competent AP services	Lack of resources and staff, to work on prevention and empowerment and not just the emergency. Moving towards a more empowering and less welfare-based model.	
12	**What would you remark about this project as a differentiating feature and key to success?**	Treating energy holistically, being close to the people, working with the neighbourhood structure to gain the population's trust	The circular model proposed is reflected in the "peer to peer" philosophy. The vast majority of workers have been through situations of vulnerability. This means that they can monitor and accompany, based on empathy and being a model for them, it is not only about providing a technical service but putting the person at the centre.	

Table 14 – Learning previous initiatives of the Deployment of Energy Offices

Future visions and objectives in 2030

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Reaching the vast majority of citizens and the neighbourhoods	8 Operative and fixed Energy Offices 2 Operative and itinerant Energy Offices 40% more answered queries per year 5 neighbourhood entities collaborating in each Office (Falles, musical bands, sport clubs...)
Being a key agent in the neighbourhood's dynamics, consolidating public-private-community collaboration	8 Operative and fixed Energy Offices 40% more answered queries per year 100 companies validated as collaborating entities of the Offices 5 neighbourhood entities collaborating in each Office (neighbourhood associations, Falles, musical bands, sport clubs...)
Being a point of reference for the attraction of external public and private funding and the search for partners	At least 50% of the budget at offices is private or European financing 100 companies validated as collaborating entities of the Offices

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Defending the Right to Energy (basic energy minimum) and having succeeded in eradicating energy poverty in the city	Maximum of 5% of energy poverty in the city There is a local strategy towards the Right to Energy 50 homes with energy poverty advised by office and year
Serving as a link between citizens and transformative projects	8 Operative and fixed Energy Offices
That an ecosystem of trusted companies has been created	100 companies validated as collaborating entities of the Offices
Changing the public culture in relation to energy and getting the public to assimilate and master the energy vocabulary	40% more answered queries per year 50 homes in Green Homes by Office and year 40% reduction in residential consumption in the families served 200 kits of micro-measures of energy efficiency distributed by office and year
Generating reference points of information on energy for citizens	Maximum of 5% of energy poverty in the city 40% more answered queries per year
Generating trust in the institutions and establish synergies between departments of the different public administrations by neighbourhood (municipal council, social services centre, health centre...)	Maximum of 5% of energy poverty in the city 50 homes with energy poverty advised by office and year

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Promoting the economy and green and local employment, with special attention to people with difficulties with employment	5 neighbourhood entities collaborating in each Office (neighbourhood associations, Falles, musical bands, sport clubs...) 100 companies validated as collaborating entities of the Offices
Serving as municipal sites with photovoltaics to share energy with vulnerable people or social entities	Maximum of 5% of energy poverty in the city There is a local strategy towards the Right to Energy
Making the energy transition attractive and beautiful (neighbourhood pride)	5 neighbourhood entities collaborating in each Office (neighbourhood associations, Falles, musical bands, sport clubs...)

Table 15 – Future vision and objectives of the Deployment of Energy Offices

Governance and protagonists

The entities shown in this section have been identified through three successive mappings carried out collaboratively with the INGENIO Institute of the Universitat Politècnica de València, the participating entities of the Energy Transition Board and the participating entities of the Specific Commission of this demonstration project, respectively.

However, the list of entities that are protagonists in the different roles and sectors can change and grow with the contributions of more entities and with the progress of their implementation.

	Public sector	Academy	Private Sector	Civil society	Mass Media
Promotors	**VCE, City Council (Climate Emergency and Energy transition)**				
Executors			Companies of services with experience in energy		
Support	City Council (Social Welfare), **The Ships, IVE, IVACE, DG Climate Change**, CEACV, IDAE	**UPV-IIE-Catenerg, ITE**, Professional training centres and educational centres in neighbourhoods	**ASELEC, I-DE, AVAESEN,** Equipment manufacturers, installation companies, companies in the energy sector	**COIICV, FAAVV, CAFVC,** tertiary sector entities, Cáritas, Cruz Roja, Save the Children, Brúfol Association, Alanna Association, Col·legi Oficial de Treball Social de València, neighbourhood shop associations, FAMPA, Universitat Popular	**APIA,** València Plaza, Levante, València Extra, À Punt, EFE Verde
Users				Citizenship, Professionals	

Table 16 – Entities implied in the Deployment of Energy Offices

Itinerary

Line of Action 1: Validation of the model

Task 1.1: Detection and involvement of the most relevant actors

In order to validate the operation, locations, services and other criteria that define the network of energy offices, the task of collaborative definition and validation with the ecosystem of city entities will continue. This task is, therefore, a continuation of the working groups and discussions that have been held in spaces such as the Energy Connecta Network, the Energy Transition Board and the Commission of this demonstration project.

In addition to taking advantage of these already existing groups, this task seeks to continue increasing the participation of other actors and sectors of the city, many of them already identified and classified in the previous section on Governance and protagonists. It is proposed to contact and involve these actors throughout the process of final definition of the model, so that they can contribute to the final result.

Finally, it is also planned to organise open days to announce the replication of offices in the different districts, so that actors and interested people, even at neighbourhood level, can learn about the project and contribute to it. In this sense, the list of relevant actors for each office will be kept up to date, so that synergies and collaboration can be taken advantage of in the provision of services and the promotion of office projects.

T1.2: Detailed definition of services and office management model

Based on the contributions of the Energy Transition Board, already collected in this Strategy, and with the contributions and evaluations of Task 1.1, this task contemplates the detailed definition of the operating model of the offices in the form of contract documents, agreements of collaboration or similar documents that effectively make the project a reality, including the definition of responsibilities of all parties involved.

The network of energy offices will have common objectives, services and management, in accordance with this Strategy, in order to increase the efficiency of the service and take advantage of synergies and resources. However, particularities may be defined for different offices if it is considered appropriate, in accordance with their location, specific objectives, different lines of financing or subsidies to set them up, or public-private synergies that may exist, such as the existence of energy communities or other public, private or social agents that can take over part of the operations of the corresponding district office.

T1.3: Search and definition of public-private financing models

Related to the definition of the operating model, this task defines the funding channels that allow the offices to be launched. For this reason, it is proposed to start from the existing analyses of European projects such as Save the Homes, EuroPACE, Turnkey Retrofit or Opengela.

The main expenses to take into account are: physical space, working staff, office services and materials, marketing and communication, digital tools and decentralisation activities. In terms of income, municipal contributions, regional and state subsidies, European projects, payment of users for advanced services, agreements and collaborations, and remuneration of collaborating professionals are potentially considered.

Different financing lines may exist for each office, according to its location, opening time and synergies found for the provision of its services. Some of these funding channels are summarised in the "Funding options and mechanisms" sections at the end of each line of action.

Total budget of Line of Action 1

Deployment of Energy Offices	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Validation of the model	28.000€	16.500€	11.500€	-	-	-	-
T1.1: Detection and involvement of the most relevant actors	5.000€	5.000€	-	-	-	-	-
T1.2: Detailed definition of services and office management model	18.000€	9.000€	9.000€	-	-	-	-
T1.3: Search and definition of public-private financing models	5.000€	2.500€	2.500€	-	-	-	-

Table 17 – Total budget of Line of Action 1 in the Deployment of Energy Offices

Financing options and mechanism for the Line of Action 1

This axis of preparation, definition and validation of the operating model, due to its preliminary nature, is considered to be financed mainly with the public budget, either:

· With the budget and human resources of local entities, such as the València City Council and València Clima i Energia.

· With regional and national subsidies from the Recovery, Transformation and Resilience Plan, such as Programs 1 and 2 defined in RD 853/2021 and the CE-Aprende Program.

· With resources, technical support and good practices achieved through European projects such as H2020 Save the Homes or HE EBENTO.

Line of Action 2: Preparation of spaces and human teams

T2.1: Identification of spaces for fixed and mobile offices

The network of energy offices is made up of fixed and mobile offices, in addition to having a digital office that supports the physical offices and offers digital services throughout the city. For the location of fixed offices, some criteria will be taken into account such as: geographical coverage throughout the city, energy vulnerability of the population, specific needs of the built-up area, renewable energy potential, and layout of municipal spaces and premises.

There are two different types of mobile offices:

1. Mobile offices, such as vans or stands, which act mainly as dissemination tools and generic information, serving as a link between fixed offices and neighbourhoods and districts where there are no nearby fixed offices.

2. Itinerant offices, such as municipal premises or others already existing in the neighbourhoods, which act as a network of collaborative spaces so that technical staff from the energy offices can offer their services (workshops, advice appointments) with a schedule fixed monthly.

T2.2: Refurbishment of spaces with high efficiency and sustainability criteria

The fixed offices serve as demonstration spaces in themselves of the energy transition, giving an example of the benefits of efficiency and sustainability in construction. For this reason, the spaces where the fixed offices are located will be rehabilitated in accordance with high environmental criteria: Green Guide for environmental measures in public contracting in the field of building the Generalitat, energy certification A, implementation of renewable energies and possible socialisation through energy communities, circular economy materials, recycled and recyclable materials, BES Office Certification, etc. These renovations can be done based on contests of ideas involving entities and citizens.

In addition, the renovations will follow the same image criteria that maintain the aesthetic and conceptual line in all spaces. It is also proposed to produce informative and/or monitoring panels in the offices, which explain the interventions carried out and the results achieved to the users. Finally, priority will be given to emblematic and visible places in the neighbourhoods, which are in disuse or which can be reused, thus serving to regenerate the neighbourhoods and be visible and loved by the neighbourhood.

T2.3: Creation of multidisciplinary teams

The different profiles needed in the offices will be defined in accordance with the services and functionalities finally defined in T1.2. Initially, it is considered necessary to incorporate architects, engineers, social workers, administrators, legal experts and communication experts. The profile of these teams must adapt to the context and priorities of each office and each location.

It is proposed to define common and approved training topics and processes between all the teams in the different offices, taking advantage of work already done in projects such as Save the Homes. It is also considered appropriate to conduct calls and proactive searches in the neighbourhoods where the offices are located to detect local talent.

Total budget the Line of Action 2

Deployment of Energy Offices	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA2: Preparation of spaces and human teams	1.656.000€	584.800€	824.000€	164.800€	-	-	82.400€
T2.1: Identification of spaces for fixed and mobile offices	1.000€	1.000€	-	-	-	-	-
T2.2: Refurbishment of spaces with high efficiency and sustainability criteria	1.648.000€	576.800€	824.000€	164.800€	-	-	82.400€
T2.3: Creation of multidisciplinary teams	7.000€	7.000€	-	-	-	-	-

Table 19 – Total Budget of Line of Action 2 in the Deployment of Energy Offices

Financing options and mechanisms for Line of Action 2

The main cost of this axis is the rehabilitation of spaces to serve as fixed offices and, secondly, the preparation and production of vehicles and materials that can be used for mobile offices. In this sense, apart from the investment that can be made from the local public administration, other contributions from the private, social and public spheres are considered:

· Collaboration agreements with construction companies, electronic equipment suppliers, material suppliers, renewable energy companies, installation companies, etc. which contribute with special prices in the rehabilitation of fixed offices, in exchange for using the spaces as showcases for their solutions, products and best practices.

· There is also the possibility of launching micro-patronage campaigns to collect contributions from citizens, civil society associations or energy communities, who would later benefit from the office's services and could use the space for initiatives related to the energy transition.

· Finally, the different lines of regional and national subsidies for the rehabilitation of buildings and premises, and for the implementation of renewable energies for self-consumption must be taken into account, such as for example: IRTA Plan (GVA), Program 3 of RD 853/2021 (GVA), Aid for self-consumption and storage with renewable energies (IVACE).

Line of Action 3: Preparation of materials, protocols and tools

T3.1: Development of action protocols for the different services

This task includes the preparation of the protocols and manual for the provision of the different services in accordance with the model defined in T1.2. In this way, the working staff will have clear procedures to follow in each case, according to the type of consultation, topic, needs, medium used to attend to the consultation, etc. These protocols also incorporate the relationship between different collaborating entities in the corresponding services and must, therefore, be agreed upon and followed by those same entities to ensure the consistency of the service.

All protocols must incorporate the treatment of people with energy vulnerability in a transversal way, to ensure that all the services provided take them into account and are able to adjust to their needs. This protocol manual is designed as a document that must be flexible and open to change, in order to adapt to the usual changes in the energy sector.

T3.2: Identification and preparation of guides and materials

This task consists of the identification, use and development of didactic and informative materials for citizens and users of the offices. These materials can also be used as support for the working staff when offering the various advisory services. For this, the experience and contributions of the offices' own staff will be used, and materials already existing at the first València Energy Office and other entities and initiatives, such as those shown in section 3, will be used of Previous experiences and learning.

These guides, brochures, infographics, videos, posters, etc. they will be in online and printed format when deemed appropriate, and will be used and shared throughout the network of offices, avoiding duplication of effort.

T3.3: Identification and development of management tools and technical support

This task contemplates the identification, acquisition or development, if necessary, of IT tools for managing files and office users, so that administrative and information management procedures can be simplified, such as: collection of personal data, collection of technical information, storage of supporting documents, signature of informed consent, management of databases for the different topics or services, management of advisory appointments, management of workshops, production of reports, management of commercial offers from collaborating entities, etc.

On the other hand, the acquisition or development of technical support tools for the working staff is proposed, with the aim of automating and streamlining services such as the optimisation of the invoice, the performance of energy diagnostics of the home, the pre-design of photovoltaic installations or the potential study of collective photovoltaic installations.

Finally, the development of simplified technical tools is proposed to be used directly by users, so that they can obtain diagnoses and recommendations independently. In any case, the existence of physical offices and working staff avoids digital divide problems and ensures quality advice for all sectors of the population.

Total budget of Line of Action 3

Deployment of Energy Offices	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA3: Preparation of materials, protocols and tools	98.500€	80.825€	5.050€	5.050€	7.575€	-	-
T3.1: Development of action protocols for the different services	12.000€	12.000€	-	-	-	-	-
T3.2: Identification and preparation of guides and materials	36.000€	36.000€	-	-	-	-	-
T3.3: Identification and development of management tools and technical support	50.500€	32.825€	5.050€	5.050€	7.575€	-	-

Table 19 – Total budget of Line of Action 3 in the Deployment of Energy Offices

Financing options and mechanisms for Line of Action 3

Apart from public funding and the dedication of human resources of the teams that work in the offices, the following funding channels are contemplated for this line:

· Agreements and collaboration agreements for the transfer and use of materials and informative guides that already exist to other initiatives and entities.

· Collaboration agreements for the use and co-design of technical support tools with companies and start-ups that are developing innovative tools in this area.

· European projects in which the development of computer management tools and technical support for the services of the offices is contemplated.

Line of Action 4: Commissioning of the service

T4.1: Individual advice appointments

The offices must act as single windows and central points of energy information in the different districts of the city. For this reason, the individual advice appointments aim to resolve any doubts of the users about any of the topics in the energy field.

These appointments cover services such as: recommendations for optimising electricity and gas bills, rights of users before the energy sector, information on grants and subsidies available, best practices and tips to save energy at home, pre-study of possibilities of individual and collective self-consumption, guidance and support in dealings with electricity and gas companies, preliminary energy study of the home, proposed energy rehabilitation measures, validated list of professionals in the energy field and information on solutions financial resources available to users.

The protocols and tools developed in LA3 will define the procedure for planning and attending to appointments between the working staff, the means of reserving dates by the users, the attention protocols depending on the services requested and the subject matter, the approximate times of attention, etc.

T4.2: Workshops for citizens and professionals

This task complements individual attention with the realisation of group workshops for citizens and professionals around the different topics specified above. These workshops can be held in an open manner for the general public and also in a closed manner for specific groups, such as neighbourhood associations, associations of families from schools and high schools, professionals in the social field, companies in the energy field, estate administrators, local businesses, popular universities, sports associations, clubs, music bands, etc.

Apart from group workshops, the organisation of group empowerment sessions or citizen schools is also considered where users can share their experience, their doubts and their advice with other people in similar situations. In this way, peer learning is facilitated, under the advice and support of the technical staff of the offices.

T4.3: Accompaniment and promotion of demonstration projects

Beyond the advice and information offered in appointments, workshops and group sessions, offices must act as energisers and promoters of demonstration projects with a special transformative nature of the city's energy model. For this reason, the network of offices acts as a link between the demonstration projects defined in this Strategy with citizens and the rest of the city's actors, ensuring that neighbourhood leadership and involvement in the various projects is a reality.

In this sense, the offices orient their services and protocols to align with the demonstration projects in force at any given time and in each neighbourhood, so as to facilitate ownership and leadership by the residents of that neighbourhood. In addition, the offices allow to be the point of connection between the different projects and initiatives, maximising the synergies that can be generated between them.

Total budget of Line of Action 4

Deployment of Energy Offices	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA4: Commissioning of the service	12.950.000€	4.921.000€	5.503.750€	841.750€	841.750€	323.750€	518.000€
T4.1: Individual advice appointments	6.475.000€	3.237.500€	2.266.250€	323.750€	323.750€	-	323.750€
T4.2: Workshops for citizens and professionals	2.590.000€	1.295.000€	906.500€	129.500€	129.500€	129.500€	-
T4.3: Accompaniment and promotion of demonstration projects	3.885.000€	388.500€	2.331.000€	388.500€	388.500€	194.250€	194.250€

Table 20 – Total budget of Line of Action 4 in the Deployment of Energy Offices

Financing options and mechanisms for Line of Action 4

It is considered that the service provided at the energy offices must be a neutral and trustworthy service for users and that, therefore, interested information or any action that could involve a loss of credibility on the part of citizens. In addition, it is considered that it is a citizen service with little direct economic return and that, therefore, it must be supported, at least in part, by public funding to ensure its sustainability. However, the following ways of alternative and complementary financing are considered:

· Financing by the companies awarded the contract for the provision of the service to the offices, based on the definition in the tender document of a flexible payment system based on the objectives and results achieved.

· Financial or in-kind contributions through sponsorship, by public and private entities, of conferences, advice and workshops organised by the offices.

· Collaboration agreements with universities and other educational centres for the use of internships, scholarships, TFGs and TFMs around the services of the offices.

· Financial contribution from citizens through the payment of certain advanced or Premium services, such as the direct management of aid and administrative procedures, or the preparation of technical documentation.

· Economic contribution of the collaborating companies of the offices, through a percentage of the profit that is generated directly from the clients they receive from the offices.

· Regional and national subsidies for the operation of this type of advisory services close to citizens, such as: Red Xaloc (GVA), Programs 1 and 2 of RD 853/2021 (GVA), CE Aprende Program (IDEA).

Line of Action 5: Evaluation and monitoring

T5.1: Measurement of the results and impact achieved

This task seeks to quantify the results achieved by the offices, both in terms of operational aspects, such as number of appointments made, number of users, number of workshops by topic, degree of satisfaction, etc. as in aspects of impact, such as financial savings, energy savings, emissions savings, potential improvement in comfort, promoted economic investments, etc.

To measure and estimate the results, the protocols defined in T3.1 will also contain the qualitative information and the quantitative indicators that must be collected in each service or intervention. These previous potential impact data will be validated by carrying out questionnaires and surveys to a certain percentage of users, so that it can be checked whether the initially estimated results have been met with actions and real savings.

It is also proposed to directly monitor some of the homes that use the offices or to have access to the data of the meters already existing in the houses, so that real data can be extracted on the energy savings achieved.

T5.2: Validation with the city

It is proposed to share the results and indicators of T5.1 in an open manner with the city, through the publication in the format of an annual report and its presentation in a day of presentation of results and debate with citizens and the entities of the city.

In addition, it seeks to share these results in an attractive and visual way, so that the impact and benefits of the offices can be easily understood and this serves as an incentive for the participation of more people.

T5.3: Analysis of disaggregated data to propose improvements and changes

Based on the data from T5.1, which will be collected disaggregated by office and by different services or thematic areas, this task proposes to apply continuous monitoring and improvement processes, based on the relationship between results achieved and resources used, for in order to continue optimising the operation of the offices in an efficient manner.

In this sense, the use of modelling tools is considered, based on experience and on the data collected, which make it possible to predict the behaviour of an office or the entire network if, for example, we change a service for another or if another office is incorporated in another district.

T5.4: Continuity approach and replication of the offices

This task is based on T1.2 and T1.3, but incorporates the results and learnings of tasks T5.1 and T5.3 to redefine and implement an operational and economic model for the network of offices that ensures the sustainability in the long term.

On the other hand, also based on these learnings and success stories, it is planned to continue replicating the model of the energy offices in other neighbourhoods, with the formats that are considered most suitable. The replication of the model in other cities will also be promoted, through the development of a practical guide for the replication of energy offices for public administrations.

Finally, it seeks to use the model of the energy offices to extrapolate it to other areas related to the València 2030 Climate Mission. In this way, this task will study a possible model of a Climate Office that serves as a single window of resolving doubts of the Climate Mission and bringing the transformative projects of the city closer to the citizens.

Total budget of Line of Action 5

Deployment of Energy Offices	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA5: Evaluation and monitoring	103.000€	93.000€	-	7.000€	3.000€	-	-
T5.1: Measurement of the results and impact achieved	30.000€	27.000€	-	-	3.000€	-	-
T5.2: Validation with the city	35.000€	28.000€	-	7.000€	-	-	-
T5.3: T5.3: Analysis of disaggregated data to propose improvements and changes	14.000€	14.000€	-	-	-	-	-
T5.4: Continuity approach and replication of the offices	24.000€	24.000€	-	-	-	-	-

Table 21 – Total budget of Line of Action 5 in the Deployment of Energy Offices

Financing options and mechanisms for Line of Action 5

Apart from the public and own funding of the offices, in the specific area of data collection, management and analysis, the following funding routes are considered, respecting in any case the LOPD and the informed consent of the users:

· Collaboration with public and private entities to take advantage of the economic performance of the data obtained through the operation of the offices.

· Collaboration with public and private entities to facilitate the monitoring of consumption and comfort conditions in users' homes in exchange for privileged access to that data.

Total budget

This budget shows the financial contributions needed to implement the project, both from the public sector and from the private, social and academic sectors.

Deployment of Energy Offices	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
LA1: Validation of the model	28.000€	-	-	-	-	-	-	-	28.000€
T1.1: Detection and involvement of the most relevant actors	5.000€	-	-	-	-	-	-	-	5.000€
T1.2: Detailed definition of services and office management model	18.000€	-	-	-	-	-	-	-	18.000€
T1.3: Search and definition of public-private financing models	5.000€	-	-	-	-	-	-	-	5.000€
LA2: Preparation of spaces and human teams	1.203.000€	66.000€	64.500€	64.500€	64.500€	64.500€	64.500€	64.500€	1.656.000€
T2.1: Identification of spaces for fixed and mobile offices	1.000€	-	-	-	-	-	-	-	1.000€
T2.2: Refurbishment of spaces with high efficiency and sustainability criteria	1.200.000€	64.000€	64.000€	64.000€	64.000€	64.000€	64.000€	64.000€	1.648.000€
T2.3: Creation of multidisciplinary teams	2.000€	2.000€	500€	500€	500€	500€	500€	500€	7.000€
LA3: Preparation of materials, protocols and tools	74.000€	3.500€	3.500€	3.500€	3.500€	3.500€	3.500€	3.500€	98.500€
T3.1: Development of action protocols for the different services	12.000€	-	-	-	-	-	-	-	12.000€

Deployment of Energy Offices	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
T3.2: Identification and preparation of guides and materials	36.000€	-	-	-	-	-	-	-	36.000€
T3.3: Identification and development of management tools and technical support	26.000€	3.500€	3.500€	3.500€	3.500€	3.500€	3.500€	3.500€	50.500€
LA4: Commissioning of the service	-	1.850.000€	1.850.000€	1.850.000€	1.850.000€	1.850.000€	1.850.000€	1.850.000€	12.950. 000€
T4.1: Individual advice appointments	-	925.000€	925.000€	925.000€	925.000€	925.000€	925.000€	925.000€	6.475.000€
T4.2: Workshops for citizens and professionals	-	370.000€	370.000€	370.000€	370.000€	370.000€	370.000€	370.000€	2.590.000€
T4.3: Accompaniment and promotion of demonstration projects	-	555.000€	555.000€	555.000€	555.000€	555.000€	555.000€	555.000€	3.885.000€
LA5: Evaluation and monitoring	-	7.000€	17.000€	7.000€	29.000€	7.000€	17.000€	19.000€	103.000€
T5.1: Measurement of the results and impact achieved	-	-	10.000€	-	10.000€	-	10.000€	-	30.000€
T5.2: Validation with the city	-	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	35.000€
T5.3: Analysis of disaggregated data to propose improvements and changes	-	2.000€	2.000€	2.000€	2.000€	2.000€	2.000€	2.000€	14.000€
T5.4: Continuity approach and replication of the offices	-	-	-	-	12.000€	-	-	12.000€	24.000€
TOTAL BUDGET	1.305. 000€	1.926. 500€	1.935. 000€	1.925. 000€	1.947. 000€	1.925. 000€	1.935. 600€	1.937. 000€	14.835. 500€

Table 22 – Total Budget of the Deployment Energy Offices

Description of the line of action

The 50/50 project is a recognised example of practical cooperation and the application of local initiatives to address the problem of climate change and the energy transition. The idea, already created and tested in Germany in the 90s, boils down to promoting efficiency and energy savings in public schools, so that **50% of the energy savings achieved go back to the schools** through a financial contribution that the centre can use at will, while **the remaining 50% is savings that is reinvested in more energy efficiency measures** in the centre.

It is therefore about promoting a new energy culture to different groups in society (students, teachers, school management team, management team, families...), while achieving energy and economic savings in the short term, making visible the strength of citizen action.
The methodology of the 50/50 program mainly consists of the following phases:

Initial presentation: introduction of the project to the entire educational community (management team, teaching staff, cleaning staff, kitchen staff, families, concierge...) with the exception of students. In this presentation it is emphasized that the students are the key actors of the project and that they are the ones who take the initiative of the project, but the whole community is expected to support them, take into account their proposals and accompany the activities and program initiatives.

Formation of the energy team: it must consist of one or two teachers interested in the project and a group of students (part of a class or an entire class or members of different classes). The caretaker, as well as members of the family association or other people from the community are also recommended to actively participate in the team. The energy team aims to analyse the energy of the centre, propose improvement measures and carry them out. In addition, it takes the initiative throughout the course, ensuring compliance with the measures and passing on the knowledge learned to the rest of the students and the centre's community.

1st session with the energy team: the aim is to convey the objectives to be achieved with the project, such as environmental awareness and the reduction of energy consumption and expenses. In this session, basic concepts of climate change and the energy transition are explained, so that the energy team understands the importance of the problem, the causes and consequences, and how we can contribute to the fight against climate change with our actions at home and at school

2nd session: explanation of the electricity (and gas) bill to the energy team so that they can understand the basic concepts of energy and apply them to the bill of their home or centre. At the same time, a workshop on invoicing can be considered for the teaching staff or the families of the centre.

3rd session: centre lighting study so that the energy team knows the different types of light fixtures that exist, analyses the students' habits regarding their use, identifies the centre's lighting characteristics and calculates the corresponding consumption.

4th session: thermal study so that the energy team knows the centre's heating system, the fuel it uses, the operating hours, the temperature in the classrooms, etc.

5th session: study of electrical and electronic devices in the centre to learn how to analyse the consumption of devices, standby and phantom consumption, the difference between power and energy, etc.

6th session: proposal for improvements and energy saving and efficiency solutions, based on the analyses carried out in the previous sessions. Students must propose solutions and be responsible for applying those measures. Other classes and groups can be involved, beyond the energy team.

Communication and awareness: for the project to have maximum impact, it is important to communicate the diagnosis, problems and solutions to all classrooms and the entire educational community. For this reason, awareness-raising actions are proposed (posters, videos, presentations...) that change the energy culture of the entire centre and encourage good habits.

Evaluation: it is important to measure the impact of the different measures that have been proposed, as well as of the project as a whole. For this reason, surveys can be used to assess the impact of perception and awareness, in addition to quantitatively analysing the savings achieved in the centre's energy bills.

Based on the experience of more than 4 years implementing this program in the city, it is proposed to change the scale and expand the focus of the 50/50 program, implementing it in other centres, groups and entities in the city. It is, therefore, not only about scaling the program so that it reaches all the educational centres of València, but also about offering, at city level, an energy education service and public awareness about energy saving and the environmental consequences, which it can be applied to other groups and public and private entities.

SWOT and CAME analysis

OPPORTUNITIES	THREATS
Multiplier effect throughout the city Alignment with a new democratic energy culture	Educational community saturated with initiatives Different administrations and departments involved
EXPLOTE	**ADAPT**
Aligning the program with other demonstration projects and initiatives in the neighbourhoods	Looking for other sectors and areas where it can be applied Ensuring agreement of all involved
STRENGHTS	**WEAKNESSESS**
Established and tested methodology Potential for students (and other participants) to replicate at home, with double impact	Need of resources for revitalisation Lack of continuity with schools Lack of experience outside high schools and schools
MAINTAIN	**CORRECT**
Taking advantage of existing methodology to scale, and also transfer to other areas Giving tools that can be applied at home	Getting that part of the profits “pay” the investment to ensure sustainability Providing support after the 1st year Creating pilots in other entities (CSR companies)

Table 23 – SWOT and CAME analysis of the 50/50 Program

Justification of the line of action

Why is it an emblematic project of the València energy transition?

In order to place citizens at the centre of the new energy model, at the same time that the model is undergoing significant technological and regulatory transformations, it is necessary to deepen citizen education and training regarding energy. The 50/50 program affects this energy education of different groups in society, starting with the youngest, but also including adults, such as families, teachers, workers, staff of other non-educational centres, etc.

This project is key to promoting the necessary change in the city's energy model and making the energy transition in València a reality for its inhabitants. On the one hand, in the short term it is possible to reduce consumption and the carbon footprint of the city's tertiary sector thanks to the easy-to-implement measures. On the other hand, it is possible to multiply the impact in the long term thanks to the learning and application of good energy habits and practices by the participants, in their homes and in their day-to-day life.

It is considered that the simple replacement of energy equipment or the energy reform of tertiary buildings would not be a transformative project, but the change in the energy culture of the citizenry around these concepts has a transformative capacity that is multiplied.

Finally, this has been chosen as an emblematic project of the València energy transition thanks to its track record and proven success. The program 50/50 has proven to be a project that succeeds in mobilizing economic savings that far exceed the necessary investments, at the same time that it succeeds in transferring energy knowledge and culture to different population sectors. This is why it is considered necessary to take a leap of scale and ambition to transfer the program to many more entities, areas and companies in the city.

Why is it a transformation project in the city, beyond energy?

The focus on education and awareness represents the transformative ambition of the project 50/50. Impacting a new energy culture and transforming the daily habits of citizens with regard to energy has the potential to transform the city in a radical and lasting way, with special focus on the multiplier effect that occurs with the learning of good habits that involve a direct and short-term saving of money, energy and greenhouse gas emissions.

On the other hand, the project involves raising awareness among citizens (young and old) around energy as part of sustainability. The program makes it possible to link sessions, objectives and improvement measures with other areas that the centres want to promote, such as recycling, sustainable mobility, ambient air quality, plant-based, local and seasonal food, etc. The program, therefore, can serve as a gateway to deal with many other topics that are interrelated with the power of our daily acts.

Therefore, each program 50/50 can be linked to other initiatives developed in the neighbourhoods, related to the energy transition and to other areas of sustainability, under the framework of a global project of "Neighbourhoods in Transition".

Previous experiences and learning

Mapping of previous initiatives

The program 50/50 has been tried and tested in a variety of countries and municipalities in Europe. The EURONET 50/50 project, which tested the methodology 50/50 in more than 50 European schools between 2010 and 2013, won the European Sustainable Energy Award. Later, the EURONET 50/50 MAX project extended the scope of the program to more than 500 schools and nearly 50 public buildings in 13 countries of the European Union.

In the city of València, the City Council has been promoting the 50/50 project in the city's educational centres for years. In 2017, it began to energise the project in 5 educational centres; in 2018, it was replicated in 10 other schools; in 2019, the València Energy Office started the #ElMeuCentreEnTransició project with a similar methodology applied to 5 schools and high schools; in the 2020-2021 academic year, we worked with 15 other schools and 7 high schools in the city. In the 2021-2022 academic year, in addition to working again with 15 schools and 7 high schools, we are working for the first time with the Universitat Popular of Aiora, creating an energetic team with representation from different courses and classrooms.

Another experience to highlight is Rubí Brilla, a pioneering project 50/50 in Spain that evolved the project in an ambitious way to work in Rubí schools incorporating real-time monitoring of consumption, to accompany awareness of the entire educational community. Finally, as an example of scaling up the experience on a large scale, the implementation of the program 50/50 in more than 30 municipalities in the province of València, promoted by the Diputació de València, stands out.

Learning

From the experience of the Provincial Council of València and the Aeioluz cooperative as a provider of the revitalisation service of the program to more than 30 municipalities during the 2021-2022 academic year, in addition to the experience of the València City Council and the València Clima i Energia, the Commission has been able to extract the following assessments and learnings.

What motivates schools and centres to participate in the program? What arguments are key to motivating the participation of the people in the centres?

It is a zero-cost action for schools, it involves direct savings just by changing habits, it has an element of school cohesion and it supports the education and training of students.

Moreover, it is important to focus on specific actions and work with real data so that all parties see the reality of the work being done and, above all, see the impact of the project on the school's day-to-day life and on the savings achieved.

In addition, for teachers, it is convenient to relate the project sessions to the work done by the students in other subjects, give value to the educational part of the project and try to include it in the educational curriculum.

What factors contribute to the success of the program in the participating schools?

It is vitally important to give weight to the participative and transparent part of the program, so that school professionals accept and promote it. Affective dedication to the project on the part of the facilitating team is also key to success.

Are the centres interested in setting up energy communities in a second phase?

Yes, many of the participating centres in the current editions are interested in the possibility of installing solar panels on the roofs and, in addition, studying the possible socialisation of these plants through energy communities in which the neighbours can participate. A pioneering example is Ballester Fandos School in Malvarrosa where, after participating in the 50/50, it has been considered to create an energy community with the collaboration of the school's AMPA association of the student's mothers and fathers), the Association of Neighbours of in Malvarrosa, installation and engineering companies, Social Services, neighbourhood NGOs and the València Clima i Energia.

What is the role of each actor within the centres (students, teachers, AMPA...)?

The energy teams are made up of AMPA, some teachers, non-educational staff and 5th and 6th grade students. It is important that there is the same number or more students than adults in the team. The leadership role belongs to the students and the rest of the centre's professionals must accompany and facilitate the dynamics, the implementation of actions, improvements, etc.

What have been the savings results achieved in previous editions?

The experience of previous editions with schools is that savings of 15-18% were achieved just by changing habits, and savings of 34-38% were reached in some cases.

Other positive aspects to highlight?

There is no extra cost for the City Council, beyond hiring the company that will act as the promoter of the project. Only with the savings achieved by changing habits does the City Council achieve a financial return far superior to the investment made.

What issues are most relevant to the success of the program?

Difficulty in accessing the real consumption data of the centres, due to the low availability of the City Councils or having to go through complicated administrative procedures.

Usually there is a reduced participation of the AMPA, by their own decision. It is not a major barrier to the program in the centre, but it does reduce the potential of replicating the energy habits and knowledge acquired in the program in the families' homes.

What might be the interest of the private sector or other entities in participating in the program? Do you only work with public schools?

Aeioluz indicates that they are starting to work on similar programs with private companies, based on energy awareness with employees and building managers, at the same time that they evaluate their offices and reduce energy costs. They also work directly with chartered schools, and the program is very similar to what they do in public schools contracted by the public administration. The València Clima i Energia works with public institutes under the program El Meu Centre En Transició.

The Commission considers it very interesting to work in other areas, such as private companies, football clubs, music bands, etc.

Future visions and objectives towards 2030

FUTURE VISION (QUALITATIVE)	**QUANTITATIVE OBJECTIVES**
Involving other educational and non-educational groups and entities, throughout all the neighbourhoods in the city	1 private company has participated in the Program in each district 1 additional group participates in each district: e.g., museums, educational cooperatives, canteen service companies 10% of the participation annual increase
Increasing the energy efficiency in the centres, getting closer to their climate neutrality	15 kWh/m² maximum year in the refurbished buildings 10% annual decrease of CO2 emissions regarding the participatory entities 50% of the participatory entities have synergies with initiatives such as mobility, consumerism, waste... 90% of the participatory entities with their own roof install renewable energies
Promoting renewable self-consumption and Neighbourhood Energy Communities around the participative centres	90% of the participatory entities with their own roof install renewable energies 50% of the self-consuming entities give part of the production to energy communities

FUTURE VISION (QUALITATIVE)	**QUANTITATIVE OBJECTIVES**
Reaching all the education centres in the city	90% of public and private schools in the city have participated in the program
	80% of public and private universities in the city have participated in the program 60% of public and private high schools in the city have participated in the program
Establishing and making sure about the roles of the energizer and of the Program technical mentor	80% of the cost of implementing the project is financed by own savings and private collaborations
Establishing collaborative networks in neighbourhood levels to disseminate the program (e.g., Municipal Councils of the District)	1 additional group participates in each district: e.g., museums, educational cooperatives, canteen service companies 80% of satisfaction and pride from people that participates in the program 10% of the participation annual increase
Securing the continuity of the program in the participatory centres and entities	50% of the participatory entities keep their continuity in the program
Implanting the program as a centre project, with contents about sustainability inside the formative program in a transversal way.	50% of the participatory educational centres include the program inside their didactic programs in a transversal way
Making sure the Program specifically involves and benefits families in situation of vulnerability.	80% of the programs in the educational centres have specific sessions about the right of energy

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Contributing to the fact that all the citizens have a proper education on energy transition	80% of satisfaction and pride from people that participates in the program 10% annual decrease of CO2 emissions regarding the participatory entities
Developing an accreditive distinctive for the participatory entities of the program and a prize for the one with more savings.	80% of satisfaction and pride from people that participates in the program 10% of the participation annual increasen
Developing saving bonuses for local and sustainable products (e.g., green products in municipal markets)	90% of the savings are reinverted in sustainability
Ensuring enough municipal staff for the implantation of refurbishment and renewables measures in public centres.	80% of the cost of implementing the project is financed by own savings and private collaborations
Implanting an economically sustainable model base on the savings achieved in the centres and the attraction of available external resources	80% of the cost of implementing the project is financed by own savings and private collaborations 30% of the participatory centres offer flexibility to trade with financial return
Having an energy diagnosis of the tertiary buildings parc	100% of the tertiary buildings in the city are energetically diagnosed

Table 24 – Future vision and objectives of the Program 50/50

Governance and coordination

The entities shown in this section have been identified through three successive mappings carried out collaboratively with the INGENIO Institute of the Universitat Politècnica de València, the participating entities of the Energy Transition Board and the participating entities of the Specific Commission of this demonstration project, respectively.

However, the list of entities that are protagonists in the different roles and sectors can change and grow with the contributions of more entities and with the progress of their implementation.

	Public sector	Academy	Private sector	Civil society	Mass media
Promotors	**VCE, City Council (Climate Emergency and Energy Transition), Diputació de València, GVA (Climate change)**				
Executors			Dynamic companies of the program, Energy sector companies, installing companies		
Support	GVA (Educational infrastructures), City Council (Central Technical Services), **IVE, The Ships, IVACE,** Institut Valencià de la Joventut, CEACV	**UPV-IIE-Catenerg,** UV, **ITE, CEFIRE,** Càtedra Dades Obertes, Càtedra Terra Ciutadana, Escola de Magisteri	**I-DE,** Equipment manufacturers, financial companies, Cámara Comercio València, Business associations	FEDADI, Neighbourhood shops associations, FAMPA, Universitat Popular, Unió de Consumidors	**APIA,** València Plaza, Levante, València Extra, À Punt, EFE Verde
Users		Educational centres	Educational centres	Working staff and users of the participatory buildings, Citizenship, Sport clubs, Falles, neighbourhood music bands associations	

Table 25 – Entities involved in Program 50/50

Itinerary

Line of Action 1: Identification and implication of participatory entities

Task 1.1: Communication of the Program

In collaboration with the demonstration project "Massive energy culture campaign", the aim is to develop a communication campaign that makes the program and the benefits of participating in it visible, beyond the already knowledgeable educational public. In addition to raising the profile of the program among potentially interested entities, the aim is to make the public aware of it so that they can claim participation from their entities.

In order to achieve an effective impact, it is proposed to design and develop communication material (leaflets, videos, posters) specific to each sector (education, private companies, associations, music bands, etc.).

Finally, it is proposed to organise an annual meeting with all the centres and entities participating in the program on an emblematic date such as Environment Day, to share experiences, weave ties and make visible the work done within the program and the results achieved, d according to tasks T5.1 and T5.3.

T1.2: Creation of the distinctive and prize for the participatory entities.

It is proposed to create a badge specific to the program for all the entities that participate, linked to the València 2030 Climate Mission Alliance, so that the entities can display it on their website, premises, building or offices, as a sign of their involvement in making València a climate-neutral city.

On the other hand, it is proposed to create an annual economic prize for the entity or entities that stand out the most in the implementation of the program, in accordance with the savings achieved, the degree of involvement of the participating people, or other innovative aspects of program implementation. It will be encouraged that this award is dedicated to projects of the right to energy and the fight against energy poverty at local level, in relation to T4.2.

T1.3: Identification and implication of participatory entities

This task seeks to encourage the participation of entities from all areas of the city, so that the program permeates the entire private, public and social structure. The aim is to identify the most relevant entities in each area and classify and involve them in order to achieve a heterogeneous mass of participating entities.

In the educational field, the involvement of schools, high schools, universities and other educational entities is considered. The possibility of linking the program with the UPV Vera Campus decarbonisation project stands out.

In the private sector, the potential to work with business associations and applying the program in offices, tertiary buildings or industrial estates is highlighted. With a view to involving private companies, it highlights the visibility they can obtain through participation, the alignment with their CSR policies and the financial savings achieved thanks to the improvement of employees' energy habits.

Finally, in the field of civil society, it is proposed to energise the program in social groups, such as casals fallers, neighbourhood associations, musical bands and other citizen associations.

Total budget of Line of Action 1

Program 50/50	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Identification and implication of participatory entities	445.000€	225.000€	180.000€	40.000€	-	-	-
T1.1: Communication of the Program	400.000€	180.000€	180.000€	40.000€	-	-	-
T1.2: Creation of the distinctive and prize for the participatory entities.	5.000€	5.000€	-	-	-	-	-
T1.3: Identification and implication of participatory entities	40.000€	40.000€	-	-	-	-	-

Table 26 – Total Budget of Line of Action 1 in Program 50/50

Financing options and mechanisms for Line of Action 1

For this Line of Action, the following funding channels are considered:

· Percentage of all economic savings achieved by all participating entities could finance the economic prize of T1.2.

· Collaboration and sponsorship of entities for the financing of communication actions and the organization of promotional events, defined in T1.1.

Line of Action 2: Collaboration, networks and teams

T2.1: Identification and involvement of collaborating neighbourhood actors

This task contemplates collaboration with actors who can contribute to the promotion and implementation of the program in each neighbourhood. For example, the involvement of neighbourhood associations, consumer groups, Family Associations, local business groups, Popular Universities, etc. they can support the communication and dissemination of the program.

On the other hand, it also seeks to establish synergies with other programs that can be developed in the same entities, such as actions to promote sustainable and non-motorised mobility (for example, school paths), improvement in the management and recycling of waste, promotion of sustainable, local and seasonal consumption, etc.

T2.2: Creation of multi-disciplinary teams for implementation

The program implementation teams mainly have three profiles: the coordinator is the person in charge of organising, planning and managing the development of the sessions and actions in each centre or entity, as agreed between the different parties involved; the facilitator or facilitators of the program are the people in charge of energising the training sessions, involving and motivating the participants and providing educational support to the program; the technical mentor or mentors provide technical support to the participants around technical issues of energy efficiency, renovations, analysis of consumption and invoices or possibilities of renewable self-consumption.

The creation of the teams necessary for the revitalisation and execution of the program must take into account and take advantage of the own staff of the participating entities (Universities, high schools, companies with technical staff...). With the involvement of this staff, we seek to increase the legitimacy of the program, ensure its continuity in the medium term and take advantage to improve the professional skills of the staff.

T2.3: Proposal for financing, collaborations and sponsorships

In relation to T2.1, and taking into account the different program models and participatory entities that can emerge from T1.3, this task defines the funding channels that allow the

programs to be launched. It must be taken into account that the main cost of executing this project is the cost of the personnel of the teams defined in T2.2, since the works and infrastructure actions can be financed from the savings achieved by own changes in energy habits caused.

For each program there may be different lines of financing and sources of investment, according to the implementation methodology, the beneficiary entity of the program or the possible collaborations and synergies in the neighbourhood. The main objective is to ensure the economic sustainability of the program, both in public and private entities.

These funding channels are summarised in the "Financing options and mechanisms" sections at the end of each line of action.

Total budget of Line of Action 2

Program 50/50	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA2: Collaboration, networks and teams	42.000€	40.000€	-	2.000€	-	-	-
T2.1: Identification and involvement of collaborating neighbourhood actors	16.000€	16.000€	-	-	-	-	-
T2.2: Creation of multi-disciplinary teams for implementation	16.000€	16.000€	-	-	-	-	-
T2.3: Proposal for financing, collaborations and sponsorships	10.000€	8.000€	-	2.000€	-	-	-

Table 27 – Total budget of Line of Action 2 in Program 50/50

Financing options and mechanisms for Line of Action 2

This Line of Action, to contain actions still in the preparatory and planning phase, does not require large investments. However, the following opportunities are considered to facilitate its financing:

· Collaboration with professional associations (architects, surveyors, engineers, telecommunications) and business associations (ASELEC) to form part of the T2.2

multi-disciplinary teams and provide technical support to the programs.
· Taking advantage of the technical staff of the participating entities themselves (technical students, sector professionals) to form part of the T2.2 multi-disciplinary teams and provide technical support to the programs.
· Take advantage of methodological and financial analyses of previous and current experiences, carried out in European projects such as MAtchUP, as a starting point for T2.3.

Line of Action 3: Development of methodologies and materials

T3.1: Development of methodologies and protocols

This task seeks to define the protocols and the way the program operates, adapted to each participating entity and each situation. It is proposed to develop a practical manual for the application of the project, with the contact and communication protocol with the entities, methodology of training and operation of the energy team, planning of training sessions, directory of materials and resources for tasks T3.2 and T3.3 applied to each session, definition of objectives and indicators, dashboard and monitoring of the program, methodology for calculating impact and savings, time planning, and any other information that may allow the successful implementation of the program and efficiently.

This practical manual has the double objective of guiding the implementation of this demonstration project as defined in Line of Action 4, but also of allowing the replication of this program in other areas or cities, thus facilitating an impact beyond the initial scope of the project.

T3.2: Development of educational support materials

The practical manual developed in T3.1 is supported by educational materials created in this task. Therefore, it is better to start by identifying and adapting, if necessary, existing materials, such as the Guide #ElMeuCentreEnTransició or the Unitat Didàctica (Didactic Unit) of the Energy Office or materials from other initiatives identified in section 3 " Previous experiences and learning". Of course, these materials will not be intended solely for the public of educational centres, but also to support the training sessions held at public, private or social entities that participate.

In addition, specifically for the educational field, and thanks to the collaboration with educational entities such as FAMPA and CEFIRE, didactic proposals will be developed that are aligned with the educational curriculum of the centres, so that the implemented program can be assumed as a centre project and take advantage of synergies with other subjects and centre activities.

T3.3: Development of technical support materials and tools

On the other hand, the T3.1 manual is also supported by materials and technical tools, which will also be based on already existing resources, such as the RenovEU tool and its technical sheets (GVA-Save the Homes), the Impulse+ tool (IVE) and the Guide for climate plans in

educational centres (CEACV). The aim is to have a list of rehabilitation and renewable energy actions classified by cost, impact on comfort and potential savings, to fuel their implementation in T4.3.

Collaboration with professional associations (architects, surveyors, engineers, telecommunications) and business associations (ASELEC) will also be encouraged to collect and validate possible technical materials.

Finally, this task also contemplates the development of a pre- and final (self-)evaluation questionnaire, related to the definition of objectives and indicators of T3.1, which standardises the calculation of impacts and savings caused by the program.

Total budget of Line of Action 3

Program 50/50	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA3: Development of methodologies and materials	54.500€	39.100€	7.700€	5.375€	2.325€	-	-
T3.1: Development of methodologies and protocols	8.000€	8.000€	-	-	-	-	-
T3.2: Development of educational support materials	16.000€	12.800€	1.600€	800€	800€	-	-
T3.3: Development of technical support materials and tools	30.500€	18.300€	6.100€	4.575€	1.525€	-	-

Table 28 – Total budget of Line of Action 3 in Program50/50

Financing options and mechanisms of Line of Action 3

When implementing this Line of Action, the following funding avenues or opportunities are considered:

· Collaborations, agreements and use of existing materials and tools for tasks T3.2 and T3.3.

· Collaboration with professional associations (architects, surveyors, engineers, telecommunications) and business associations (ASELEC) to develop, adapt or validate materials and tools.

Line of Action 4: Implementation of the program

T4.1: Creation of energy teams and dynamism of work sessions

This task includes the implementation of the program following the protocols and materials defined in Line of Action 3, in all participating entities (T1.3). It will be followed, although adapted to each participant and each situation, the phases defined in section 1 "Project description": initial presentation, training of the energy team, 1st session on objectives and awareness, 2nd session on the electricity and gas bill, 3rd session on lighting, 4th session on heating and cooling, 5th session on electrical and electronic devices, 6th session on improvements and proposals, communication and awareness actions for the entire centre or participating entity and final task evaluation of results.

In the creation of the energy teams, it must be ensured that the majority of the people who use the facilities are part of it and not only the management staff of the building or the offices. In addition, the importance of ensuring that the decisions taken and the learnings of the energy team reach all the users of the facilities, through communication and promotion actions, such as talks, presentations, posters, etc.

T4.2: Linkage with the right to energy and the fight against energy poverty

With the aim of linking the project with the fight against energy poverty, it is proposed to include in the programming of sessions, specific content on energy rights and tools and advice to ensure the right to energy of the vulnerable population: optimisation of household bill, Social Security, good energy habits at home, etc.

On the other hand, work will be done so that the energy teams identify and propose actions to fight energy poverty at the local level, in collaboration with the Municipal Centres of Social Services and with social NGOs in the neighbourhoods, to facilitate the donation of part of the savings or awards achieved (T1.2) to these projects.

T4.3: Implementation of rehabilitation measures and installation of renewables

This task contemplates the implementation of the measures and technical solutions proposed by the energy team in T4.1, with the support of the technical mentoring of T2.2 and the technical materials of T3.3. These renovations and renewable installations will be financed thanks to the savings achieved by the non-technical measures promoted and thanks to the mechanisms described below.

Thanks to these measures, and by adding them to the good energy habits of the people who use and manage the buildings and facilities, it is sought that the buildings approach the criteria of Buildings with Almost Zero Consumption. Among the potentially implemented actions stand out: the change of air conditioning equipment, the improvement of windows and the thermal envelope of buildings, the installation of renewable energy, solutions based on nature and home automation and consumption automation solutions.

T4.4: Dynamics and participation in Neighbourhood Energy Communities

In collaboration with the demonstration project of Neighbourhood Energy Communities, this task seeks to socialise the photovoltaic installations implemented in T4.3, sharing part of the production with the consumers around them, under the figure of the energy communities and collective self-consumption.

Finally, it is proposed that part of the socialised production be reserved for people in energy vulnerability, as a project to fight against energy poverty following the work of T4.2.

Total budget of Line of Action 4

Program 50/50	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA4: Implementation of the Program	39.782.013€	4.283.461€	31.462.949€	3.253.043€	-	586.920€	195.640€
T4.1: Creation of energy teams and dynamism of work sessions	521.830€	260.915€	156.549€	104.366 €	-	-	-
T4.2: Linkage with the right to energy and the fight against energy poverty	52.183€	41.746€	-	10.437 €	-	-	-
T4.3: Implementation of rehabilitation measures and installation of renewables	39.128.000 €	3.912.800 €	31.302.400 €	3.130.240 €	-	586.920 €	195.640 €
T4.4: Implementation of rehabilitation measures and installation of renewables	80.000 €	68.000 €	4.000 €	8.000 €	-	-	-

Table 29 – Total budget of Line of Action 4 Program 50/50

Financing options and mechanism for Line of Action 4

This Line of Action is the one that requires the largest budget of the entire project. However, it also offers the opportunity to take advantage of various funding channels and subsidy lines, such as:

· Collaboration agreements with professional associations (architects, surveyors, engineers, telecommunications) and business associations (ASELEC) for the execution of training sessions (T4.1) or advice on technical measures (T4. 3).

· Program 3 of RD 853/2021 (GVA) to subsidize the cost of rehabilitation works in buildings.

· Subsidies for renewable installations or the promotion of energy communities, such as those approved with RD 477/2021 (GVA-IVACE) or the CE-Implementa program (IDAE)

· Financing solutions and "turnkey" services offered by public and private rehabilitator agents who assume the financing needs to carry out the works without the need to make investment on the part of the property owners.

· Financial entities, banks and savings banks that finance rehabilitation works with preferential conditions under the agreement with the Official Credit Institute approved in RD 19/2021.

· Contribution of the entities and companies that benefit from the program, thanks to the alignment with their CSR policy or the use of professional staff or the technical students of the entities.

· Subsidies from the public administration, such as the City Council of València, the Generalitat Valenciana or the Diputació de València, to finance the management, revitalisation and operational costs of the program.

· Crowdfunding with citizens and people who use the program in exchange for being beneficiaries of the program and promoting technical measures that benefit them in their facilities or neighbourhoods.

· "Product as a service" business model, so that companies install innovative energy solutions (for example, photovoltaic pergolas) in a mobile way between the participating entities to demonstrate their operation in exchange for visibility..

Line of Action 5: Monitoring and growing

T5.1: Evaluation and visibility of the savings achieved

Following the methodology of T3.1 and the evaluation questionnaire of T3.3, the objective is to evaluate the results achieved by the program in each entity, mainly in terms of economic, energy and emissions savings. These results will be published openly to make visible the impact and benefits of participating in the program, so that more entities are motivated to participate. In order to obtain the data necessary to evaluate the savings, priority will be given to the use of counters, invoices and information already existing in the entities. However, the installation of smart meters and comfort sensors is also contemplated in those entities that want a more thorough analysis of the impacts.

In addition, these results will be used to award T1.2 prizes, be shared at the T1.3 annual meeting and select the successful cases and ambassador entities of the T5.3 program.

T5.2: Continuity of the program in the participatory entities.

This task has a dual purpose. First of all, ensure that the technical proposals of T4.3 get the necessary budget and are implemented. Secondly, I will maintain periodic social and training actions at the entities participating in the program, so as not to lose the cultural impact, update content and training when necessary and continue to involve more users.

In this sense, it is proposed to reward with T1.2, or make visible as ambassador entities in T5.3, the entities that show a continuous and recurring participation in the program, as a sign of their commitment.

T5.3: Selecting ambassador entities to make the results visible.

Based on the results observed in T5.1, this task seeks to select the success cases and best practices to be made visible as ambassadors of the program, so that they are incorporated into the communication materials and events and serve as an inspiration to others.

In addition to the numerical results achieved, other aspects will be taken into account when selecting ambassador entities, such as innovative aspects in the application of the program, predisposition of the entity in explaining its case and participating in communicative actions or potential transfer of experience to other entities in the field.

Total budget of Line of Action 5

Program 50/50	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA5: Monitoring and growing	298.437 €	135.408 €	114.254 €	44.860 €	3.914 €	-	-
T5.1: Evaluation and visibility of the savings achieved	78.275 €	7.827 €	58.706 €	7.827 €	3.914 €	-	-
T5.2: Continuity of the program in the participatory entities	185.162 €	92.581 €	55.549 €	37.032 €	-	-	-
T5.3: Selecting ambassador entities to make the results visible	35.000 €	35.000 €	-	-	-	-	-

Table 30 – Total budget of Line of Action 5 in Program 50/50

Financing options and mechanisms for Line of Action 5

In this Line of Action, the following funding routes are considered, respecting in any case the LOPD and the informed consents of the people and user entities:

· Sponsorship or mixed financing of actions or communication materials by the ambassador entities in exchange for making visible their efforts and their results in saving and fighting against climate change.

· Collaboration with public and private entities to take advantage of the economic performance of the data obtained in T5.1.

· Collaboration with public and private entities to facilitate the monitoring of consumption and comfort conditions of the participating entities, in exchange for privileged access to this data.

· Budget for rehabilitation subsidies or renewable installations that include monitoring costs.

Total budget

This budget shows the financial contributions needed to implement the project, both from the public sector and from the private, social and academic sectors.

Program 50/50	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
LA1: Identification and implication of participatory entities	60.000 €	55.000 €	55.000 €	55.000 €	55.000 €	55.000 €	55.000 €	55.000 €	445.000 €
T1.1: Communication of the Program	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	400.000 €
T1.2: Creation of the distinctive and prize for the participatory entities.	5.000€	-	-	-	-	-	-	-	5.000€
T1.3: Identification and implication of participatory entities	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	40.000€
LA2: Collaboration, networks and teams	14.000 €	4.000 €	4.000 €	4.000 €	4.000 €	4.000 €	4.000 €	4.000 €	42.000€
T2.1: Identification and involvement of collaborating neighbourhood actors	2.000€	2.000€	2.000€	2.000€	2.000€	2.000€	2.000€	2.000€	16.000€
T2.2: Creation of multi-disciplinary teams for implementation	2.000€	2.000€	2.000€	2.000€	2.000€	2.000€	2.000€	2.000€	16.000€
T2.3: Proposal for financing, collaborations and sponsorships	10.000€	-	-	-	-	-	-	-	10.000€
LA3: Development of methodologies and materials	4.000 €	23.000 €	1.500 €	1.500 €	20.000 €	1.500 €	1.500 €	1.500 €	54.500 €
T3.1: Development of methodologies and protocols	4.000€	-	-	-	4.000€	-	-	-	8.000€
T3.2: Development of educational support materials	-	8.000€	-	-	8.000€	-	-	-	16.000€
T3.3: Development of technical support materials and tools	-	15.000€	1.500€	1.500€	8.000€	1.500€	1.500€	1.500€	30.500€

Program 50/50	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
LA4: Implementation of the Program	54.781 €	3.741.722€	4.011.816€	4.194.373€	8.233.373€	8.225.585€	7.761.122€	3.559.241€	39.782.013€
T4.1: Creation of energy teams and dynamism of work sessions	40.710 €	47.020 €	52.560 €	109.430 €	109.430 €	102.350 €	51.020 €	9.310 €	521.830 €
T4.2: Linkage with the right to energy and the fight against energy poverty	4.071 €	4.702 €	5.256 €	10.943 €	10.943 €	10.235 €	5.102€	931€	52.183€
T4.3: Implementation of rehabilitation measures and installation of renewables	-	3.680.000€	3.944.000€	4.064.000€	8.103.000€	8.103.000€	7.695.000€	3.539.000€	39.128.000€
T4.4: Implementation of rehabilitation measures and installation of renewables	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	80.000 €
LA5: Monitoring and growing	6.107 €	16.124 €	21.657 €	35.444 €	46.387 €	56.268 €	58.803 €	57.649 €	298.437 €
T5.1: Evaluation and visibility of the savings achieved	6.107 €	7.053 €	7.884 €	16.415 €	16.415 €	15.353 €	7.653 €	1.397€	78.275 €
T5.2: Continuidad del programa en las entidades participantes	-	4.071 €	8.773 €	14.029 €	24.972 €	35.915 €	46.150 €	51.252 €	185.162 €
T5.3: Selecting ambassador entities to make the results visible	-	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	35.000€
TOTAL BUDGET	138.888€	3.839.846€	4.093.973€	4.290.317€	8.358.760€	8.342.353€	7.880.425€	3.677.390€	40.621.950€

Table 31 – Total budget of Program 50/50

Description of the line of action

A Carbon Neutral District (CND) can be a neighbourhood, a town or a specific area of the city that achieves a high degree of energy self-sufficiency, a decarbonisation of all its activity and an absorption of CO2 emissions, so that its clean greenhouse effect emissions are zero.

To achieve this, it is necessary to unify a multitude of transformative initiatives to apply them in a coordinated and ambitious manner in the same area of the city. In this way, the aim is to enhance the synergies between them and achieve a multiplier effect of transformation of the different sectors and daily areas of the lives of the people who live there.

Advice and communication: climate neutrality implies a complete social and cultural transformation of the district, so that citizens completely change their way of living towards sustainability. For this reason, communication and public awareness are key elements. In addition, it is proposed to open a single window in the district, which acts as a centraliser for doubts and a link between the administration and citizens and private companies.

Sustainable mobility: mobility is responsible for approximately 50% of emissions in the city. For this reason, a neutral district must radically transform the type of travel and modes of transport used there, replacing traditional vehicles, based on fossil fuels, with active, collective and/or electric modes of transport. In addition, a pacified urbanism designed under the "València of 15 minutes" strategy manages to reduce the need for travel.

Energy rehabilitation: around 30% of the city's emissions occur in buildings. For this reason, the energy improvement of the building stock, both public and private, in the residential and tertiary sectors must be encouraged. Through advice, public-private collaboration, group purchases and the launch of subsidies and financial aid, the aim is to produce a wave of renovation of the district's building stock.

Renewable energies: in addition to acting on the energy efficiency of buildings and improving citizen habits to reduce energy consumption, it is necessary to produce a large amount of renewable and decarbonised energy that covers a large part of the remaining needs. For this reason, renewable installations will be carried out on public roofs on a massive scale, installations and Energy Communities on private roofs will be encouraged and the installation of all types of renewables in public spaces, parking lots, new structures, etc. will be facilitated.

Digitisation: all actions must be accompanied by a layer of intelligence and data management, in order to exploit to the maximum, the existing synergies between the interventions. Smart city tools, sensors, and data management platforms that interconnect buildings, facilities, vehicles, and people will be used to provide useful information and open data to citizens and the five helixes of innovation.

SWOT and CAME analysis

OPPORTUNITIES	THREATS
Improvement of the standard of living (air quality, noise, parks, comfort) and of the associative fabric Aligned with the welcoming and inclusive city Creation of local and green employment	Procedural and administrative complexity Lack of motivation from the neighbourhood Gentrification process in the district Moving the emissions to the surrounding neighbourhoods
EXPLOTE	**ADAPT**
Aligning with other economic, social, environmental initiatives, etc. Working with Social Services and NGOs to ensure that no one is left behind: fight against energy poverty	Administrative coordination from the beginning Talking about the co-benefits and encourage the neighbourhood through the existing associative structure It is part of the wider strategy of a sustainable, inclusive, prosperous city, etc.
STRENGHTS	**WEAKNESSES**
Significant savings in emissions and energy Creating community awareness transversality Pole of attraction for investments and initiatives	Difficulty operating in urban areas consolidated by the existing infrastructure Difficult short-term execution due to the complexity and size of the project Lack of funding: investment and operation
MAINTAIN	**CORRECT**
Make it easier for the neighbourhood to lead the initiatives Commissions to coordinate AAPP, companies, associations, universities, citizens Foster innovativeness, entrepreneurship, open data management	Taking advantage of works (bike lane, building reform, green corridor) to act together Taking advantage of European recovery funds The resilience and autonomy achieved reduces expenses and future investments

Table 32 – SWOT and CAME analysis of Carbon Neural District

Justification of the line of action

Why is it an emblematic project of the València energy transition?

The transformative nature of the project resides mainly in its transversal nature and bringing together a multitude of initiatives, seeking an integral action that goes beyond the sum of conventional interventions taken separately. The fact of planning, defining and implementing a whole series of transformative actions together in the same geographical space implies a multiplier effect that allows accelerating the decarbonisation of the city with a new level of ambition in accordance with the climate emergency situation that we live.

Almost zero consumption buildings are already a reality in Spanish regulations, but we need approaches that aspire to transform the whole city. Carbon Neutral Districts are an optimal instrument for this. On the other hand, the design of Carbon Neutral Districts begins with the recognition of energy as a right. For this reason, technical actions such as the refurbishment of buildings and the generation of renewable energy are considered from the beginning with a social focus, proximity to citizens and support for the most vulnerable to ensure that no one is left behind.

Finally, the social aspect is key in this project, which seeks to keep citizens at the centre of interventions at all times. CNDs cannot be a purely technological solution imposed from top to bottom, but training, empowerment and citizen participation must prevail. Only through citizen action can disruptive and major changes be achieved in the city while ensuring that the changes have a positive impact on people's daily lives.

Why is it a transformation project in the city, beyond energy?

The project aims to transform the affected neighbourhoods in a way that goes far beyond energy and the emission of greenhouse gases. The transformations necessary to achieve neutrality involve a radical change of the district that affects all sectors and areas of the city's life.

At an economic and social level, the project proposes to use the districts to consolidate in 2030 an urban energy pole capable of generating green employment, entrepreneurship and leading the green economy towards becoming the main economic sector of the city in 2040.

On the other hand, the work focused on districts allows them to be used as a "sandbox" to test, replicate and scale systemic innovations in the rest of the city. In this way, they serve as a pole of attraction for private, academic and civil society initiatives, because they join the efforts of the public administration and the impact is maximized. The modularity and flexibility of the model allows its replication in other areas of the city, moving towards a neutral city in emissions by 2040, district by district

Previous experiences and learning

Mapping of previous initiatives

Carbon Neutral Districts are an initiative clearly supported and promoted at European level, already included in strategic plans of the European Commission such as the Strategic Energy Technology Plan (SET Plan), or the Enabling Positive Energy Districts across Europe report. More recently, Carbon Neutral Districts have gained special relevance based on the definition of the European Mission "Smart and climate neutral cities - 100 climate neutral cities by 2030: for and for the citizens". This Mission seeks to achieve 100 cities approaching climate neutrality by 2030.

In València, we have the project MAtchUP, a flagship project of the European Union coordinated by the València City Council and which focuses on the Poblats Marítims district to apply a set of smart city solutions like the refurbishment of buildings, the production of local renewable energy, the deployment of recharging infrastructure for electric vehicles, social and economic actions, the fight against energy poverty, obtaining initiatives and process and the exchange of open data.

Learning

As part of the work in València to prepare its candidacy for the European call for 100 smart and climate-neutral cities, València has carried out an analysis of the initial state of its 19 districts, with the strengths and weaknesses of each them with respect to future decarbonisation.
To carry out the analysis, 35 criteria from the Technical, Urban, Environmental, Economic and Social areas have been considered. From the 35 criteria, a list of 19 criteria was filtered that were considered the most important by a group of experts in energy, public policies and mobility. On the other hand, the different criteria have different weights in the total potential of the areas to reach their decarbonisation. The following graph shows the weight of each criterion:

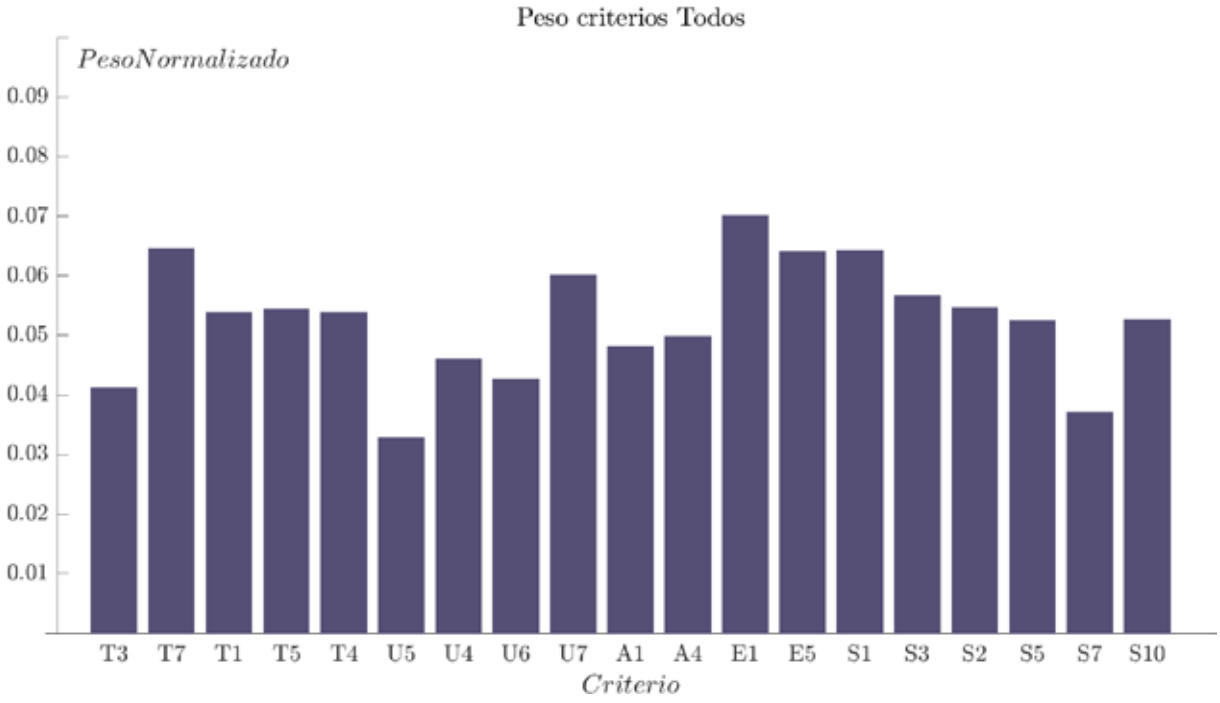


Figure 10 – Weigh of the criteria for the decarbonisation of the district

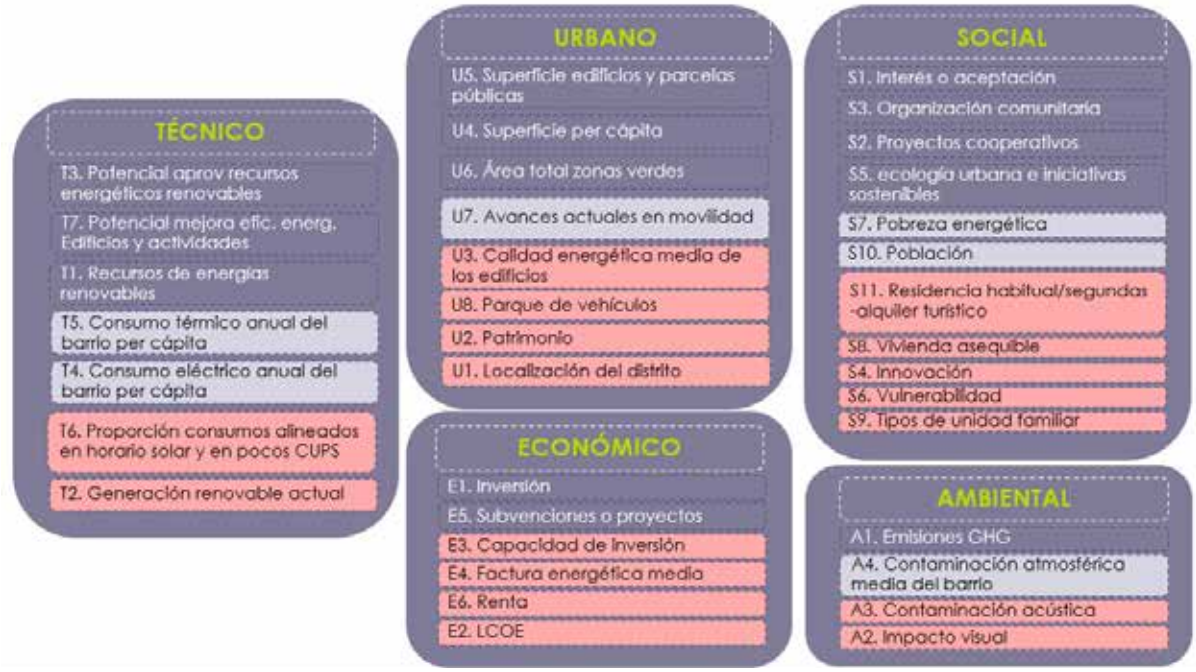


Figure 11 – Criteria considered for the decarbonisation of the district

Vision of the future and objectives for 2030

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Eliminating energy poverty in the district, ensuring the right to energy for all its inhabitants	0% energy poverty in the district At least 60% of the NECs give part of their production to the right to energy
Massively deploy renewable self-consumption and Neighbourhood Energy Communities	75% of municipal buildings with photovoltaic plants ~~At least 60% of the NECs give part~~ of their production to the right to energy. 15% of the population participates in a NEC or a self-consumption
Promoting local and quality employment, thanks to the development of business models linked to the green and energy economy	The district is a regulatory bank of tests “regulatory sandbox” 15% less unemployment in the district compared to the average in the city

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Deploying digitized district networks of heating, cooling and ACS based on renewable energies	20% of residential energy consumerism is covered with local renewables 80% of electricity consumerism in the district is (local or contracted) renewable 10% of buildings are connected to a district network of heating, ACS or cooling of buildings 20% of multifamily buildings has centralised ACS installation
Eliminating fossil fuels from buildings through electrification and the use of renewable energy	20% of residential energy consumerism is covered with local renewables 80% of electricity consumerism in the district is (local or contracted) renewable 80% of electricity in the residential sector
Getting the neighbourhood and neighbourhood communities to join the project and lead the transformations of the district	80% of the inversion in the transformation of the district is private 1 annual festive and public day on the neutrality of the district 80% of satisfaction and pride of the neighbours in the district There is 1 Office in the district to inform and empower the neighbourhood around neutrality
Creating a district Climate Assembly as a citizen body for project co-definition and accountability	There is a district Climate Assembly

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Generating district pride around sustainability, good habits, a healthy city and quality of life	40% more environmental conscience and knowledge about good habits in the district compared to the average in the city 80% of satisfaction and pride of the neighbours in the district There is 1 Office in the district to inform and empower the neighbourhood around neutrality
Managing to monitor the district and obtaining real, disaggregated and quality data	20% of homes participate in the transfer of data and intelligent management of their consumption 90% of trips within the district are monitored
Implementing insulation systems (SATE and SATI) massively in buildings	20% of the buildings are Almost Zero Consumption Buildings 90% of homes and buildings have the A, B or C energy efficiency certificate
Being a pole of attraction for innovation, investments and projects	The district is a regulatory bank of tests “regulatory sandbox” 80% of the inversion in the transformation of the district is private
Strengthening the business structure of the green and energy economy	15% less unemployment in the district compared to the average in the city
Administratively facilitate district transformations	95% of the transactions can be executed by electronic administration 95% of the transactions can be executed by electronic administration The district is a regulatory bank of tests “regulatory sandbox” There is a decentralised office for processing, licenses and subsidies

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Encouraging massive electric and shared mobility in the district	1 slow charging point (low power) for every 10 homes in the district 1 fast charging point (high power) for every 1000 inhabitants of the district 80% of residents use shared mobility services 100% of the buses that pass through the district are electric 80% reduction in journeys with internal combustion vehicles 70% parking spaces are reserved for electric vehicles
Optimising the management and planning of the district based on data and artificial intelligence systems	20% of homes participate in the transfer of data and intelligent management of their consumption 90% of trips within the district are monitored
Strengthening the synergies and collaborations between the different demonstration projects implemented in the district	There is 1 Office in the district to inform and empower the neighbourhood around neutrality 80% of the inversion in the transformation of the district is private

Table 33 – Future vision and objectives of the Carbon Neutral District

Governance and coordination

The entities shown in this section have been identified through three successive mappings carried out collaboratively with the INGENIO Institute of the Universitat Politècnica de València, the participating entities of the Energy Transition Board and the participating entities of the Specific Commission of this demonstration project, respectively.

However, the list of entities that are protagonists in the different roles and sectors can change and grow with the contributions of more entities and with the progress of their implementation.

	Public sector	Academy	Private sector	Civil society	Mass media
Promotors	**VCE, City Council (Climate Emergency and Energy Transition), IVE,** GVA (Housing and Bioclimatic Architecture)	**UPV-IIE-Catenerg**	**ASELEC, AVAESEN, FEVEC, I-DE**	**CAFVC**	
Executors			Rehabilitation agents, Rehabilitation managers, Property managers, Installation companies, Companies in the energy sector		
Support	**GVA (Eco Transition),** City Council (Social Welfare), **The Ships, IVACE,** IDAE	**ITE,** Universitat de València, Professional education centres	Equipment manufacturers, financial companies and banks, Electric vehicle manufacturers, ANESE	**COIICV,** CAATIE, COACV, COITCV, **FAAVV,** COEV, COAPIV, Tertiary sector entities, Unions	**APIA,** València Plaza, Levante, València Extra, À Punt, EFE Verde
Users	City Council, GVA			Citizenship, Owners	

Table 34 – Entities involved in the Carbon Neutral District

Itinerary

Line of Action 1: Selection of the district or districts in which to act

Task 1.1: Definition of objectives and selection criteria

In order to select the areas or districts where to act, it is first necessary to define and prioritise the selection criteria. This task considers technical criteria that may arise from a call, grant or specific project, and political or strategic criteria that may relate the project to other initiatives.

It should be emphasised that this task was already advanced with the report carried out by the Polytechnic University of València, "Analysis of the potential of the districts to become carbon neutral" where a total of 36 technical criteria were defined, prioritized and filtered, urban, environmental, economic and social.

T1.2: Analysis of the districts based on the defined criteria

This task seeks to analyse all the districts or functional areas of València based on the criteria defined in T1.1. This analysis has already been carried out in the UPV report "Analysis of the potential of the districts to become carbon neutral", where the situation of each of the 19 districts was studied based on the defined and prioritised criteria.

Based on this work and taking into account possible synergies with initiatives and parallel actions that can be added to decarbonisation, a proposal must be made for the district or districts in which to act. This proposal may also consider criteria of diversity (centre, peripheries and towns) and, even, not consider a district in isolation, but also consider its periphery or nearby areas.

As the UPV analysis reflects, the districts can be classified according to their degree of maturity and potential in different areas of action, so that pioneer districts and follower districts can be identified in areas such as mobility, energy, renaturation, etc.

T1.3: Validation of the selection proposal with the neighbourhood and the social structure of the district

Apart from the fact that social criteria are already considered in T1.1, it is important that there is neighbourhood validation and acceptance in the selected district. This final validation and refinement will be carried out through the FAAVV and the neighbourhood associations of the district, trying to involve unorganized citizens as well.

In this way, it is sought that the neighbourhood not only validates the selection, but that they can express their needs, concerns and suggestions so that they can join the district's decarbonisation plan from the beginning, taking advantage of the experience of " My Neighbourhood in

Transition" in Aiora. The development of a web page or mobile app is also being considered to gather this neighbourhood opinion, as well as their contributions to the project.

Total budget of Line of Action 1

Carbon Neutral District	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Selection of the district or districts in which to act	285.000 €	229.000 €	56.000 €	-	-	-	-
T1.1: Definition of objectives and selection criteria	4.000 €	4.000 €	-	-	-	-	-
T1.2: Analysis of the districts based on the defined criteria	1.000 €	1.000 €	-	-	-	-	-
T1.3: Validation of the selection proposal with the neighbourhood and the social structure of the district	280.000 €	224.000 €	56.000 €	-	-	-	-

Table 35 – Total Budget of Line of Action 1 in the Carbon Neutral District

Financing options and mechanisms for Line of Action 1

To finance the tasks defined in this Line of Action, the following options and mechanisms are considered:

· Collaboration with universities and research teams to develop the study of criteria and analysis of the districts as an academic research project.

· European innovation projects, such as HORIZON-MISS-2021-CIT-02, to finance strategic planning methodologies and tools for the decarbonisation of the city and its districts.

Line of Action 2: Communication and social revitalisation

T2.1: Dissemination and communication at district level

This task seeks to implement a dissemination and communication campaign for the decarbonisation project in the district. The campaign will be carried out in collaboration and synergy, when appropriate, with the project "Massive energy culture campaign", in order to take

advantage of the possible replica effect it may have in other districts, since the final objective is the decarbonisation of the whole city.

This campaign will focus on giving information to the neighbourhood of the district about the initiative, with posters, brochures and information panels in shops, educational centres, markets and street furniture. The main objective is to inform and sensitise the public about the project and the need to transform the district, but also to invite them to be an active part of it, with tools, information and resources that can facilitate citizen action in areas such as: rehabilitate your home, hire 100% renewable energy, use sustainable modes of mobility, reduce and separate waste, etc.

This task also seeks to develop a reference web page for the project, which would be related to the T1.3 platform and to initiatives such as the València 2030 Climate Mission, and which would be the point of reference for how the district is transformed, the objectives, the actions, the different projects underway, the tools and possibilities for citizens to be part of them, the achievements obtained, current news, events, etc.

Finally, it is planned to organise an annual day of celebration and celebration, in synergy with possible participatory processes and validation of "My Neighborhood in Transition" of task T1.3.

T2.2: Local information and support office

In collaboration with the "Deployment of Energy Offices" project, the aim is to have a physical point of reference in the district to act as a permanent point of information and resolution of citizens' doubts. This office not only has a dissemination function, but also serves as a point of contact between the transformation projects of the district and the neighbourhood of that district.

Therefore, the office is a point of revitalisation of the district around the decarbonisation project. For this reason, it must forge collaborations with businesses, communities of neighbours, educational centres, markets, etc. and move in an itinerant way through the different premises and visible points of the neighbourhoods.

The office will have a schedule of information sessions, presentations of transformative projects in the district, and debate sessions with citizens and public and private actors. In addition, it will be a space open to associations and citizen platforms that want to transform the district into carbon neutral to meet and publicise their actions.

T2.3: Revitalisation and involvement of the social structure

As indicated in T2.2, the involvement of the social structure is key to the success of the project. Through the previous proximity support office, it seeks to establish collaboration links with estate administrators, neighbourhood associations, consumer groups, AMPAs, markets, shops, other municipal centres, etc.

In addition, the creation of a District Climate Assembly is also proposed to have influence on the definition and decision-making of how the district is transformed. This District Assembly depends on a City Climate Assembly defined in the "Massive Energy Culture Campaign" project. In addition, to ensure a greater degree of participation and capillarity in the neighbourhood, it is proposed that the conclusions and concerns of the debate sessions held in the office of T2.2 are collected at the Assembly.

Total budget of Line of Action 2

Carbon Neutral District	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA2: Communication and social revitalisation	4.185.000 €	2.393.500 €	1.126.750 €	263.250 €	200.750 €	62.500 €	138.250 €
T2.1: Dissemination and communication at district level	1.250.000 €	875.000 €	125.000 €	125.000 €	62.500 €	62.500 €	-
T2.2: T2.2: Local information and support office	2.765.000 €	1.382.500 €	967.750 €	138.250 €	138.250 €	-	138.250 €
T2.3: Revitalisation and involvement of the social structure	170.000 €	136.000 €	34.000 €	-	-	-	-

Table 36 – Total Budget of Line of Action 2 in the Carbon Neutral District

Financing options and mechanisms for Line of Action 2

To finance the tasks defined in this Line of Action, the following options and mechanisms are considered:

· Program 1 and Program 2 according to RD 853/2021 and the program CE Aprende of Next Generation EU funds for the financing of advice offices and proximity information, as defined in T2.2, although with sectoral focus on the refurbishment of buildings and energy communities.

· European innovation projects where a budget can be included for communication, social revitalisation or local advice offices.

· Collaboration and sponsorship of private companies or other entities, taking advantage, for example, of their Corporate Social Responsibility strategies, for the organisation of training workshops and T2.2 advice.

Line of Action 3: Transformation of the district

T3.1: Energy rehabilitation of the building stock

In relation to the "Wave of energy renovation" project, this task encompasses all the necessary actions to promote the energy rehabilitation of the district's public and private building stock, to bring them as close as possible to Almost Zero Consumption Buildings, as defined by the Technical Building Code.

The importance of getting public buildings to serve as demonstrator and reference element and, therefore, to be pioneers in implementing renovations, is emphasised. In this sense, it is proposed that the support office of T2.2 itself be rehabilitated in an ambitious way as a pilot and exemplary project in the district.

T3.2: Generation of renewable energy

In relation to the project "Neighbourhood Energy Communities", this task encompasses all the necessary actions to promote the massive installation of renewable energies in the district's buildings. It is sought that these facilities are as collective and shared as possible, under communities of owners or energy communities, to try to benefit the population as much as possible, including vulnerable people.

In the same way as in T3.1, it is proposed that public buildings be pioneers in the installation of renewable energy and in the democratisation of production with the vulnerable families around them.

In a more ambitious way, it is proposed to take advantage of ordinary urban planning works in order to deploy district network infrastructure of cold and heat, connected to central systems of renewable generation.

T3.3: Promotion of sustainable mobility

Finally, the transformation of the district's mobility through sustainable and low-emission modes is considered. Beyond actions that are outside the energy field, such as the promotion of public transport, the bicycle or the 15-minute city, this task focuses on the electrification of mobility.

In order to promote the elimination of traditional combustion vehicles by electric vehicles, actions such as the deployment of a network of fast charging points on public roads and strategic locations, the massive deployment of low-power charging points mainly in private parking lots are considered , the review of the electrical installations of the estates and the implementation of the necessary electrical adaptations in the car parks, the electrification of the buses that circulate in the district, the installation of charging points for light vehicles associated with secure car parks, and the promotion of shared or on-demand electric vehicles.

To accompany these promotion measures, it is proposed to carry out certain restrictions on access to polluting vehicles in the district and reserve part of the parking spaces on public roads exclusively for electric vehicles, in order to discourage the use of vehicles of traditional combustion.

Total budget of Line of Action 3

Carbon Neutral District	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA3: Transformation of the district	483.908. 959 €	22.629. 903 €	92.109. 075 €	18.853. 671 €	-	-	350.316. 310€
T3.1: Energy rehabilitation of the building stock	233.635.832 €	4.672.717 €	42.054.450 €	-	-	-	186.908.665 €
T3.2: Generation of renewable energy	14.602.239 €	1.460.224 €	2.920.448 €	-	-	-	10.221.568 €
T3.3: Promotion of sustainable mobility	235.670. 888€	16.496. 962€	47.134. 178€	18.853. 671€	-	-	153.186.077€

Table 37 – Total Budget of Line of Action 3 in the Carbon Neutral District

Financing options and mechanisms for Line of Action 3

This Line of Action accounts for most of the project's budget. To finance the defined tasks, the following options and mechanisms are considered:

· Programs 1, 3 and 4 of RD 853/2021 (GVA) to subsidise the cost of rehabilitation works in neighbourhoods, buildings and homes respectively, as well as the development of the corresponding technical reports, economic budgets and administrative documents.
· Calls for Next Generation funds to subsidise administrative processing, establishment of NECs and execution of works, such as CE Aprende, CE Planifica and CE Implementa (IDAE).
· Tax deductions from national income tax (Ministry of Finance), regional income tax (GVA), municipal IBI (City Council) and ICIO (City Council) for solar installations.
· Tax deductions approved in RD 19/2021 for the energy renovation of buildings and homes, as well as tax deductions that can be approved at municipal level.
· Call for aid for self-consumption and storage of renewable energy in the residential sector, public administrations and third sector entities (GVA).
· Call for aid for energy communities (IDAE) and renewable energy communities (IVACE).
· Financing solutions and "turnkey" services offered by rehabilitation agents and energy service companies that assume the financing needs to carry out the works without the need to make an investment on the part of the owners.

· Financial entities, banks and savings banks that finance the costs or advance the grants awarded, allowing participants not to make any initial investment.
· European innovation projects, such as Horizon Europe, which can provide extra funding, tools and innovative technologies for the decarbonisation of the district or some of its areas and areas.
· Public financing for the installation of solar panels on the roofs of residential buildings, so that the investment is recovered during the first years and the neighbours benefit from the production during the remaining years.

Line of Action 4: Fair transition

T4.1: Involvement of groups and vulnerable people in the definition and implementation of transformations

This task seeks to involve vulnerable people directly and centrally in the definition and implementation of decarbonisation actions in their district. In collaboration with the citizen involvement activities defined in tasks T2.2 and T2.3, this task will ensure that people at risk of exclusion are also part of it.

It is proposed to work with the Municipal Centres of Social Services in the district, as well as with other NGOs and social associations, in order to gather vulnerable people and collect their needs and priorities.

In this same line, it is proposed to financially remunerate people who participate in training workshops, debate sessions or the District Climate Assembly, to avoid excluding vulnerable people.

T4.2: Avoid possible negative effects of the project on certain groups

This task aims to ensure that the transformations of the district do not have negative implications for certain vulnerable groups, but that their positive social effects are enhanced. In this sense, it seeks to take advantage of the studies on the district and the monitoring of indicators (also socio-economic) in order to have a better knowledge of the situation of its population, in order to better identify the needs of vulnerable people and ensure who are satisfied with the actions of the project.

Apart from this, it is considered particularly important to avoid problems with the increase in rental and purchase prices in the district, as well as possible negative impacts on the population with fewer resources from possible restrictions on the mobility of old and polluting vehicles.

The task also aims to promote the generation of local, green and quality employment, in collaboration with T5.3, so that the projects deployed in the district and the investment attracted have the greatest possible impact, at an occupational level, on the population of the district

T4.3: Defence of the right to energy for the entire population of the district

This task aims to ensure that the population of the district has access to the energy supply necessary to live a dignified life. In other words, it is sought that the transformations of the district are taken advantage of to give rights, tools and power to vulnerable people in the energy field.

For this, different actions are proposed, such as: taking advantage of the social criteria of new calls for the rehabilitation of buildings and neighbourhoods to cover up to 100% of the costs of the rehabilitation of houses in vulnerability; promoting regulatory changes that guarantee a minimum of annual energy free of costs or at a very reduced price; offer training on bills, rights to energy and good energy habits to vulnerable people; promoting collective facilities and energy communities that include the participation of vulnerable families in a subsidised manner.

Total budget of Line of Action 4

Carbon Neutral District	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA4: Fair transition	13.255.578 €	6.866.289 €	5.031.231 €	1.246.058 €	-	112.000 €	-
T4.1: T4.1: Involvement of groups and vulnerable people in the definition and implementation of transformations	560.000 €	448.000 €	-	-	-	112.000 €	-
T4.2: Avoid possible negative effects of the project on certain groups	235.000 €	188.000 €	47.000 €	-	-	-	-
T4.3: Defence of the right to energy for the entire population of the district	12.460.578 €	6.230.289 €	4.984.231 €	1.246.058 €	-	-	-

Taula 38 – Total Budget of Line of Action 4 in the Carbon Neutral District

Financing options and mechanisms for Line of Action 4

To finance the tasks defined in this Line of Action, the following options and mechanisms are considered:

· Programs 1 and 3 of RD 853/2021 (GVA) which can cover up to 100% of the costs of rehabilitation of vulnerable homes.

· Local and regional public administrations can finance part of the costs of running renewable installations to cover the participation of families in a vulnerable situation. Public participation can also be contemplated by ceding, free of charge or at a reduced cost, their roofs to house renewable energy installations.

· Program 1 and Program 2 according to RD 853/2021 (GVA) and the program CE Aprende (IDAE) of Next Generation EU funds for the financing of local advice and information offices that can accompany vulnerable people more closely.

· Collaboration and sponsorship of private companies or other entities, taking advantage, for example, of their Corporate Social Responsibility strategies.

Line of Action 5: Public-private-social collaboration

T5.1: Administrative facilities, subsidies and economic incentives

This task proposes the need to have a legal and technical team that will continue with the work of revising ordinances and regulations to remove barriers and facilitate the transformations of the district (and the city), such as the recent revision of the NNUU of PGOU of "Improving universal accessibility, energy efficiency and self-consumption with facilities for the use of solar energy in existing buildings", the revision of the municipal solar capture ordinance to include photovoltaic uses aside from thermal or the elimination of the need to apply for a municipal license approved by the Generalitat Valenciana in Law 7/2021.

In this sense, it is proposed to update the current PGOU with the new demographic forecasts of the city, the new strategic framework of the Urban Agenda, the commitments of the City Council and the Generalitat Valenciana in their declaration of climate emergency and the València 2030 Mission Climate. In addition, it is proposed to define requirements for the energy improvement of buildings and the inclusion of renewable energy or recharging infrastructure in order to grant licenses for rehabilitation works. The approval of certain restrictions on the use of butane gas and natural gas in buildings or restrictions on access to certain polluting vehicles in the district is also considered, taking into account possible negative impacts on vulnerable groups (T4. 2).

Finally, this task seeks to technically, legally and administratively study the possibility of the district being a regulatory sandbox, so that the effects of accelerating the sustainable transformations of the district can be tested. To study this possible solution, we will collaborate with all the necessary administrative levels.

T5.2: Public-private-social collaboration

This task contemplates the analysis, development and dynamism of new figures and new public and private financing services to facilitate the economic investments necessary to transform the district.

In the field of building rehabilitation and the deployment of renewable energies, the figures of rehabilitation manager, rehabilitation agent and energy service companies will be used, as entities that group services and simplify the process for owners. It is considered crucial to have the focus on promoting local employment and promoting the appearance of these figures among the professional structure already existing in the neighbourhoods.

In the private sector, the project seeks to energise these figures, linking with existing registers such as the Registre per la Qualitat en l'Hàbitat Construït Register for Quality in the Built Habitat) of the Generalitat Valenciana and the Valencian Institute of Building or initiatives such as the Plaza Energia market place of AVAESEN, serving as a link with the public through the local offices of T2.2. Finally, there is the opportunity to promote the role of the property manager, in collaboration with the Association of Property Managers of València and Castelló, to facilitate the role of rehabilitation manager in those communities of owners who do not have one.

In the public sector, there is a need to set up a public or mixed company in the energy sector that acts as a public rehabilitation agent, providing "turnkey" solutions to individuals. Along these same lines, the role of AUMSA as a public and local rehabilitation agent is also considered key, mainly in vulnerable neighbourhoods and buildings in the city. Finally, also from the public sphere, the possibility of creating a guarantee fund, in collaboration with private financial entities, is being considered to facilitate credit lines with preferential conditions in vulnerable buildings and homes.

T5.3: Promotion of local and quality employment

In relation to the previous task, the aim is to maximize the creation of local and quality employment in the district where it operates and, more broadly, throughout the city. Therefore, this task aims to promote the district to become a pole of attraction for innovation, projects and investments, ensuring that economic growth has a local and distributed impact.

It is proposed to organise fairs and events where the topic of local and green employment is discussed in relation to the Carbon Neutral District, and where the range of opportunities offered by the district for the growth of companies is made visible. These fairs will also make it possible to establish synergies to generate and attract innovation projects to the district. Finally, attention will be paid to the promotion of start-ups in the district, facilitating their relationship with established companies and entities, and proposing the district as a testing ground for their solutions.

Along these same lines, it is proposed to create a specific web portal for green and local employment related to the transformation projects of the district, so as to facilitate contact

between companies and people looking for employment in these sectors. On the part of the administration, companies that have ambitious Corporate Social Responsibility policies and that implement quality hiring with social criteria will be made visible.

Total budget of Line of Action 5

Carbon Neutral District	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA5: Public-private-social collaboration	770.000 €	256.000 €	146.500 €	315.000 €	52.500 €	-	-
T5.1: Administrative facilities, subsidies and economic incentives	170.000 €	136.000 €	34.000 €	-	-	-	-
T5.2: Public-private-social collaboration	75.000 €	15.000 €	60.000 €	-	-	-	-
T5.3: Promotion of local and quality employment	525.000 €	105.000 €	52.500 €	315.000 €	52.500 €	-	-

Table 39 – Total Budget of Line of Action 5 in the Carbon Neutral Distric

Financing options and mechanisms for Action Axis 5

To finance the tasks defined in this Line of Action, the following options and mechanisms are considered:

· Programs 1 and 2 of RD 853/2021 (GVA) and Red Xaloc (GVA) to subsidise the operation of local offices that facilitate the analysis, simplification and dissemination of information relating to regulations, subsidies and financial options .

· Collaboration and sponsorship of private companies or other entities, for the organisation of fairs and events on green and local employment.

· Collaboration with financial entities to promote public and private rehabilitative agents that offer “turnkey” solutions, including the economic part.

· Resources, technical support and good practices achieved through European projects such as H2020 Save the Homes and HE EBENTO to finance the analysis of subsidies, financial instruments and agents involved.

Line of Action 6: Evaluation and intelligent management

T6.1: Digitisation and collection of quality data

This task aims to collect data on the built stock, travel, energy consumption, recharging infrastructure, or local renewable energy production, among others. This data can be collected through three main ways: the installation of smart sensors, the use of already existing data and sensors, the participation of the people of the district. At all times, the LOPD for the protection of personal data will be respected.

For the installation of new sensors, both in buildings and on public roads, it is considered key to take advantage of the renovations of homes and buildings, the deployment of new renewable installations, or the implementation of new electric vehicle charging infrastructure, to deploy the sensors that, in a coordinated and consensual manner between different suppliers, can collect the corresponding data.

In relation to the use of already existing sensors and data, the need to establish collaborations with suppliers and companies that manage data (distribution companies, commercial companies, energy services, etc.) is considered in order to have access aggregated and anonymised to the data that is of interest to the project.

Finally, citizen involvement in the use of data that already exists, such as that collected by smart home meters, and in the collection of data on use, satisfaction, comfort, etc. it will be promoted through consideration such as services for intelligent management of energy consumption, personalised advice on optimizing energy savings and bills, or personalized proposals for rehabilitation solutions, renewable energies or electric mobility, among others.

T6.2: Evaluation and visibility of achievements

A first result of the analysis of the data collected in the previous task is to evaluate the results achieved through the different projects and transformation initiatives of the district. It is therefore intended to monitor compliance with the indicators defined in the objectives section of this project.

On the other hand, this evaluation of results will also be used to make visible the successes achieved and select good practices so that they serve as inspiration to other people and entities. All this information will be collected on the project website, developed together with other tasks such as T1.3, T2.1 and T5.3, and will allow to show how the project is transforming towards decarbonisation, as well as the work that is still remains to be done. The possibility of expanding the focus of this assessment to include more districts is being considered and, thus, developing a monitoring portal for the decarbonisation of the city.

T6.3: Management and optimized decision-making based on data

Secondly, the data collected in task T6.1 will also be used to optimise the planning and management of the district, providing relevant and quality information for decision-making. This data will be analysed through purification and treatment algorithms, respecting the LOPD at all times, in order to feed back the transformations of the district (T3.1, T3.2, T3.3).

Apart from this, the anonymised data will be available on open servers such as VLCi, because they serve to plan and develop new projects and policies in the public, private, social and academic spheres. This collection and analysis of data will also be used to optimally plan transformation actions in other districts, taking into account the city's goal of achieving the decarbonisation of its entire municipal area, and taking advantage of possible mutual learning that occur between districts and geographical areas.

Total budget of Line of Action 6

Carbon Neutral District	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA6: Evaluation and intelligent management	3.853.860 €	741.129 €	2.194.116 €	370.086 €	182.843 €	-	365.686 €
T6.1: Digitisation and collection of quality data	3.656.860 €	548.529 €	2.194.116 €	365.686 €	182.843 €	-	365.686 €
T6.2: Evaluation and visibility of achievements	22.000 €	17.600 €	-	4.400 €	-	-	-
T6.3: Management and optimized decision-making based on data	175.000 €	175.000 €	-	-	-	-	-

Table 40 – Total Budget of Line of Action 6 in the Carbon Neutral District

Financing options and mechanisms for Line of Action 6

To finance the tasks defined in this Line of Action, the following options and mechanisms are considered:

· Collaboration with public and private entities to take advantage of the economic performance of the data obtained in T6.1.

· Collaboration with public and private entities to facilitate the monitoring of consumption, production, comfort conditions of homes, trips or electric recharges, in exchange for privileged access to this data.

· Subsidy lines considered in Line of Action 3, where the installation of smart sensors for advanced data collection can be included as a subsidised cost.

· Resources, technical support and good practices achieved through European projects such as H2020 Save the Homes and HE EBENTO to finance the analysis of subsidies, financial instruments and agents involved.

Total budget

This budget shows the financial contributions needed to implement the project, both from the public sector and from the private, social and academic sectors.

Carbon Neutral District	Year 1	Year 2	Year3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
LA1: Selection of the district or districts in which to act	40.000 €	35.000 €	35.000 €	35.000 €	35.000 €	35.000 €	35.000 €	35.000 €	285.000 €
T1.1: Definition of objectives and selection criteria	4.000 €	-	-	-	-	-	-	-	4.000 €
T1.2: Analysis of the districts based on the defined criteria	1.000€	-	-	-	-	-	-	-	1.000€
T1.3: Validation of the selection proposal with the neighbourhood and the social structure of the district	35.000€	35.000€	35.000€	35.000€	35.000€	35.000€	35.000€	5.000€	280.000€
LA2: Communication and social revitalisation	200.000€	595.000€	565.000€	565.000€	565.000€	565.000€	565.000€	565.000€	4.185.000€
T2.1: Dissemination and communication at district level	200.000€	150.000€	150.000€	150.000€	150.000€	150.000€	150.000€	150.000€	1.250.000€
T2.2: Local information and support office	-	395.000€	395.000€	395.000€	395.000€	395.000€	395.000€	395.000€	2.765. 000 €
T2.3: Revitalisation and involvement of the social structure	-	50.000€	20.000€	20.000€	20.000€	20.000€	20.000€	20.000€	170.000€
LA3: Transformation of the district	5.669. 324€	13.527. 973€	22.871. 622€	40.433. 919€	63.697. 865€	85.060. 887€	107.680. 407€	144.966. 962€	483.908. 959€
T3.1: Energy rehabilitation of the building stock	2.595. 954€	7.787. 861€	12.979. 768€	23.363. 583€	38.939. 305€	51.919. 074€	51.919. 074€	44.131. 213€	233.635. 832€

Carbon Neutral District	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
T3.2: Generation of renewable energy	162.247€	486.741€	811.236€	1.460. 224€	2.433. 707€	3.244. 942€	3.244. 942€	2.758. 201€	14.602. 239€
T3.3: Promotion of sustainable mobility	2.911. 124€	5.253. 371€	9.080. 618€	15.610. 112€	22.324. 853€	29.896. 871€	52.516. 391€	98.077. 548€	235.670. 888€
LA4: Fair transition	1.617.572 €	1.662.572 €	1.662.572 €	1.662.572 €	1.662.572 €	1.662.572 €	1.662.572 €	1.662.572 €	13.255.578€
T4.1: Involvement of groups and vulnerable people in the definition and implementation of transformations	-	80.000 €	80.000 €	80.000 €	80.000 €	80.000 €	80.000 €	80.000 €	560.000 €
T4.2: Avoid possible negative effects of the project on certain groups	60.000€	25.000 €	25.000 €	25.000 €	25.000 €	25.000 €	25.000 €	25.000 €	235.000 €
T4.3: Defence of the right to energy for the entire population of the district	1.557.572 €	1.557.572 €	1.557.572 €	1.557.572 €	1.557.572 €	1.557.572 €	1.557.572 €	1.557.572 €	12.460.578€
LA5: Public-private-social collaboration	140.000 €	90.000 €	90.000 €	90.000 €	90.000 €	90.000 €	90.000 €	90.000 €	770.000 €
T5.1: Administrative facilities, subsidies and economic incentives	100.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	170.000 €
T5.2: Public-private-social collaboration	40.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	75.000 €
T5.3: Promotion of local and quality employment	-	75.000€	75.000€	75.000€	75.000€	75.000€	75.000€	75.000€	525.000€
LA6: Evaluation and intelligent management	55.862 €	148.285 €	230.309 €	393.456 €	635.927 €	837.236€	837.23 €	715.550€	3.853.860€
T6.1: Digitisation and collection of quality data	40.862 €	122.285 €	204.309 €	367.456 €	609.927 €	811.236 €	811.236 €	689.550 €	3.656.860 €
T6.2: Evaluation and visibility of achievements	15.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	22.000 €
T6.3: Management and optimized decision-making based on data	-	25.000 €	25.000 €	25.000 €	25.000 €	25.000 €	25.000 €	25.000 €	175.000 €
TOTAL BUDGET	7.722. 758 €	16.058. 831 €	25.454. 503€	43.179. 947€	66.686. 364€	88.250. 695€	110.870. 215€	148.035. 084€	506.258. 396€

Table 42 – Total Budget of the Carbon Neutral District

Description of the line of action

Energy is an **unknown subject for most of the population**, who understand energy as a very technical subject, which has little interest and impact on their lives. In addition, society has suffered for decades from a centralised and non-transparent energy model that left very little room for action to the final consumer, causing this mistrust, disconnection and apathy.

Now, instead, **an educated, informed and empowered citizenry is needed to lead the energy** transition towards a radically new model, which is renewable, decentralised, emission-free, democratic and fair. Citizens must be put at the centre, not only to accelerate the necessary changes, but to ensure that no one is left behind. Society must go from being a passive agent of the system to becoming an active and central agent of the model.

For this reason, it is planned to implement a massive campaign of communication and awareness that will make a new energy culture emerge in the population. **This campaign will have three interrelated and complementary objectives:**

- **Raising awareness:** convey the importance of changing the energy model to fight climate change and defend the right to energy for the entire population. Emphasise the opportunity offered by the energy change to transform the city into a pleasant, sustainable, green, prosperous and inclusive place.

- **Motivating action:** provide sufficient information and tools to motivate citizens to participate and promote energy transition projects, such as: energy renovation of houses and buildings, energy communities, collective self-consumption, shared electric mobility systems.

- **Highlighting:** make visible good practices and success stories of citizens, public administrations and private companies. The aim is to offer real examples of what the new energy model means, bring energy closer to citizens, break with mistrust and inspire the action of other people and entities.

This campaign covers, among others, the following aspects:

· Organising **talks, events and workshops** with the public and with different professional sectors to deal with energy and environmental concepts, reaching all areas of the city.

· Preparing **guides, manuals, infographics, audio visual resources, posters, creativity, interviews, press releases,** etc. for press, web, social networks, means of transport, advertising media.

· Collaborating with the five helices of the city to multiply the impact of the campaign through its **replication and decentralisation:** parallel events, sectoral talks, production of posters, use of campaign stamps, etc.

Therefore, this project proposes to design and implement an ambitious campaign that, in addition, accompanies the rest of the demonstration projects, managing to increase citizen interest in them and serving as a catalyst to maximize their impact. The campaign is not limited to communicating about the other demonstration projects, but goes further, but it is true that the rest of the projects will be enhanced thanks to the implementation of this campaign, since they all need citizen involvement and leadership to be successful.

SWOT and CAME analysis

OPPORTUNITIES	THREATS
Growing general interest in the subject Experience in environmental education in other topics (waste, mobility, plastic) Institutional support and other propellers Lots of existing resources	Lack of interest and trust from a large part of the population Lack of professionals trained in TE City saturated with initiatives and campaigns
EXPLOTE	**ADAPT**
Taking advantage of interest peaks (invoice, electricity market, renewables, European funds) Taking advantage of already existing experience and resources (Energy Office, Climate Change Observatory, Waste Management, EMT...) Taking advantage of MTE and other collaborations for a multiplier effect of the campaign	Co-benefits to attract interest: quality of life, local economy, clean air... TE transversal subjects Not duplicating with other campaigns, but taking advantage of synergies
STRENGHTS	**WEAKNESSES**
Bottom-up nature of the project Synergies with other projects Existing projects as success stories and demonstrator of the urgency to act	High economic investment and difficult to recover directly Difficulty measuring impacts Difficulty in implementing an ambitious and coordinated campaign by different actors
MAINTAIN	**CORRECT**
Continuing the collaborative creation with groups such as the MTE and the project Commission Taking advantage of major changes and city projects to bring energy closer to citizens	Public-private financing: the success of other projects implies profitability in the medium term Defining specific and measurable indicators of communicative actions

Table 42 – SWOT and CAME analysis of the Energy Culture Campaign

Justification of the line of action

Why is it an emblematic project of the València energy transition?

The energy transition has 4 main aspects: technical, economic, legal and social. At a technical level, the technologies needed to transform the energy model have existed for years and are established on the market: solar panels, electric vehicles, high-efficiency equipment. At an economic level, this technological advance has made it possible to drastically reduce the cost of these solutions to the point of making them economically profitable for companies and private users. At a legal level, in recent years a series of royal decrees, laws and regulations have been approved at state, regional and local level that remove a large part of the existing barriers and facilitate this transition.

All this has made it possible to see advances and changes in the energy world in recent years, especially in the form of pioneering initiatives and pilot projects among the most conscientious social sectors. However, in order to accelerate these changes and reach the scale and ambition necessary to achieve European and state emissions commitments, **a radical social change is necessary that has a multiplier effect and allows the new energy model to be become the new status quo and reach society as a whole.**

For this reason, this project is an emblematic project of the energy transition in València, since this cultural and social change is currently presented as the key to accelerating transformative energy changes. At the same time, it seeks to position the population at the centre of the model and ensure that people are the maximum beneficiaries of the changes that occur, especially those vulnerable groups that need it most.

Why is it a transformation project in the city, beyond energy?

Energy and the energy transition have a direct impact on the whole of society and on the daily life of citizens. For this reason, achieving a change in society's energy culture involves transforming many of its areas and daily realities.

Informing and empowering the population around the new energy model means promoting a way of thinking and acting that goes far beyond energy, in which elements such as: care for the environment and the importance of preserving ecosystems stand out; the promotion of responsible and local consumption; the power of individual and collective actions to confront global problems; the importance of living in resilient cities in the face of change; the potential of associationism and collaboration to achieve difficult goals; the opportunity to think and jointly build cities and spaces where we want to live; the impacts that elements such as our way of life, the quality of the air we breathe, the noise we suffer or the green areas that surround us have on our health.

Therefore, a massive campaign of communication and awareness, deployed throughout the city, and supported by all these co-benefits of the energy change, necessarily implies a cultural change and the habits of the citizenry at many levels of its life. The energy transition acts as a lever to transform the city as a whole in a radical and systemic way towards a new 21st century city model.

Previous experiences and learning

Mapping of previous initiatives

At an international level, the Commission identified the Nantes (Great Energy Transition Debate) and Leuven (Leuven 2030) processes as reference communication campaigns in the field of sustainability and energy. In addition, its relationship with participative and alliance processes that were implemented in parallel with communication is particularly interesting. Other interesting initiatives such as Fridays For Future and Ideas For Change were also identified.

At the level of national initiatives, the campaigns implemented by the city of Vitoria within its European Green Capital and Rubí with its Rubí Brilla program stand out. Also campaigns by energy companies such as Ecooo Revolución Solar or Repsol to promote solar energy in the residential area. Finally, campaigns by environmental NGOs such as Greenpeace are also considered which, although they are not normally attached to the energy field, are a benchmark for how to communicate and raise awareness in aspects related to sustainability and care for the environment.

At the local level, initiatives promoted through activism stand out, such as Youth for the Climate, Platform for a New Energy Model, Som Energia and Ecologistes en Acció País Valencià. In addition, HolaLuz's local campaign promoting renewable installations in València, disseminating existing tax credits and the simplification of municipal procedures, and EDP Solar's campaign under the name of Pioneers are also considered relevant.

Learning

Of all the initiatives identified, the Commission invited Ciudadano Kane to explain the communication campaigns implemented in Vitoria-Gasteiz for its European Green Capital and the most recent energy information processes promoted in the city. Questions and learnings are summarised below.

What different communication channels and messages were chosen for the different types of audiences?

An ambitious campaign is important, which is present in all possible media and channels and which repeats clear and lasting concepts: "Verde por fuera. Verde por dentro" to show the visible aspects of sustainability in Vitoria but also to emphasise the importance of habits and public awareness. "100% citizen energy" in the same line of giving importance to citizen involvement in the fight against climate change.

How to measure results?

In social networks and web pages it is easy to measure the results achieved. It is also relatively easy to measure impacts in traditional press, radio and television media. It is also important to count the people who participate or receive information from face-to-face events, stands and other street-level activities. It is also measurable the number of collaborations achieved, of private companies that are part of the pact, media that sign a collaboration, etc. Finally, it is indeed more complicated to measure the real impact that is achieved in terms of changes in habits, awareness, or citizen actions.

What are the actions with the greatest impact in relation to the cost?

The importance of forging collaborations, such as with the private sector, is emphasised, a key part that was promoted through a Green Pact in Vitoria with already more than 200 affiliated companies. These alliances allow the replication of messages in many other areas and channels. Also in this line, the relationship with journalists and the media stands out, a main element of success. In this sense, it is proposed to carry out training for journalists or conferences on sustainability and the environment organised with journalists.

Is it worth getting famous people involved? Is it advisable to make an audio visual with people or better an animation video?

Yes, there is some value in involving prescribers who act as speakers and reach most of the population. In the case of the Green Capital, Manel Comas and Estíbaliz Ruíz de Azua were involved. With regard to animated videos, in the two Vitoria campaigns analysed, as well as in other European examples, videos with real people and images stand out, as they convey a closer image of the city and the people who live in it.

What were the necessary resources?

The investment required for the European Green Capital campaign was €150,000 and the last smaller campaign related to the energy transition was €45,000. Tenders included everything from design to implementation and all necessary advertising materials and media.

Vision of the future and objectives in 2030

FUTURE VISION (QUALITATIVE)	**QUANTITATIVE OBJECTIVES**
Standardising a plan of workshops, activities and days around energy and sustainable culture, with the consolidation of the Energy Transition Month	1 day or activity of València Change for the Climate! in each district every year 4 energy workshops organised monthly Energy Transition Month with 20 energy-related activities At least 20% of the activities of the Energy Transition Month are organised by civil society At least 20% of the Energy Transition Month activities are organised by the private sector At least 20% of the activities of the Energy Transition Month are organised by the public administration
Reaching all citizens in all neighbourhoods, ensuring that energy is a common topic of conversation in all social areas	1 day or activity of València Change for the Climate! in each district every year Energy Transition Month with 10 energy-related activities 1 urban art intervention per district 40% more environmental and energy awareness and knowledge of good habits among citizens

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Promoting the Alliance for the Climate Mission with the adhesion of all the agents of the city	There is a seal of the València 2030 Climate Mission Alliance 50.000 people affiliated to the Alliance 1,000 local entities affiliated to the Alliance 100 local organisations ambassadors of the Alliance 15 relevant and influential people who are members of the Alliance
To ensure that the message has an impact and that citizens internalize and take ownership of the transformations	15% of the population participates in a NEC or self-consumption 70% of electricity consumption is (local or contracted) renewable Rehabilitation rate of 1.5% in 2025 and 3% by 2030 80% of the investment in energy transition projects is private 70% satisfaction and pride among citizens regarding the city's energy and sustainability 40% more environmental and energy awareness and knowledge of good habits among citizens 50,000 people joined the Alliance

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Creating a Climate Assembly in the city as a citizen body for co-definition of energy projects and accountability	There is a Climate Assembly in the city
Strengthening the sustained collaboration of public and private media in the País Valencià	10 local media collaborate continuously
Identify and highlight success stories among citizens	There is a seal of the València 2030 Climate Mission Alliance 5 successful experiences from each demonstration project collected and visualised
Get the curricula of all educational areas to include actions on energy and climate	The energy transition and climate change are included in the curricula of all educational fields 50% of the educational centres that are members of the Alliance integrate energy actions into their didactic programming in a transversal way
Organising energy transition programs in the city's educational centres, with a competition to reward the best	50% of the city's educational centres are members of the Alliance 70% of the city's public and private schools have participated in 50/50 energy transition programs 50% of the city's public and private universities have participated in 50/50 energy transition programs 50% of public and private institutes have participated in 50/50 energy transition programs

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Involving young people and educational centres in transformation processes and decision-making	50% of the city's educational centres are members of the Alliance There is a Climate Assembly in the city 20% of the participation in the Climate Assembly is young people
Implementing training cycles of formal education that have energy culture and sustainability as central axes	5 specific training cycles for topics related to the energy transition: efficiency, rehabilitation, renewable energies, electric mobility
Implementing a sustainable Falles program that encourages the contribution of casals fallers to the energy transition	30% of casals fallers joined the Alliance 15% of casals fallers calculate, reduce and offset their carbon footprint
Securing the decarbonisation of sporting and musical events, as exemplary elements	80% of major music and sporting events are climate neutral 30% of the sports clubs affiliated to the Alliance
Monitoring and decarbonize all public buildings and facilities, as exemplary elements	100% of public buildings are NZEB (e.g., schools)

Table 43 – Future vision and objectives of the Energy Culture Campaign

Supervision and coordination

The entities shown in this section have been identified through three successive mappings carried out collaboratively with the INGENIO Institute of the Universitat Politècnica de València, the participating entities of the Energy Transition Board and the participating entities of the Specific Commission of this demonstration project, respectively.

However, the list of entities that are protagonists in the different roles and sectors can change and grow with the contributions of more entities and with the progress of their implementation.

	Public sector	Academy	Private sector	Civil society	Mass media
Promotors	**VCE, City Council (Climate Emergency and Energy transition)**				
Executors			Communication and marketing companies and agencies, Event organisation companies, social revitalisation companies		**APIA,** València Plaza, Levante, València Extra, À Punt, EFE Verde, Other mass media
Support	EMT, Juntes Districte**, The Ships, IVACE, CEACV, Diputació de València, GVA (Climate change), GVA (Eco Transition, IVE**	**UPV (Audio visual communication),** UV (journalism), **CEFIRE**	Theatres, Cultural centres (CCCC), energy traders, Cámara Comercio València, company associations, **AVAESEN, ASELEC, Som Energia,** Clúster de l'Energia	**CAFVC, FAAVV,** Neighbourhood shops associations, FAMPA, Universitat Popular, **ADICAE,** Unió de Consumidors, Falles, sport lubs esportius, music bands, **FAMPA,** unions, València CF, Levante CF, Junta Central Fallera, Plataforma per un Nou Model Energètic, Fridays for Future, Movements of young people	**Valencian Community Marketing associations, Journalists Union**
Users				Citizenship	

Table 44 – Entities involved in the Energy Culture Campaign

Itinerary

Line of Action 1: Analysis and preparation

Task 1.1: Analysis of the current context and needs

This task contemplates validating and updating the content defined in this itinerary with the existing context at the time of project implementation. In a sector as changing as the energy sector, it is necessary to make a constant analysis of the initiatives that could be interrelated with the energy culture campaign in order to take advantage of the synergies and cover the various needs (such as the energy crisis and rise in prices in Europe, the València 2030 Climate Mission, the València 2030 Urban Strategy or València's candidacy for the European Green Capital 2024).

This analysis will also take into account the initiatives carried out at other administrative and geographical levels, with the aim of pooling efforts and taking advantage of possible communication channels and brands implemented at other levels.

T1.2: Alignment with the rest of the Strategy's projects

In the same way, this task includes the need to analyse the needs and communicative actions of the rest of the projects of the Fair and Inclusive Energy Transition Strategy, so that the energy culture campaign takes advantage to multiply the potential and the impact of these actions developed at project level.

In this sense, the rest of the demonstration projects already contain the definition of their own communicative actions and tasks, but the energy culture campaign can offer a generic framework and more global channels and messages that support the specific actions of the projects, affecting the idea of generating a social framework aligned with the new energy culture.

T1.3: Collaboration with entities in the communication field

To close this axis of preparation, it is considered a key point to establish and strengthen collaborative relationships with media and entities in the field of communication, covering different communication channels, such as press, radio, television and Internet platforms.
At a general level, the creation of a press office is proposed to coordinate the media with the different agents and organisations participating in the project. Through this cabinet, calls and press conferences will be held to present the Strategy to the media, with the corresponding projects and milestones that are being achieved.

However, in addition to being receivers and amplifiers of information, it will be about establishing continuous collaborations with different media, guilds, collectives and professionals, so that they are part of the definition and implementation teams of the tasks of this energy culture campaign.

Total budget of Line of Action 1

Massive Energy Culture Campaign	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Analysis and preparation	46.000 €	30.000 €	-	16.000 €	-	-	-
T1.1: Analysis of the current context and needs	5.000 €	5.000 €	-	-	-	-	-
T1.2: Alignment with the rest of the Strategy's projects	1.000 €	1.000 €	-	-	-	-	-
T1.3: Collaboration with entities in the communication field	40.000 €	24.000 €	-	16.000 €	-	-	-

Table 45 – Total Budget of Line of Action 1 in the Energy Culture Campaign

Financing options and mechanisms

For this line of action, as it concerns preliminary and preparatory tasks, it is considered that most of the investment will have to be public and the only alternative mechanism is considered the sponsorship of private companies or media for to the organisation of meetings with journalists and the media of T1.3.

Line of Action 2: Definition and implementation of the communication plan

T2.1: Definition of the communication strategy, messages and corporate image

This task aims to define the communication strategy based on the contributions and ideas already provided to the Energy Transition Board and the Commission of the Energy Culture Campaign project. In addition, the initiatives and corporate identities identified in T1.1 will be taken into account.

This communication strategy must encompass the perspective of the city's global goal for 2030, under the umbrella of the Fair and Inclusive Energy Transition Strategy and the Climate Mission, but also the direct goals of the different neighbourhoods, projects and sectors .
The strategic definition also requires making an outline of population groups, interests and concerns, levels of awareness and knowledge, to define the main audiences, channels and messages.

T2.2: Design of the communication plan

The communication plan will be designed based on the strategy and identity defined in T2.1. The schedule of the plan will be defined by interrelating the communicative actions with the different actors involved in implementing or disseminating them, taking advantage of the collaborations of the MTE and the demonstration projects. In this way, generic actions focused on promoting awareness and action towards a new energy model will be proposed in parallel, with more specific actions related to the demonstration projects applied to the different neighbourhoods and areas.

The communication plan will put an important focus on making visible the co-benefits of the energy transition, such as economic savings for individuals and companies, the improvement of air quality, energy sovereignty, the satisfaction of producing and consuming local renewable energy in community with the neighbourhood, reducing noise pollution from combustion vehicles or creating quality local employment.

The plan will contain a results evaluation plan that allows to analyse, correct and dynamically improve its implementation in tasks T2.3 and T5.1.

T2.3: Production of materials and implementation of communication actions

This task contemplates the implementation of the communication actions defined in the T2.2 plan. This campaign will have to be massive in line with the ambition of the Energy Transition Strategy itself and the València 2030 Climate Mission.

In addition to the production of traditional audio visual and press materials, the development of actions in social, cultural and sports spaces is contemplated, such as plays, musical events, sports competitions, etc. On the other hand, at the root of T1.3, and under the Citizens' Alliance of T3.2, it is planned to collaborate with influencers and well-known people from valencian society to amplify the communication campaign on social networks such as Instagram, Twitter, TikTok, YouTube and Twitch.

As defined in the communication plan, the implementation will take into account the presence in the different neighbourhoods, to help bring this new energy culture closer to the population. In this sense, the involvement of educational centres, Fallas, musical bands and neighbourhood associations is considered key, as ideal social nodes to make the campaign reach the entire population.

Total budget of the Line of Action

Massive Energy Culture Campaign	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA2: Definition and implementation of the communication plan	872.000 €	404.000 €	108.000 €	252.000 €	-	108.000 €	-
T2.1: Definition of the communication strategy, messages and corporate image	17.000 €	17.000 €	-	-	-	-	-
T2.2: Design of the communication plan	135.000 €	135.000 €	-	-	-	-	-
T2.3: Production of materials and implementation of communication actions	720.000 €	252.000 €	108.000 €	252.000 €	-	108.000 €	-

Table 46 – Total Budget of Line of Action 2 in the Energy Culture Campaign

Financing options and mechanisms

For this Line of Action, the following funding channels are considered:

· Agreements and collaborative relationships with T1.3 media for the definition and collaborative implementation of the communication campaign and the corresponding actions.

· Sponsorships and collaborations with private companies and public entities to finance the implementation of communicative actions, with a special focus on social, sports and cultural areas (educational centres, schools, music bands and neighbourhood associations). The collaboration with private companies will avoid the possible loss of credibility with the public, caused by possible inconsistencies between the messages of the campaign and the activity of the companies.

· Possible European projects of Horizon Europe or Next Generation funds that allow for the inclusion of communication items, even if they are for sectoral issues such as, for example, the program CE Aprende of IDAE for communicative actions related to the energy communities.

Line of Action 3: Revitalisation of the Alliance for the Climate Mission

T3.1: Definition and development of the Alliance

The Alliance for the Climate Mission, defined as the root of the work of the Energy Transition Board, is a space where the commitment is united and the efforts of the entire valencian society are combined towards the common goal of making València a climate-friendly city neutral in 2030. It has 4 levels of participation: 1. Ambassador entities: entities with more means and, therefore, greater responsibility and climate commitment; 2. Affiliated entities: small neighbourhood entities (bars, shops, schools, associations...); 3. Committed Citizens: individuals who want to show their support and commitment to the Mission; 4. Influential figures: well-known and valued people who serve as a spokesperson for society.

In addition to the adhesion and commitment of the different participants, the Alliance will have to define the mechanisms that facilitate the formation of synergies and the coordination of work, mainly around the demonstration projects of the Just and Inclusive Energy Transition Strategy and the Climate Mission itself. The Alliance must be the meeting point between entities and individuals from the different helices of the city, to add and coordinate efforts around the transformation of València.

It is proposed to define a "green" or membership label for the Alliance, by the public administration, to make visible the efforts and commitments of society and the valencian ecosystem. Also, have their own social networks to give the Alliance its own image and entity, allowing the voice and operation of the Alliance to be separated from the administration or any other specific entity.

T3.2: Search for accessions and growth

Once the Alliance and its operation have been defined, this task aims to channel the adhesions to the 4 defined levels. Therefore, a simple and effective membership system must be structured, which, depending on the degree of commitment and personalisation at each level, must be more or less automatic.

The website of the Alliance must display all the accessions, in the form of a list with filters and in the form of a map, protecting, of course, personal data or locations in the case of the accessions of private individuals.

Finally, this task not only contemplates the channelling of memberships effectively, but also the proactive search within the different levels, through communicative actions, presentation days, direct contacts with potential Ambassador Entities and Influential Figures.

T3.3: Revitalisation and continuity of the Alliance

This task contemplates the continuity of the Alliance, at least during the duration of the Climate Mission to 2030. To ensure this continuity, it is considered fundamental to maintain transparency in the information and communication of results, in order to generate trust between people and entities that are part of it.

It is proposed to organise an annual Assembly or meeting in order to share these results and to make joint decisions between all the people and entities participating, in a democratic way and avoiding that the initiative is directed by the public administration or any other entity unilaterally.

In the same way, it is considered important that the dynamism of the Alliance itself, as well as the management of social networks and the rest of the tools, is shared and not solely in the hands of Valencia City Council as the prime mover. This co-governance must also apply to the resources necessary to keep the Alliance functioning (facilitating team, communication team, technical project monitoring team, etc.). In this sense, it is proposed that certain organizations participating in the Alliance (for example the Ambassadors) pay an annual fee as part of their commitment to the Climate Mission, which allows the Alliance to keep functioning without depending entirely on public financial support.

Total budget of Line of Action 3

Massive Energy Culture Campaign	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA3: Revitalisation of the Alliance for the Climate Mission	149.000 €	33.800 €	19.200 €	84.000 €	-	12.000 €	-
T3.1: Definition and development of the Alliance	5.000 €	5.000 €	-	-	-	-	-
T3.2: Search for accessions and growth	24.000 €	16.800 €	7.200 €	-	-	-	-
T3.3: Revitalisation and continuity of the Alliance	120.000 €	12.000 €	12.000 €	84.000 €	-	12.000 €	-

Table 47 – Total Budget of Line of Action 3 in the Energy Culture Campaign

Financing options and mechanisms

For this Line of Action, the following funding channels are considered:

· Fee to be paid by the ambassador entities to cover the costs of managing and maintaining the Alliance (stimulation, technical advice, communication and events) independently of public funding.

Line of Action 4: Organisation of conferences, events and workshops

T4.1: Organisation of conferences at city level

This task includes the organisation of conferences and events by the participating entities of the Alliance, in a coordinated manner and under the common framework of the València 2030 Climate Mission. These conferences will have a city scope (unlike those described in the T4.2) although care will be taken not to centralise them geographically in only a few locations. It is proposed to start from brands that are already known and have travelled around the city such as "València Change for the Climate!".

To provide these events with a common framework, it is proposed to establish the Month of the Energy Transition or the Month of the Climate Mission, so that the organization and participation in events and activities by all the entities of the Alliance during that month.

In order to achieve this replication of events by the entire public, private, academic and social ecosystem, the following tools are proposed: develop and share graphic and communicative resources, provide technical and logistical advice by the communication team of the Alliance, create a specific subsidy for the organisation of conferences in this framework, promote the dissemination and mutual support between the entities of the Alliance.

T4.2: Decentralisation of days in all neighbourhoods

Apart from the general events held at the city level of T4.1, the aim is to reach all the neighbourhoods of the city and particularise the activities and days to inspire and involve the whole neighbourhood. In this case, the collaboration of the Federation of Neighbourhood Associations and the corresponding neighbourhood associations of the neighbourhoods is key.

These meetings will be an opportunity to discuss and reflect with the neighbourhood on how the neighbourhoods are transformed on a day-to-day basis due to the Climate Mission and the energy transition; that is, what the transition implies, both in positive and negative aspects. In the same way, it is also planned to discuss what the neighbours are asking the administration and the rest of the Alliance, and what they can contribute from individual and collective action. It is also sought to take advantage of these activities to visit and show actions carried out by members of the Alliance in the different neighbourhoods (rehabilitations, photovoltaic installations, fleet electrification, etc.) that can be inspiring for citizens or other entities of the ecosystem

T4.3: Revitalisation of the Citizen Climate Assembly

Finally, this task proposes to create and energise a Citizen Climate Assembly that serves as a citizen body involved in decision-making regarding the Climate Mission. This Climate Assembly will have regular meetings to make decisions and evaluate the implementation of projects and the achievement of results.

The Assembly will be nourished by the reflections, contributions and suggestions of the events and neighbourhood days organised in T4.2, so that the decisions and proposals take into account the contribution of the neighbourhoods. It is proposed that the participation of the people who make up the Assembly be financially remunerated and that the participating people be chosen randomly with criteria of social representativeness.

Total budget of Line of Action 4

Massive Energy Culture Campaign	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA4: Organisation of conferences, events and workshops	1.090.000 €	552.000 €	178.000 €	280.000 €	-	80.000 €	-
T4.1: Organisation of conferences at city level	400.000 €	160.000 €	60.000 €	140.000 €	-	40.000 €	-
T4.2: Decentralisation of days in all neighbourhoods	400.000 €	16.800 €	60.000 €	140.000 €	-	40.000 €	-
T4.3: Revitalisation of the Citizen Climate Assembly	290.000 €	232.000 €	58.000 €	-	-	-	-

Table 48 – Total Budget of Line of Action 4 in the Energy Culture Campaign

Financing options and mechanisms

For this Line of Action, the following funding channels are considered:

· Sponsorships and collaborations with entities that are part of the Alliance, to organise and finance the implementation of events and conferences for tasks T4.1 and T4.2. For example, propose that the Alliance's ambassador entities undertake to organise at least 1 annual event related to the Energy Transition Strategy or the Climate Mission.

· Possible European Horizon Europe projects that can finance the creation and initial management of the Citizens' Climate Assembly. After the first years of operation, the Assembly can be maintained through the fees paid by the ambassador entities, as another tool within the Alliance.
Line of Action 5: Evaluation and growth

T5.1: Impact assessment of the different actions

This task contemplates the evaluation of the impact of the different actions and initiatives described in the previous lines of action. In this way, a double evaluation is proposed: firstly, define and measure indicators for monitoring the communicative actions (for example, visits to the website, publications on social networks, attendees at conferences, people who are members of the Alliance, etc.); secondly, it is proposed to evaluate the indirect impact of these actions (for example, relating the actions to the success of the other projects, or measuring the degree of neighbourhood interest and response with other initiatives related to the energy transition and climate change).

For this, it is necessary to establish a comprehensive control chart with global indicators of the project and with specific indicators for the different actions implemented, so that the impact can be evaluated by the resources used and thus correct, adjust and improve dynamically and flexible implementation of the energy culture campaign.

T5.2: Monitoring the communication needs of the city and the Alliance

This task seeks to continuously monitor the communication needs of the Fair and Inclusive Energy Transition Strategy of the city and the Alliance, in order to give continuity to the energy culture campaign in the medium and long term. In other words, after the implementation of a first campaign (lines of action 2, 3 and 4), and based on the evaluation carried out in T5.1, a plan will be made for subsequent phases of the campaign, thus updating the analysis carried out in T1.1.

T5.3: Visibility of successes and major transformations

In relation to tasks T2.3, T4.1 and T4.2, one of the objectives of the communication actions and events, apart from raising awareness and encouraging action, is to make successful cases visible to inspire others people and entities. This task seeks to analyse and evaluate successes and major transformations achieved by members of the Climate Mission Alliance, so that they are used in the communication initiatives described above.

The selection of successful cases will be made taking into account the following priorities: projects that have a great transformative impact and reduce emissions; initiatives that are easily replicated by other entities or people; show a variety of examples, public, private and social sectors and areas.

Total budget of Line of action 5

Massive Energy Culture Campaign	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA5: Evaluation and growth	55.000 €	28.250 €	-	22.650 €	-	4.100 €	-
T5.1: Impact assessment of the different actions	14.000 €	9.800 €	-	4.200 €	-	-	-
T5.2: Monitoring the communication needs of the city and the Alliance	20.000 €	9.000 €	-	9.000 €	-	2.000 €	-
T5.3: Visibility of successes and major transformations	21.000 €	9.450€	-	9.450€	-	2.100€	-

Table 49 – Total Budget of Line of Action 5 in the Energy Culture Campaign

Financing options and mechanisms

For this Line of Action, the following funding channels are considered:

· Sponsorships and collaborations with entities that are part of the Alliance, to co-organise the events where their corresponding success stories are presented, in relation to T5.3.

· Collaboration with public and private entities to take advantage of the economic performance that the data obtained in the T5.1 impact assessment of the different actions implemented in the project can have, respecting in any case the protection of personal data according to the LOPD.

Total budget

This budget shows the financial contributions needed to implement the project, both from the public sector and from the private, social and academic sectors.

Massive Energy Culture Campaign	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
LA1: Analysis and preparation	11.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	46.000 €
T1.1: Analysis of the current context and needs	5.000 €	-	-	-	-	-	-	-	5.000 €
T1.2: Alignment with the rest of the Strategy's projects	1.000€	-	-	-	-	-	-	-	1.000€
T1.3: Collaboration with entities in the communication field	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	5.000€	40.000€
LA2: Definition and implementation of the communication plan	60.000 €	116.000 €	116.000 €	116.000 €	116.000 €	116.000 €	116.000 €	116.000 €	872.000 €
T2.1: Definition of the communication strategy, messages and corporate image	10.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	17.000 €
T2.2: Design of the communication plan	30.000 €	15.000 €	15.000 €	15.000 €	15.000 €	15.000 €	15.000 €	15.000 €	135.000 €
T2.3: Production of materials and implementation of communication actions	20.000 €	100.000 €	100.000 €	100.000 €	100.000 €	100.000 €	100.000 €	100.000 €	720.000 €
LA3: Revitalisation of the Alliance for the Climate Mission	30.000 €	17.000 €	17.000 €	17.000 €	17.000 €	17.000 €	17.000 €	17.000 €	149.000 €
T3.1: Definition and development of the Alliance	5.000 €	-	-	-	-	-	-	-	5.000 €
T3.2: Search for accessions and growth	10.000 €	2.000 €	2.000 €	2.000 €	2.000 €	2.000 €	2.000 €	2.000 €	24.000 €
T3.3: Revitalisation and continuity of the Alliance	15.000 €	15.000 €	15.000 €	15.000 €	15.000 €	15.000 €	15.000 €	15.000 €	120.000 €
LA4: Organisation of conferences, events and workshops	180.000 €	130.000 €	130.000 €	130.000 €	130.000 €	130.000 €	130.000 €	130.000 €	1.090.000€
T4.1: Organisation of conferences at city level	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	400.000€

Massive Energy Culture Campaign	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
T4.2: Decentralisation of days in all neighbourhoods	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	400.000€
T4.3: Revitalisation of the Citizen Climate Assembly	80.000€	30.000€	30.000€	30.000€	30.000€	30.000€	30.000€	30.000€	290.000€
LA5: Evaluation and growth	-	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	20.000 €	55.000 €
T5.1: Impact assessment of the different actions	-	2.000 €	2.000 €	2.000 €	2.000 €	2.000 €	2.000 €	2.000 €	14.000 €
T5.2: Monitoring the communication needs of the city and the Alliance	-	-	-	-	5.000 €			15.000 €	20.000 €
T5.3: Visibility of successes and major transformations	-	3.000 €	3.000 €	3.000 €	3.000 €	3.000 €	3.000 €	3.000 €	21.000 €
TOTAL BUDGET	281.000 €	273.000 €	273.000 €	273.000 €	278.000 €	273.000 €	273.000 €	288.000 €	2.212.000 €

Table 50 – Total Budget of the Energy Culture Campaign

Description of the line of action

Buildings are responsible for nearly 40% of energy consumption and 30% of the city's CO2 emissions (considering only scopes 1 and 2). Specifically, the residential sector is responsible for 20%, the service sector for 17% and public buildings for between 1% and 2%.

The total number of homes in València is 410,100, of which 47.6% have already completed more than 50 years since their construction. According to regulations, these buildings have the obligation to develop their Building Evaluation Report (energy certification included). In addition, 68% of the homes were built before 1980, so they would receive a letter G for energy efficiency. Rehabilitating a building and managing to go from a letter G to a B means reducing its energy consumption 6 times, with the corresponding savings in emissions. However, the current estimated renewal rate in València is close to 0.03%. According to València City Council statistics, 122 rehabilitation licenses were granted in 2019, 36 of them comprehensive and 86 partial.

Of the total number of homes in the city, around 2% are single-family homes and around 98% are homes located in multi-family buildings. This fragmentation in demand makes it very difficult to speed up the renewal of the park, since in most actions joint decision-making is needed by communities of owners, who tend to have heterogeneous interests, priorities and resources.

On the other hand, the offer in the rehabilitation sector is also fragmented into small and medium-sized companies and self-employed professionals. In fact, self-employed workers represent around 30% of people working in the sector, micro-companies with less than 9 people make up 96% of companies and micro-companies without employees make up more than 60%, very over other economic sectors. This type of small company sometimes makes it difficult to implement comprehensive and ambitious renovations to apartments and buildings. The total number of people employed in the construction sector is 1,340,185 throughout Spain, in a total of 389,811 companies.

The project seeks to promote and accelerate a wave of renovation of buildings and homes in València, replicating at a local level the European Renovation Wave, which manages to convert the buildings located in the municipality into buildings with almost zero consumption or positive energy, through:

- Improvement of insulation and closures (windows, facades, etc.)
- Implementation of passive energy saving measures.
- Improvement of the energy efficiency of HVAC equipment, lighting, household appliances, etc.
- Substitution of equipment based on fossil resources (boilers, gas stoves) by electrical and renewable equipment.
- Implementation of renewable energies (photovoltaic, geothermal, aerothermal, etc.)
- Development of energy storage systems.
- Implementation of charging systems for electric vehicles.
- Implementation of demand management and consumption control systems.

SWOT and CAME analysis

OPPORTUNITIES	THREATS
Alignment with European and national strategies and funds (Renovation Wave) The current building stock has great scope for improvement and legally requires actions	Lack of inter-administrative coordination Fragmented sector: SMEs and the self-employed Economic barriers: low income, structural precariousness, post-pandemic crisis Danger of gentrification: rising prices
EXPLOTE	**ADAPT**
Preparing the ground for the arrival of funds Developing common strategies in several “clusters” of similar buildings Updating the property park in València to current energy saving needs	Commission and MTE for coordination New standard of public and sheltered housing Strengthening the role of AUMSA as a rehabilitative agent: direct intervention Taking advantage of European funds so that they reach those who do not have investment capacity
STRENGHTS	**WEAKNESSES**
Potential for replicability of solutions Important synergies between rehabilitation (reducing demand) and renewable installation The renovation of buildings fully affects people’s lives	Low profitability of some projects and lack of inclusive and social financing formulas Difficulty for information (e.g., about subsidies) to reach citizens Long processes in decision-making in communities
MAINTEIN	**CORRECT**
Facilitating replication in other buildings and areas thanks to the collaboration between entities Taking advantage of public interest in renewables and energy communities Communicate the co-benefits of the renovation: comfort, quality of life, real estate value...	Taking advantage of (mandatory) works to reduce energy performance costs Collaboration with professional associations, neighbourhood associations and estate administrators to reach the owners Creating social financing formulas, based on savings and with public investment

Table 51 – SWOT and CAME analysis of the Building Renovation Wave

Justification the line of action

Why is it an emblematic project of the València energy transition?

As previously stated, the building stock is the second cause of energy consumption and greenhouse gas emissions in the city, only behind those caused by mobility. Therefore, a change in the energy model goes very directly through a change and renovation of the buildings.

In addition, houses and buildings represent the most direct relationship between citizens and energy. It is in their home where people experience the different uses of energy on a daily basis (air conditioning, television, kitchen, hot water, household appliances, lights...). Therefore, the renovation of the buildings will have a direct impact on how citizens perceive energy and how they enjoy it, in addition to having a direct impact on their well-being and quality of life.

On the other hand, the project requires the full and total participation of the public as the majority owner of the buildings and houses in the city. For this reason, the project attaches great importance to communicating, raising awareness and involving people. This awareness has transformative impacts far beyond the rehabilitation itself, achieving a deeper cultural change towards a new energy model that places citizens at the centre and that manages to bring energy closer to people's day-to-day lives.

The renovation of buildings is, moreover, one of the best measures to end energy poverty, improving the comfort conditions of homes at the same time as reducing the energy expenditure of families, which has an impact on direct savings in your invoices. Therefore, the building energy renovation plan must prioritise action on vulnerable homes, using tools that do not involve a debt for domestic economies that neither have the capacity nor the resources to take it on. For this reason, it will be necessary to work with other areas of government such as Social Services, in order to identify and draw up an inventory of these homes.

Why is it a transformation project in the city, beyond energy?

Beyond achieving a reduction in energy consumption and emissions, the renovation of buildings leads to an improvement in the living conditions of the homes, having a direct impact on people's comfort and quality of life. As is obvious, homes are the place where people spend most of their lives; therefore, home improvement is one of the actions that have the most impact on the day-to-day life and well-being of citizens.

On the other hand, the rehabilitation of buildings is necessarily associated with the creation of local employment, mainly focused on small businesses and self-employed people. A great wave of rehabilitation is associated with significant local economic and professional development. In addition, the project aims to transform the city not in its centre, neither in an emblematic or

exemplifying place, but with a wave of renovation of buildings that reaches all the neighbourhoods and districts. The renovation of the building stock throughout the city will involve living in a sustainable and decarbonized city, but also more social, fair, inclusive, prosperous, pleasant, accessible, digital, intelligent, creative and healthy.

Previous experiences and learning

Mapping of previous initiatives

International	National	Local
Save the Homes	Olot City Council (HolaDomus)	OE València
Climate KIC	OSIR, Agencia Extremeña de la Energía	Offices OMIC
	Energy Advice Sites Punts Barcelona	Indertec/Imedes
	Basque government (Opengela)	Triodos
	MES Barcelona	Ética arquitectura
	Metropolitan Housing Consortium	Caixa Rural
	El Prat City Council (BCN)	Energy auditors
	Socaire. (Madrid)	
	Habitissimo	

Table 51 – Mapping of previous initiatives in the Building Renovation Wave

Learning

	Question	València Energy Office	HolaDomus d'Olot	MES Barcelona	Vilawatt
1	**What is the annual budget of the project?**	235.000€		€50M in Chapter 7 (capital transfers)	€290,000 + associated investments from the city council of €1,200,000.
2	**What is the total number of rehabilitation projects promoted?**	55 projects (advised) + 15 (projects underway) in 2020 (1st year)	335 (advised) + 95 (projects underway or completed) since the start of the project	850 applications in the study phase	3 buildings, with 56 homes in total. The current line is to reward individuals who take actions for energy efficiency in homes and businesses.
3	**Where does the budget come from to finance the project?**	70% council + 30% European projects		City Council (30%) + private partners (70%)	100% council in the post European project. In the case of the Vilawatt-UIA project, 80% UIA and 20% Council.
4	**Do they process licenses and/or grants?**	No	Yes	No	No
5	**Relationship with private financing lines**	Information from different banks is offered	Own public-private financing line	Yes, private partners co-finance 70%	Crowdfunding and other lines of financing associated with energy saving are being studied, with the help of the private sector.
6	**Do they have lists of validated professionals or skills?**	No	Yes, 60 registered professionals who meet technical, financial and legal criteria.	Yes: investment fund management companies, large energy companies, joint ventures	Yes, through a catalogue of Services.

	Question	València Energy Office	HolaDomus d'Olot	MES Barcelona	Vilawatt
7	**What are the most effective ways to reach citizenship?**	Mouth to ear, neighbourhood associations, communication campaign	Office visible at the foot of the street and in the Town Hall building. Mouth to ear	Communication campaign, web	Communication campaigns, office located in the centre of Viladecans. Direct participation of the Vilawatt Civic Association.
8	**How do they facilitate decision-making between owners**	Agreement with the College of Estate Administrators: talks, conferences...			Attendance at owner meetings if requested, direct communication by telephone, energy and technical advice directly and by e-mail.
9	Do they segment the city to work in specific neighbourhoods?	More impact in neighbourhoods around the Office	No	No	We have a very concentrated urban core, which would be comparable to a neighbourhood in a large city.
10	**What are the main barriers to achieving greater impact?**	Lack of resources (staff, tools, communication), difficulty with multi-family buildings, improve coordination with competent AP services	Lack of awareness and demand from the public	Agility of the collaborating companies in preparing the studies	General lack of energy culture. Difficulty in creating a municipal electricity company (legal format). Difficulties in involving citizens. The COVID-19 pandemic has stopped face-to-face activities in the Civic Association.

	Question	València Energy Office	HolaDomus d'Olot	MES Barcelona	Vilawatt
11	**What would you highlight about this project as a differentiating feature and key to success?**	Treating energy holistically, being close to the people, working with the neighbourhood structure to gain the trust of the population.		Offering facilities at zero cost for individuals. Being able to mobilise private investment.	Creation of the PPCP consortium (Public-Private-Citizen Partnership) as a governing body, a structure where neighbours are the protagonists and participate in decision-making. It integrates the services of renewable energy suppliers and producers, a savings operator, an investment operator and also a currency linked to energy savings.

Table 53 – Learning of previous initiatives in the Building Renovation Wave

Future vision and objectives in 2030

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Having an energetically efficient building stock, reducing its CO2 emissions	<15 kWh/m² year in renovated buildings Rehabilitation rate of 1.5% in 2025 and 3% by 2030 We have managed to make 100% of public buildings NZEB (e.g., Schools) Medium letter C in rehabilitated buildings and homes
Improving people's quality of life, achieving friendlier and socially and economically attractive buildings and neighbourhoods	Rehabilitation rate of 1.5% in 2025 and 3% by 2030 0% energy poverty in rehabilitated buildings 50% improvement in comfort, physical and mental health in rehabilitated homes 90% satisfaction of the users
Mitigating energy poverty, improve people's physical and mental health and reduce the impact of cold and heat waves	Rehabilitation rate of 1.5% in 2025 and 3% by 2030 50% improvement in comfort, physical and mental health in rehabilitated houses 0% energy poverty in rehabilitated buildings Maximum of 5% energy poverty in the city

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
	20% of the rehabilitated houses are energy self-sufficient Prioritisation in vulnerable areas of the city Less than 5% average price increase in rehabilitated buildings
Achieving a digitised and intelligent building stock	There is an integrated system of centralisation and data management of the city's buildings 50% of rehabilitated buildings include monitoring and "intelligence" 20% of rehabilitated houses participate in the transfer of data and intelligent management of their consumption
Eliminating fossil fuels from buildings through electrification and the use of renewable energy	Rehabilitation rate of 1.5% in 2025 and 3% by 2030 25% of energy consumption in rehabilitated buildings is covered by local renewables 90% of the buildings' electricity consumption is (local or contracted) renewable 90% electrification in the rehabilitated park

FUTURE VISION (QUALITATIVE)	**QUANTITATIVE OBJECTIVES**
Deploying digitised district heating, cooling and DHW networks based on renewable energy and using industrial waste heat	25% of energy consumption in rehabilitated buildings is covered by local renewables 90% of the buildings' electricity consumption is (local or contracted) renewable 90% of the buildings' electricity consumption is (local or contracted) renewable 25% of the rehabilitated buildings have a centralised DHW installation
Achieving a green and sustainable building park, with solutions based on nature and traditional ways of building	50% improvement in comfort, physical and mental health in rehabilitated houses 10% of the rehabilitated buildings incorporate solutions based on nature
Promoting local and quality employment, thanks to the development of business models linked to the green and energy economy	80% of investment in refurbishment is private 20% increase in employment rate in the sector at local level 100 validated and collaborating companies and professionals
Massively deploying renewable self-consumption and Neighbourhood Energy Communities	25% of energy consumption in rehabilitated buildings is covered by local renewables 75% of municipal buildings with photovoltaic plants 15% of the population participates in a NEC or self-consumption

FUTURE VISION (QUALITATIVE)	QUANTITATIVE OBJECTIVES
Administratively facilitating and financially subsidising the actions in the buildings	There are decentralized offices for processing, licenses and subsidies Average duration of the administrative processing process of less than 1 month 95% of the transactions can be executed by electronic administration
Strengthening the business structure of construction, the green and energy economy	100 validated and collaborating companies and professionals 20% increase in employment rate in the sector at local level
Creating awareness of the need to energetically rehabilitate your home, as well as to consume renewable energy in a responsible manner	There is a network of neighbourhood energy agents to promote rehabilitation and good energy habits 40% more environmental awareness and knowledge of good habits in the people of the rehabilitated buildings
Having clear, simple and agile procedures, tools and guides for the rehabilitation of buildings	1 practical guide for citizens on the rehabilitation of buildings and houses at local level, with good practices 1 technical guide for professionals and administrations on the rehabilitation of buildings and houses

Table 55 – Future vision and objectives of the Building Renovation Wave

Governance and coordination

The entities shown in this section have been identified through three successive mappings carried out collaboratively with the INGENIO Institute of the Universitat Politècnica de València, the participating entities of the Energy Transition Board and the participating entities of the Specific Commission of this demonstration project, respectively.

However, the list of entities that are protagonists in the different roles and sectors can change and grow with the contributions of more entities and with the progress of their implementation.

	Public sector	Academy	Private sector	Civil society	Mass media
Promotors	**VCE, City Council (Climate Emergency and Energy Transition), IVE,** GVA (Housing and Bioclimatic Architecture)		**ASELEC, AVAESEN, FEVEC**	**CAFVC**	
Executors			Rehabilitation agents, Rehabilitation managers, Property managers, Installation companies, Companies in the energy sector		
Support	City Council (Social welfare), **The Ships, IVACE,** IDAE	**UPV-IIE-Catenerg, ITE,** professional education centres	**I-DE,** Equipment manufacturers, financial companies	**COIICV**, CAATIE, COACV, COITCV, **FAAVV,** tertiary sector entities, Col·legi Oficial de Treball Social de València, Neighbourhood shops associations, FAMPA, Universitat Popular	**APIA,** València Plaza, Levante, València Extra, À Punt, EFE Verde
Users	City Council (Technical Central Services), GVA			Citizenship, owners	

Table 55 – Entities implied in the Building Renovation Wave

Itinerary

Line of Action 1: Evaluation of the park of buildings

Task 1.1: Elaboration of Building Assessment Reports and Energy Efficiency Certificates

In order to assess the current and real state of the city building stock, it is necessary to program a systemic evaluation process of the buildings, which allows us to know the needs of the stock, as well as the main areas of action.

This task seeks to produce in a massive way, but ensuring a high technical quality, Energy Efficiency Certificates for buildings and houses in the city, thus expanding the already existing records (https://calab.es/observatorio-del-habitat/ieev-cv/) with more real data and analysis of improvement possibilities, including their cost estimate and savings achieved.

To achieve this, use will be made of the existing aids for the preparation of l'Informe d'Avaluació d'Edifici (Building Evaluation Report) In addition, the real application of the law requiring the preparation of these reports by buildings over 50 years old will be sought, with the application of sanctions and increased public pressure.

T1.2: Energy modelling of the park of buildings

On the basis of all the existing CEEs, the aim is to energetically simulate the entire building stock of the city, so that the analyses can be extrapolated to the rest of the buildings and houses that have not yet drawn up their own certificate.

This simulation, apart from the information from the existing CEEs, will be able to incorporate data such as energy consumption from DATADIS, cadastral information, irradiance and shadows of the building, etc. The opportunity to take advantage of tools and previous experiences, such as RenovEU, MAtchUP, Save the Homes or IMPACTE, is emphasised.

This large-scale energy modelling will be published openly (e.g., by embedding it as another layer in the GVA map viewer). In this way, it will also be used as a tool for awareness and guidance for citizens interested in improving and renovating their homes.

T1.3: Development of digital twins of the most representative types of buildings

To complete the previous tasks, this task proposes to develop digital twins of the most representative types of residential buildings in the built-up area of the city, so that information and data that are more complete and closer to reality can be extracted, and they can be modelled different actions with their costs and impacts, with a view to grouping demand around standardised solutions.

In addition, it is also considered to apply these high-quality simulations in large tertiary buildings in the city, driven in this case by the owners of these buildings, so that the impact and efficiency of the renovations carried out is optimised in these buildings.

Total budget of Line of Action 1

Building Energy Renovation Wave	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Evaluation of the park of buildings	5.480.582€	326.029€	1.160.116€	40.000€	286.029€	-	3.668.407€
T1.1: Elaboration of Building Assessment Reports and Energy Efficiency Certificates	5.240.582€	262.029 €	1.048.116 €	-	262.029€	-	3.668.407€
T1.2: Energy modelling of the park of buildings	160.000€	48.000€	80.000€	16.000€	16.000€	-	-
T1.3: Development of digital twins of the most representative types of buildings	80.000€	16.000€	32.000€	24.000€	8.000€	-	-

Table 56 – Total Budget of Line of Action 1 in the Building Renovation Wave

Financing options and mechanisms for Line of Action 1

The following mechanisms or opportunities are considered to finance the tasks described in this Line of Action:

· Regional subsidies for the preparation of Building Assessment Reports or Energy Efficiency Certificates, such as IAE grants (GVA) or Program 5 of RD 853/2021 (GVA).

· Other subsidies, such as Programs 1, 3 and 4 of RD 853/2021 or personal income tax deductions of RD 19/2021, where the preparation of these reports can be included as part of the rehabilitation actions.

· Resources, technical support and good practices achieved through European projects such as H2020 Save the Homes, MAtchUP or HE EBENTO to finance the development of tools for simulation and visualisation of the energy behaviour of the park of buildings.

Line of Action 2: Communication and social revitalisation

T2.1: Disclosure and communication

In collaboration with the demonstration project "Massive campaign of energy culture", it is sought to develop a communication campaign, with the elaboration of a strategy, implementation of actions, design and production of materials, hiring of communication channels, elaboration of web portal, etc. with simple and direct information that makes visible the benefits of energy rehabilitation and proposes concrete solutions, costs, savings, aid and financing possibilities. It will be used to make visible the work done in EA1, as well as make visible good practices, savings achieved, testimonials from people, etc. The campaign will be adapted to the needs and particularities of the different districts and neighbourhoods, in accordance with the analysis carried out in T1.2.

T2.2: Local information and support offices

In collaboration with the demonstration project "Deployment of Energy Offices", it is proposed to offer a service of advice and close support to facilitate the energy rehabilitation of the residential sector. These rehabilitation services will be offered at neighbourhood level and will be defined in accordance with the same analyses of T1.2 and based on previous studies and experiences such as the Save the Homes project and the Red Xaloc.

The offices will play a dissemination role at neighbourhood level, beyond their walls, serving as a connector node with neighbourhood, cultural, and all kinds of associations, which serve as "catalysts" of information, in accordance with the T2.3.

T2.3: Revitalisation and involvement of the social structure

This task seeks to establish ties and collaborations with the social structure of the neighbourhoods, such as neighbourhood associations, family associations, educational canters, consumer groups, clubs, music bands and any entity that can collaborate in the dissemination of information between people potentially interested in rehabilitation. It will also seek to collaborate with the private and professional sector, through estate administrators, professional colleges, vocational training centres and business federations and associations.

On the other hand, in relation to T2.1 and in a coordinated manner by the offices deployed in T2.2, they will organise and participate in workshops, events, fairs and communicative actions at street level, in municipal markets, squares, educational centres and emblematic spaces of the neighbourhoods.

Finally, it is proposed to set up the Citizens' School for Energy Rehabilitation, as a group for the exchange of experiences between residents, so that they can share advice, doubts and references, in such a way that some people act as mentors to others and there is collective learning under the advice of the neighbourhood offices.

T2.4: Fair transition

This task ensures that the wave of building renovation involves and benefits vulnerable groups and people, including them in the definition and implementation of the programs. In this way, social revitalisation tasks, advice and training workshops specifically focused on people with energy vulnerability are included, so that it is used to train in energy rights, invoice optimisation and good energy habits, at the same time as it helps them to access existing aid and tax deductions, which can cover up to 100% of the costs for the energy rehabilitation of these homes in vulnerability.

In addition, the role of the public administration must be proactive and with a special dedication of resources to the most vulnerable neighbourhoods and buildings, where they can even act as public rehabilitation agents and managers to facilitate the rehabilitation of those buildings Mediation between owners and users of the homes will also be facilitated, to ensure that people in a rental situation are not left out of these programs.

Finally, the public administration will coordinate with the rest of the services and competent bodies to avoid possible negative effects of the wave of rehabilitation, such as the increase in purchase and rental prices of homes and the effects of gentrification in neighbourhoods and buildings rehabilitated.

Total budget of Line of Action 2

Building Energy Renovation Wave	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA2: Communication and social revitalisation	8.641.600€	4.680.560 €	2.661.560 €	473.080 €	413.080 €	60.000 €	353.080 €
T2.1: Disclosure and communication	1.200.000 €	840.000 €	120.000 €	120.000 €	60.000 €	60.000 €	-
T2.2: Local information and support offices	7.061.600 €	3.530.800 €	2.471.560 €	353.080€	353.080€	-	353.080€
T2.3: Revitalisation and involvement of the social structure	350.000 €	280.000 €	70.000 €	-	-	-	-
T2.4: Fair transition	30.000 €	30.000 €	-	-	-	-	-

Table 57 – Total Budget of Line of Action 2 in the Building Renovation Wave

Financing options and mechanisms for Line of Action 2

The following mechanisms or opportunities are considered to finance the tasks described in this Line of Action:

· Collaboration agreements with the media, the social structure and entities in the business sector to promote sponsorships and synergies in the implementation of communication actions, preparation of communication materials, organisation of events and workshops, etc.
· Programs 1 and 2 of RD 853/2021 (GVA) and Red Xaloc (GVA) to subsidise the operation of Energy Offices that act as one-stop shops for rehabilitation.
· Resources, technical support and good practices achieved through European projects such as H2020 Save the Homes to finance the development of Energy Offices.

Line of Action 3: Administrative management

T3.1: Review of ordinances, urban plans and regulations

This task proposes the need to have a legal and technical team that will continue with the work of reviewing ordinances and regulations to remove barriers and facilitate rehabilitation, such as the recent review of the NNUU of the PGOU of "Improvement of the universal accessibility, energy efficiency and self-consumption with facilities for the use of solar energy in existing buildings", the revision of the municipal solar capture ordinance to include photovoltaic uses in addition to thermal ones or the elimination of the need to apply for a municipal license approved by the Generalitat Valenciana in Law 7/2021.

In this sense, it is proposed to update the current PGOU with the new demographic forecasts of the city, the new strategic framework of the Urban Agenda, the commitments of the City Council and the Generalitat Valenciana in their declaration of climate emergency and the València 2030 Mission Climate.

On the other hand, in relation to T1.1, it is considered crucial to strengthen the ordinances and their compliance in relation to the obligation for buildings over 50 years to draw up their Building Assessment Report. Along these lines, the ban or restriction on the use of natural gas and butane gas in the residential sector is proposed as a future measure to achieve the goals of electrification and penetration of renewables in the sector. However, the problems of energy poverty that this can generate must be taken into account, depending on the state of energy prices at the time, so that the most vulnerable groups are not harmed.

Finally, this task seeks to technically, legally and administratively study the possibility of implementing a regulatory sandbox in specific zones or areas of the city, so that the effects of this measure can be tested in the increase in the rate of energy renewals. To study this possible solution, we will collaborate with all the necessary administrative levels.

T3.2: Revitalisation of rehabilitation agents and managers

This task contemplates the analysis, development and dynamism of new figures and new public and private financing services to facilitate the economic investments necessary to implement the wave of renewal. It will start from the new figures of manager and rehabilitator agent, with the focus on promoting local employment and promoting the appearance of these figures among the professional structure already existing in the neighbourhoods.

As for the figure of rehabilitation agent, the project seeks to energise the market of private agents through collaboration with private companies and consortia. This way, continuing with the existing Registre per la Qualitat en l'Hàbitat Construït (Registration for Quality in Built Housing) of the Generalitat Valenciana and the Institut Valencià de l'Edificació, seeks to validate the technical, economic and social quality of private agents and serve as a link with the public through the Energy Offices of T2.2. On the other hand, it will collaborate with AUMSA as a public and local rehabilitation agent to facilitate its operations, mainly in the city's vulnerable neighbourhoods and buildings.

With reference to the figure of rehabilitator manager, the project seeks to collaborate with professionals who can assume part of the competences of that figure, such as estate administrators, companies in the rehabilitation sector and companies of the financial field, in order to train them, coordinate the services offered and manage to offer a complete and efficient solution to the owners.

T3.3: Communication and management of subsidies and tax credits

Through multi-level collaboration in the public sphere and the inclusion of private financial entities, the aim is to simplify and facilitate the access of property owners to the various subsidies, tax deductions and financing options that exist in the 'area of rehabilitation, with special focus on the financing options offered by rehabilitation agents as "turnkey" solutions, in the 15-year preferential financing solutions that exist based on the endorsement of the ICO, and in the aid and subsidies offered by the different levels of administration with Next Generation funds.

The project will systematically collect all this information and transmit it in a simplified and accessible way to citizens, through the communication channels of T2.1, the offices of T2.2 and the collaborations with the T2.4 and T3.2 ecosystem. This task will also collaborate with the competent administrations to speed up the management of the different lines of subsidies, collaborating closely with the local offices of T2.2.

Total budget Line of Action 3

Building Energy Renovation Wave	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA3: Administrative management	6.245.000 €	1.951.000 €	4.294.000 €	-	-	-	-
T3.1: Review of ordinances, urban plans and regulations	170.000 €	136.000 €	34.000 €	-	-	-	-
T3.2: Revitalisation of rehabilitation agents and managers	75.000 €	15.000 €	60.000 €	-	-	-	-
T3.3: Communication and management of subsidies and tax credits	6.000.000 €	1.800.000 €	4.200.000 €	-	-	-	-

Table 58 –Total Budget of Line of Action 3 in the Building Renovation Wave

Financing options and mechanisms for Line of Action 3

Due to its nature, this Line of Action requires a significant public investment, in order to adapt legislation, regulations and subsidies to the objectives of the project. However, the following mechanisms are considered to finance the tasks described:

- The costs of preparing T3.3 grants can be borne by managers and private agents and partially subsidised with calls for aid such as Programs 3 and 4 of RD 853/2021 (GVA).

- Programs 1 and 2 of RD 853/2021 (GVA) and Red Xaloc (GVA) to subsidie the operations of Energy Offices that act as one-stop shops for rehabilitation, including the analysis, simplification and dissemination of the information regarding regulations, subsidies and financial options.

- Resources, technical support and good practices achieved through European projects such as H2020 Save the Homes and HE EBENTO to finance the analysis of subsidies, financial instruments and agents involved.

Line of Action 4: Rehabilitation

T4.1: Development of technical rehabilitation studies

This task contemplates the development of the technical reports, economic budgets and administrative documents necessary to carry out the energy rehabilitation of residential and tertiary buildings. This work will be carried out mainly by public and private rehabilitation agents, with whom T3.2 will collaborate.

For the drafting of this technical documentation, it is also sought to encourage collaboration between professional associations (architects, technical architects, engineers, estate administrators), companies in the sector, professionals and freelancers, financial entities, and bodies of control like ASEIVAL. This collaboration will be based on the figure of the rehabilitator manager, who will coordinate all these actors with the communities of owners and the owners.

T4.2: Organisation of group purchases of rehabilitation solutions

In order to speed up and make the mass renovation of buildings and homes cheaper, this task seeks to group the demand and purchase of rehabilitation solutions by different owners and communities of owners. In this way, based on the characterisation of tasks T1.2 and T1.3, and the technical studies developed in T4.1, a series of standardised solutions will be defined with the help of rehabilitation agents and the professionals involved in T3.2, with special involvement of business associations such as ASELEC, AVAESEN or ADIME.

These solutions, with costs, benefits, impacts, available subsidies and financing schemes, will be shared with the communities of owners and the people who own them, through the social structures involved in T2.3, such as the Citizen's School for Energy Rehabilitation or Neighbourhood Energy Communities.

T4.3: Administrative processing, execution of works and turnkey delivery

This task is a continuation of tasks T4.1 and T4.2 in which the rehabilitation works are actually carried out and the energy solutions are applied, in accordance with the technical, economic and administration documents developed previously.

Again, this task involves the collaboration and action of the entire private, public, social and academic ecosystem of the city, with a predominant role of rehabilitation agents and managers, with the aim of carrying out this massive building renovation wave with a focus on encouraging maximum local and green employment.

Total budget Line of Action 4

Building Energy Renovation Wave	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA4: Rehabilitation	796.61 388€	39.852. 419€	120.033. 316€	-	524.058 €	-	636.206. 594€
T4.1: Development of technical rehabilitation studies	10.481.163€	524.058€	2.096.233€	-	524.058€	-	7.336.814€
T4.2: Organisation of group purchases of rehabilitation solutions	48.000 €	24.000 €	24.000 €	-	-	-	-
T4.3: Administrative processing, execution of works and turnkey delivery	786.087. 225€	39.304. 361€	117.913. 084€	-	-	-	628.869. 780€

Table 59 – Total Budget of Line of Action 4 in the Building Renovation Wave

Financing options and mechanisms for Line of Action 4

This Line of Action contemplates very high economic contributions from a multitude of agents, propellers and sectors. In order to carry out the defined tasks, the following funding mechanisms or channels are considered:

· Programs 1, 3 and 4 of RD 853/2021 (GVA) to subsidise the cost of rehabilitation works in neighbourhoods, buildings and homes respectively, as well as the development of the corresponding technical reports, economic budgets and administrative documents.

· Programs 1 and 2 of RD 853/2021 (GVA) and Red Xaloc (GVA) to subsidise the operation of Energy Offices that serve as a point of grouping and dynamism of grouped purchases in relation to T4 .2.

· Financing solutions and "turnkey" services offered by public and private rehabilitation agents who assume the financing needs to carry out the works without the need for investment by the owners.

· Financial entities, banks and savings banks that finance rehabilitation works with preferential conditions under the agreement with the Official Credit Institute approved in RD 19/2021.

· Tax deductions approved in RD 19/2021 for the energy renovation of buildings and homes, as well as tax deductions that can be approved at municipal level.

Line of Action 5: Evaluation and optimisation

T5.1: Digitisation, collection and analysis of quality data

This task aims to collect data on the building stock and its energy behaviour, through three main ways: the installation of smart sensors with a budget included in the renovations, the use of already existing data in the buildings, the participation of the people who use the buildings.

This data will be analysed using debugging and treatment algorithms, respecting the LOPD at all times, in order to feed tasks T1.2, T1.3, T5.2 and T5.3. Apart from this, the anonymised data will be available on open servers such as VLCi, because they serve to plan and develop new projects and policies in the public, private, social and academic spheres.

Citizen involvement in the use of data that already exists in buildings, such as those collected by smart meters in homes, and in the collection of data on use, satisfaction, comfort, etc. it will be promoted through consideration such as services for intelligent management of energy consumption, personalised advice on optimising energy savings and bills, or personalised proposals for rehabilitation solutions, renewable energies or electric mobility, among others.

T5.2: Evaluation and visibility of achievements

Based on the data collected and analysed in T5.1, we seek to evaluate the results achieved by the rehabilitations carried out in T4.3, both at an individual level to compare with the analyses carried out in tasks T1.2, T1. 3 and T4.1, as a global level to evaluate compliance with the indicators and objectives defined in section 4 "Future vision and quantitative objective in 2030" of this demonstration project.

It is emphasised the importance of taking into account in this assessment the energy savings obtained, the percentage reduction in greenhouse gas emissions achieved, the economic impacts of the savings achieved, the social characteristics of the affected population and their improvement in living conditions comfort, as well as the mitigation of energy poverty achieved.

The success cases observed with this evaluation will be used as communication materials in T2.1 and T2.3 tasks, with the possibility of feeding a public platform of indicators related to the T1 improvement potential map. 2, which makes visible how the different neighbourhoods in València are progressing in the rehabilitation of their park. With the same aim of inspiring and encouraging action, it is considered appropriate to take advantage of emblematic public buildings as benchmarks of good practice.

T5.3: Training to maximise savings and ensure optimal operation and comfort

Finally, as a complement to the energy renovations carried out in T4.3 and with the aim of maximising the savings results achieved, this task proposes to organise training days and workshops with the owners and users of the renovated homes, for train in good energy practices, energy rights, energy bills and self-assessment and care for personal comfort.

These training actions will be boosted through the advice offices of T2.2 and the social structure involved in T2.3, with special attention to people in a situation of energy vulnerability, complementing T2.4.

Total budget Line of Action 5

Building Energy Renovation Wave	Total	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA5: Evaluation and optimisation	7.962.872€	1.276.731€	4.716.523€	790.487€	393.044€	-	786.087€
T5.1: Digitisation, collection and analysis of quality data	7.860.872€	1.179.131€	4.716.523€	786.087€	393.044€		786.087€
T5.2: Evaluation and visibility of achievements	22.000€	17.600€	-	4.400€	-	-	-
T5.3: Training to maximise savings and ensure optimal operation and comfort	80.000€	80.000€	-	-	-	-	-

Table 60 – Total Budget of Line of Action 5 in the Building Renovation Wave

Financing options and mechanisms for Line of Action 5

In this Line of Action, the following financing methods are considered, respecting in any case the LOPD and the informed consent of the users:

· Collaboration with public and private entities to take advantage of the economic performance of the data obtained in T5.1.

· Collaboration with public and private entities to facilitate the monitoring of consumption and comfort conditions of homes and rehabilitated buildings, in exchange for privileged access to this data.

· Programs 1 and 2 of RD 853/2021 (GVA) and Red Xaloc (GVA) to subsidise the operation of Energy Offices that boost T5.3 formations.

Total budget

This budget shows the financial contributions needed to implement the project, both from the public sector and from the private, social and academic sectors.

Building Energy Renovation Wave	Year1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
LA1: Evaluation of the park of buildings	70.551 €	212.205 €	215.513 €	421.026 €	667.642 €	955.360 €	1.284.181€	1.654.104€	5.480.582€
T1.1: Elaboration of Building Assessment Reports and Energy Efficiency Certificates	20.551 €	82.205 €	205.513 €	411.026 €	657.642 €	945.360 €	1.274.181 €	1.644.104 €	5.240.582€
T1.2: Energy modelling of the park of buildings	50.000 €	50.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	160.000€
T1.3: Development of digital twins of the most representative types of buildings	-	80.000 €	-	-	-	-	-	-	80.000 €
LA2: Communication and social revitalisation	150.000€	1.223.800€	1.208.800€	1.208.800€	1.208.800€	1.223.800€	1.208.800€	1.208.800€	8.641.600€
T2.1: Disclosure and communication	150.000 €	150.000 €	150.000 €	150.000 €	150.000 €	150.000 €	150.000 €	150.000 €	1.200.000€
T2.2: Local information and support offices	-	1.008.800€	1.008.800€	1.008.800€	1.008.800€	1.008.800€	1.008.800€	1.008.800€	7.061.600€
T2.3: Revitalisation and involvement of the social structure	-	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	50.000 €	350.000 €
T2.4: Fair transition	-	15.000 €	-	-	-	15.000 €	-	-	30.000 €
LA3: Administrative management	890.000€	765.000 €	765.000 €	765.000 €	765.000 €	765.000 €	765.000 €	765.000 €	6.245.000€
T3.1: Review of ordinances, urban plans and regulations	100.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	170.000 €
T3.2: Revitalisation of rehabilitation agents and managers	40.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	5.000 €	75.000 €

Building Energy Renovation Wave	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
T3.3: Communication and management of subsidies and tax credits	750.000 €	750.000€	750.000 €	750.000€	750.000€	750.000€	750.000€	750.000€	6.000.000€
LA4: Rehabilitation	3.143. 798€	12.499. 190€	31.241. 976€	62.479. 952€	99.965. 523€	143.698. 690€	193.679. 451€	249.907. 808€	796.616. 388 €
T4.1: Development of technical rehabilitation studies	41.103 €	164.410 €	411.026 €	822.052 €	1.315.283€	1.890.720€	2.548.361€	3.288.208€	10.481.163€
T4.2: Organisation of group purchases of rehabilitation solutions	20.000 €	4.000 €	4.000 €	4.000 €	4.000 €	4.000 €	4.000 €	4.000 €	48.000 €
T4.3: Administrative processing, execution of works and turnkey delivery	3.082. 695€	12.330. 780€	30.826. 950€	61.653. 900€	98.646. 240€	141.803. 970€	191.127. 090€	246.615. 600 €	786.087. 225€
LA5: Evaluation and optimisation	55.827 €	134.308€	319.270€	627.539€	997.462€	1.429.040€	1.922.271€	2.477.156€	7.962.872€
T5.1: Digitisation, collection and analysis of quality data	30.827€	123.308€	308.270€	616.539€	986.462€	1.418.040€	1.911.271€	2.466.156€	7.860.872€
T5.2: Evaluation and visibility of achievements	15.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	1.000 €	22.000 €
T5.3: Training to maximise savings and ensure optimal operation and comfort	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	10.000 €	80.000 €
TOTAL BUDGET	4.310. 176 €	14.834. 503 €	33.750. 559 €	65.502. 317 €	103.604. 427 €	148.071. 889 €	198.859. 703 €	256.012. 868 €	824.946. 442 €

Table 61 – Total Building Renovation Wave Budget

Other projects

This section includes other projects or initiatives that have been proposed throughout the participatory process and working groups, but that have not been included directly within the 6 lines of action defined above and considered priorities by the Energy Transition Board.

TRAINING WORKSHOPS FOR JOURNALISTS

DESCRIPTION

Training, awareness and information workshops on energy for journalists and journalism students. The workshops cover different aspects of the energy transition, such as the climate emergency, the need to promote another energy model, renewable energies, the right to energy, electric mobility, efficiency and efficiency energy saving, etc. The aim of the workshops is to give journalists tools and resources to be able to communicate about a subject that is sometimes unknown and too technical, such as energy.

BARRIERS	OPPORTUNITIES
Possible lack of interest from journalists	Topic of growing social interest
Need for resources for the organisation without having direct economic performance	High potential to reach citizens through the media

ACTORS

Promoters: City Council, APIA, UV, UPV-Catenerg
Executors: VCE, Office of Energy
Support: COIICV, ASELEC, AVAESEN, The Ships
Users: Professional Association of Valencian Journalists, Union of Valencian Journalists, journalists, journalism students

ENERGY TRANSITION COMMUNITY PLATFORM

DESCRIPTION

Virtual platform (web and/or App) that allows for the exchange of initiatives and fluid collaboration between citizens and private, public and academic actors. Specifically, this platform offers: (1) information on the energy transition (renewables, efficiency, savings, right to energy...); (2) calendar of events and workshops in the sector; (3) materials, guides, brochures and audio visual resources; (4) online calculators and tools (energy self-diagnosis, invoice optimisation, solar cadastre...); (5) map of relevant actors in the energy sector; (6) good practices and experience exchange forums to share and promote community initiatives.

BARRIERS	OPPORTUNITIES
It requires significant management and maintenance Significant financial investment without a clear return It requires a large and active community	Aligned with Smart City initiatives Creation of community awareness and citizen empowerment Aggregator of initiatives and tools

ACTORS

Promotors: Aeioluz, UPV-Catenerg, The Ships
Executors: software companies
Support: VCE, Smart City VLC, ASELEC, AVAESEN, ONGs, IVE, I-DE, APIA
Users: citizenship, Neighbour associations, shops

PROMOTION OF ENERGY CHANGE IN AGRICULTURE

DESCRIPTION

Information and awareness campaign to encourage changes in the world of agriculture towards practices aligned with sustainability and the new energy model. The campaign consists of 3 elements: (1) materials, infographics and guides to be distributed among associations, companies, freelancers and individuals in the agriculture sector; (2) informative workshops for professionals in the agricultural sector; (3) presentation event of good practices for dissemination among professionals and citizens. The topics discussed in the campaign include, among others, the agricultural voltaic one and the incorporation of renewable energies in agriculture; energy saving and efficiency in agricultural practices; energy billing for the agricultural sector.

BARRIERS	OPPORTUNITIES
Possible lack of interest from professionals Need for resources for the organisation without having direct economic performance	Sector normally aligned with sustainability and care for the environment

ACTORS

Promoters: CEACV, Agricultural Council
Executors: environmental education companies, CEACV
Support: VCE, FAAVV
Users: farmers, AVA-ASAJA

PROGRAMA COMPROMETIDOS

DESCRIPTION

Program to support and accompany the measurement of the carbon footprint of different entities, in order to be able to reduce it and compensate it accordingly.

BARRIERS	OPPORTUNITIES
Necessary the will of the entities to participate Low direct economic return for the entities that promote the program	Growing interest from a large part of society Economic performance for participating entities, if they manage to save by making processes more efficient

ACTORS

Promoters: GVA, CEACV
Executors: environmental education companies
Support: VCE
Users: entities and companies

SOCIALISED PLANTS

DESCRIPTION

Renewable energy installations not only reduce greenhouse gas emissions and the consumption of fossil fuels, but currently represent investments with high economic returns. In order to involve citizens in the facilities developed by the public administration, it is proposed to allow the collective financing of these facilities, so that they are economically socialised, allowing the administration to obtain economic investment in an agile way and allowing citizens to be part of this transformation process.

BARRIERS	OPPORTUNITIES
Administratively complex process	Great public interest Possibility of obtaining economic investment in an alternative way to banks and traditional entities

ACTORS

Promoters: City Council, València Clima i Energia, The Ships
Executors: engineers, installers, energy revitalisation companies
Support: neighbourhood associations, CAFVC, Som Energia
Users: citizens

COLLECTIVE PURCHASES OF RENEWABLE INSTALLATIONS

DESCRIPTION

In order to speed up and make the massive installation of renewable energy in buildings cheaper, it seeks to group the demand and purchase of installations by different owners and communities of owners. In this way, a series of standardised solutions will be defined, with costs, benefits, impacts, available subsidies and financing schemes, and will be shared with owner communities and owners.

BARRIERS	OPPORTUNITIES
Difficulty with multi-dwelling buildings	Accelerate a massive, fast and more economical deployment of renewable installations

ACTORS

Promoters: OCU, Som Energia, City Council
Executors: installers, engineers
Support: València Clima i Energia, The Ships, Aeioluz, Ecooo, neighbourhood associations, CAFVC
Users: citizens

RENEWABLE INSTALLATIONS ON PRIVATE ROOFS

DESCRIPTION

In a city like València, the deployment of renewable installations on private roofs goes through the model of collective and shared self-consumption in the communities of owners. Therefore, administrative, technical and economic support and facilities will have to be provided so that multi-dwelling buildings in the city can install renewable energies that supply energy to their community expenses (elevator, lighting, garage, etc.) and shared in their homes.

BARRIERS	OPPORTUNITIES
Planning and an impact study on the city is necessary Ownership community agreement required	Significant savings in emissions Taking advantage of tax credits and subsidies Taking advantage of the second life of batteries

ACTORS

Promoters: citizens, energy service companies (ESE), marketers, City Council, VCE
Executors: ESEs, engineering companies, installers, energy communities Support: CAFVC, I-DE, FAAVV, IVACE, GVA, The Ships, AVAESEN, ASELEC
Users: citizens, owners

RENEWABLE INSTALLATIONS IN PUBLIC FACILITIES, PUBLIC SPACE AND URBAN FURNITURE

DESCRIPTION

Public spaces and roofs play a triple role in the implementation of renewable energies. Firstly, the production and self-consumption of renewable energy allows the public administration to reduce its own energy costs and emissions. Secondly, these actions have an exemplary role for the rest of society. Thirdly, some of these installations in public spaces can serve as catalyst nodes for neighbourhood energy communities.

BARRIEARS	OPPORTUNITIES
Lack of investment capacity of the administration	Increasingly favourable economic profitability due to the price of energy
Lack of capacities and human resources to carry out an agile and ambitious deployment	Very consolidated technology and models

ACTORS

Promoters: City Council, GVA
Executors: ESEs, engineers, installers
Support: I-DE, IVACE, VCE, The Ships, AVAESEN, ASELEC
Users: City Council, GVA

REUSE OF LITHIUM BATTERIES FROM ELECTRIC VEHICLES

DESCRIPTION

Electric vehicle batteries that no longer have sufficient charge capacity to offer sufficient autonomy to the electric vehicle can have a second life as static batteries in the city's decentralised renewable installations, since these installations they don't have such extreme space limitations.

BARRIEARS	OPPORTUNITIES
Complicated logistics and maintenance	Circular economy, waste reduction
Dependence on the technological giants	New business models and local job creation

ACTORS

Promoters: UPV, ITE, AVAESEN, ASELEC
Executors: electric vehicle manufacturers, engineers, installers
Support: GVA, IVACE, City Council, COIICV, AND DE
Users: large tertiary institutions, City Council, citizens

URBAN WIND ENERGY INSTALLATIONS

DESCRIPTION

Although solar energy is the majority in a city like València, wind energy technologies have been adapting to urban areas, offering certain solutions that can be applied in certain areas of the city. These technologies, although they will play a much smaller role in the city's energy production mix, can act as demonstrators.

BARRIEARS	OPPORTUNITIES
Technology not mature for the urban area Need to do technical analyses of feasibility and potential locations	

ACTORS

Promoters: City Council, AVAESEN, ASELEC
Executors: engineers, installers, ESEs
Support: GVA, IVACE, COIICV, I DE, ITE, UPV
Users: City Council, citizens

GEOTHERMAL INSTALLATION IN BUILDINGS

DESCRIPTION

Based on the experience of existing geothermal installations in municipal sports centres, València seeks to analyse the potential of these installations in other locations and buildings and carry out the corresponding works and projects.

BARRIEARS	OPPORTUNITIES
High investments are required Lack of experience in the residential sector	Existing pilot projects (sports centres, hospitals)

ACTORS

Promoters: City Council, Municipal Sports Foundation, GVA
Executors: engineers, installers
Support: IVACE, ITE, UPV
Users: City Council, FEM, GVA, citizens

ENERGY SAVING AND RENEWABLE ENERGIES IN THE PORT OF VALÈNCIA

DESCRIPTION

The Port of València represents an important part of the city in terms of space occupation, energy consumption, mobility needs and greenhouse gas emissions. Therefore, a specific plan for the decarbonisation of the Port's energy consumption is proposed, based on the electrification of consumption, the increase in energy efficiency and the ambitious installation of different renewable energies, such as solar, wind and the waves

BARRIEARS	OPPORTUNITIES
Existence of consumption and emissions of scope 3 caused by port activity, more difficult to reduce and decarbonise	Great potential for renewable energy due to the large surface area available

ACTORS

Promoters: València Port
Executors: engineers, installers, ESEs
Support: ITE, Climate-KIC, Universities, València City Council
Users: València Port

IMPROVE SUSTAINABILITY AND THE PROMOTION OF RENEWABLE ENERGY IN INDUSTRY

DESCRIPTION

València is not a city with a large number of industries in its municipal area. However, there are certain industries and estates that need to be addressed in order to progress in their decarbonisation. In this way, it is proposed to promote electrification, energy efficiency, the electrification of fleets and the implementation of renewables as the main measures. In addition, the different production processes will have to be analysed, specifically, in order to study possible ways of transformation towards more sustainable companies, also considering the emissions of scope 3.

BARRIEARS	OPPORTUNITIES
Some activities are complicated to decarbonise Lack of capacity and information in the sector	The measures produce clear economic returns for companies Availability of large surfaces Direct ownership of the buildings

ACTORS

Promoters: GVA-Industry, City Council
Executors: companies, energy communities, engineering, installers
Support: COIICV, Associations of Industrial Estates, AVAESEN, ASELEC, I-DE
Users: Companies and industries

ACCELERATION AND MENTORING OF COMPANIES

DESCRIPTION

Taking advantage of the rapid growth of the energy sector, due to the transformations resulting from the change in the model and system of energy production, management and consumption, this action seeks to deepen the mentoring, support and acceleration of companies and start-ups that achieve attract more investment to the city and generate green and quality employment, with social and environmental impact.

BARRIEARS	OPPORTUNITIES
Initial economic and human resources investment required	Great business opportunities in the energy sector

ACTORS

Promoters: The Ships, City Council, València Activa
Executors: The Ships
Support: VCE, UPV, UV
Users: companies, start-ups

OPEN, SHARED AND PRIVATISED DATA PLATFORMS AND TOOLS

DESCRIPTION

The deployment of collective renewable energies, the management of energy demand in the residential and tertiary sectors or the use of electric and shared transport modes are examples of actions that require intelligent and open data management to achieve optimise its efficiency. This action seeks to use and evolve the existing data platform VLCi to ensure that a large amount of data is collected, managed, analysed, published and used intelligently by the administration and the 5 helixes of the city.

BARRIEARS	OPPORTUNITIES
Data protection issues Possible owners of data not willing to give them openly	Existing working group of Public Data Infrastructure Collect useful and open data to be used by ecosystem actors (5 propellers)

ACTORS

Promoters: Smart City VLC, VLCi, Mesura
Executors: software development and data processing companies Support: I-DE, companies, start-ups
Users: companies, start-ups, citizenship, activism, journalists

PUBLIC BUILDINGS WITH ALMOST ZERO CONSUMPTION

DESCRIPTION

Although it is considered partially included in several of the lines of action defined in this Strategy, this action puts the focus on the renovation of public buildings in an integral way, to achieve that they are buildings with almost zero consumption. This will allow the administration to reduce its energy consumption, its emissions and its energy bills, while at the same time setting an example for the rest of society. The actions must include, among others, training in good usage habits, improving the insulation of the environment, changing windows and shutters, improving air conditioning, ventilation and lighting equipment and renewable energy installation for self-consumption.

BARRIERS	OPPORTUNITIES
Public resources (investment and personnel to manage it) limited	Municipal energy saving group Technical Building Code Rising price of energy bills

ACTORS

Promoters: City Council, Municipal Sports Foundation, GVA-Ministry of Education
Executors: ESEs, engineers, installers
Support: IVACE, València Clima i Energia
Users: public administrations, workers and users of the buildings

DEPLOYMENT OF A NETWORK OF FAST CHARGING POINTS FOR ELECTRIC VEHICLES

DESCRIPTION

Although the majority of electric vehicle charging must take place in private car parks and low-power points, a network of fast charging points is necessary to offer safety to users. These points will be mainly focused on providing emergency service to people who need to charge urgently and to professionals (taxi drivers, delivery companies, etc.) who need to charge during their working day.

BARRIERS	OPPORTUNITIES
Still little demand (few EVs) It must be consistent with the city's mobility strategy: public transport and non-motorised modes	Clear trend of electrification of vehicles With increased demand, there will be a clear business model for private companies offering fast top-up services

ACTORS

Promoters: City Council, I-DE, vehicle manufacturers
Executors: energy companies, installers, engineering companies
Support: Smart City VLC, IVACE
Users: citizens, professional groups (DUM, taxi drivers)

DEPLOYMENT OF LOW-POWER CHARGING POINTS IN PRIVATE CAR PARKS

DESCRIPTION

Progressive implementation of low-power electric vehicle chargers, with the main focus on private car parks. Most of the recharging of electric vehicles must take place at low-power points in private car parks, where energy is cheaper, can be recharged during the hours when the vehicle is not in use and is not being used excessive use of public space for private vehicles. For this reason, this action seeks to promote and facilitate, through regulations, incentives and private action, the deployment of charging points linked to electric vehicles of individuals, private companies and other entities.

BARRIERS	OPPORTUNITIES
Still little demand (few EVs)	Clear trend of electrification of vehicles
It must be consistent with the city's mobility strategy	Many car brands include the cost of installing the linked charging point

ACTORS

Promoters: citizens, City Council, I-DE, vehicle manufacturers
Executors: energy companies, installers, engineering companies
Support: IVACE, Smart City VLC, ASELEC, AVAESEN, COIICV, CAFVC, FAAVV, VCE
Users: citizens, professional groups (DUM, taxi drivers)

ELECTRIFICATION OF PUBLIC TRANSPORT (E-BUSES)

DESCRIPTION

It includes actions to renew and adapt the collective urban transport fleet in the city of València towards less polluting and more energy efficient vehicles, as well as the construction of the necessary infrastructure (car park, photovoltaic plant, substation) for the start of the electrification of the EMT València fleet. Likewise, the project will include the purchase and installation of 150 electric charging stations distributed between the headquarters and the various POS units distributed throughout the city of València

BARRIERS	OPPORTUNITIES
High initial investment by the administration	Financial savings with bus operations (lower fuel prices)
Need to adapt carports and/or routes	Aid from European funds for electrification

ACTORS

Promoters: EMT, City Council
Executors: energy companies, installers, engineering companies
Support: I-DE, e-bus manufacturers
Users: citizens

CHARGING POINTS IN MUNICIPAL CAR PARKS

DESCRIPTION

This action seeks to facilitate and encourage the use of electric vehicles in the city, offering a safe and economical recharging solution with low power points (linked recharging) located in public car parks, so that users who do not have a car park own and therefore cannot install their own linked charging point, they can use those in public car parks with continuity and a cheaper price than fast charging points located mainly on public roads.

BARRIERS	OPPORTUNITIES
Still little demand (few EVs) Need to define management and payment model	Municipal property of the space It does not imply giving more space on public roads to private vehicles

ACTORS

Promoters: City Council, EMT
Executors: energy companies, installers, engineering companies
Support: I-DE, vehicle manufacturers, IVACE, Smart City VLC, ASELEC, AVAESEN, COIICV
Users: citizens, municipal workers, professionals

CHARGING POINTS AND SAFE PARKING FOR LIGHT VEHICLES

DESCRIPTION

In order to facilitate mobility with bicycles and electric scooters, it is intended to deploy a network of low-power points that offer economic recharging, together with the possibility of safe parking for these vehicles.

BARRIERS	OPPORTUNITIES
Little availability of public space	It encourages the use of light EVs in medium distances Scalability across the city

ACTORS

Promoters: City Council, I-DE, shared mobility companies
Executors: energy companies, installers, engineering companies
Support: IVACE, Smart City VLC, ASELEC, AVAESEN, COIICV
Users: citizens

VEHICLE-TO-GRID (V2G) TECHNOLOGY

DESCRIPTION

V2G or V2X technology allows energy to be transferred between electric vehicles and the power grid or a point of consumption bidirectionally. In other words, electric vehicles do not only act as consumers of electricity, but the storage capacity of their batteries can be used, for example, to provide stability to the network, supply energy to a house during the night or act as emergency batteries in a hospital. The consolidation and use of this technology allows, therefore, to exploit the existing synergies between the production of decentralised renewable energy and the batteries of electric vehicles.

BARRIERS	OPPORTUNITIES
Innovative and immature technology Smart network and data management required	New business models for users, tertiary prosumers and electricity network managers

ACTORS

Promoters: UPV, I-DE, ITE, AVAESEN, ASELEC
Executors: energy companies, installers, engineering companies, vehicle manufacturers, charging point manufacturers
Support: IVACE, private companies, City Council, COIICV, GVA
Users: citizens, professionals, I-DE

ELECTRIC MOBILITY ON DEMAND

DESCRIPTION

Not only is electric mobility sought, but shared and efficient. For this reason, transport on demand makes it possible to offer public and shared transport to users, trying to adapt as much as possible to their needs for routes and timetables. The initial focus on electric transport on demand can be points of high competition that are not well connected with traditional public transport, such as industrial estates.

BARRIERS	OPPORTUNITIES
Complicated logistics and profitability High initial investment for VEs and PdRs	High potential for medium and long journeys High replicability in many cases Financing lines available

ACTORS

Promoters: private companies, estates, large tertiary institutions
Executors: transport companies
Support: technology centres, City Council, GVA
Users: workers, citizens

NEW ROLES OF PUBLIC ADMINISTRATION

DESCRIPTION

Developing new models, entities and public services that allow the public administration to act more ambitiously and quickly. Therefore, it will be necessary to analyse the creation of new public entities, such as a public or mixed energy company, which make it possible to offer public services aligned with this strategy, such as the promotion of energy communities on public roofs, the rehabilitation of buildings owned by the administration, the support of people at risk of energy vulnerability, etc.

BARRIERS	OPPORTUNITIES
Legal and regulatory analysis is required The creation of new public entities is administratively slow	It facilitates the fight against energy poverty from the public administration Synergies with the implementation of renewable energies and energy communities

ACTORS

Promoters: City Council, GVA
Executors: legal advice
Support: NGOs, FAAVV, ICAFVC
Users: vulnerable people and groups

COMPREHENSIVE ADVICE TO VULNERABLE FAMILIES AND IMPACT ANALYSIS

DESCRIPTION

The European WELLBASED project seeks to offer comprehensive and ambitious advice and support from the Energy Office, in collaboration with Social Services and other social entities in the city. In addition, it is necessary to measure the impacts achieved, at the level of improvement of the quality of life, energy savings, financial savings and improvement of the physical and psychological health of the beneficiaries.

BARRIERS	OPPORTUNITIES
Low direct economic return for promoters Need to coordinate several actors	Necessary to counteract the energy crisis and the current price escalation The benefits achieved (health improvement, financial savings) can mean indirect economic benefits for the promoters

ACTORS

Promoters: City Council (ECiTE and Social Services), València Clima i Energia
Executors: Energy Office, service companies with experience in energy law and citizen advice
Support: social NGOs, The Ships, Smart City VLC, marketers, I-DE
Users: families in energy vulnerability

CITIZEN EMPOWERMENT ON ENERGY RIGHTS AND NEW MODELS OF COLLECTIVE SELF-CONSUMPTION

DESCRIPTION

With the support of the European project POWERUP, it seeks to offer information and advice so that people in energy vulnerability know their energy rights, in addition to the new existing ways of self-consuming renewable energy collectively, so that they can benefit from energy savings and the energy sovereignty offered by these models.

BARRIERS	OPPORTUNITIES
Difficulty reaching these groups with messages that may be technical These groups lack time to organise collectively	Energy communities offer new ways to collectively produce renewable energy

ACTORS

Promoters: València City Council, València Clima i Energia, The Ships
Executors: Energy Office, communication and social revitalisation entities
Support: organized civil society
Users: citizens

CITIES, DISTRICTS AND SMART NETWORKS

DESCRIPTION

The decarbonisation of the city also implies the updating of the electricity network to facilitate the changes that need to occur in the energy system: a large amount of decentralised renewable energy, collective facilities shared by several prosumers, massive deployment of points of electric recharging, demand management and flexibility services, battery management and charging and discharging of electric vehicles, etc.

BARRIERS	OPPORTUNITIES
High cost of technology and its maintenance Citizens must be involved, technological skills are necessary Highly regulated system	Collect useful and open data to be used by ecosystem actors (5 propellers) Possibility of taking advantage of clear synergies between the different transformations

ACTORS

Promoters: City Council (Smart City VLC, VLCi), I-DE
Executors: ICT companies
Support: ITE, FAAVV, IVACE,
Users: public administrations, start-ups, companies, civil society, media, universities, research centres

SOLUTIONS BASED ON NATURE

DESCRIPTION

Although it is not included in detail in the transformation project, because the green infrastructure is part of another program of the València 2030+Urban Strategy, it is considered relevant to highlight the importance of implementing solutions based on nature and 'increase in the district's green infrastructure, to accompany the previously described actions focused on reducing energy and fossil fuel consumption in buildings and means of transport.

BARRIERS	OPPORTUNITIES
Problems with maintenance and conservation Administrative hurdles	They soften temperatures and adapt the city to climate change

ACTORS

Promoters: City Council, GVA, The Ships
Executors: construction companies, experts in biodiversity, maintenance and gardening
Support: IVE, IIE-UPV, VCE, ICAFVC, FAAVV
Users: owners of service or residential buildings, people who use the buildings

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STRATEGY BUDGE

This chapter offers summary tables that combine the budgets shown in the different lines of action defined above, in order to more easily visualise what the total expected expenses are per year of implementation or per responsible entity.

4.1: Energy communities	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Potential analysis	1.865.080 €	1.657.320 €	478.770 €	257.010 €	-	467.020 €
LA2: Preparation of spaces and human teams	1.708.080 €	1.460.820 €	403.520 €	201.760 €	-	441.020 €
EA3: Definition of the projects	1.990.000 €	1.260.000 €	-	-	160.000 €	490.000 €
LA4: Processing and execution	2.836.000 €	5.834.000 €	-	-	-	10.500.000 €
LA5: Management and growing	196.300 €	137.300 €	26.000 €	-	-	1.895.600 €
TOTAL BUDGET	8.595.460 €	10.349.440 €	908.290 €	458.770 €	160.000 €	13.793.640 €

Table 62 – Summary of the Neighbourhood Energy Communities Budget

4.2: Energy Offices	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Validation of the model	16.500 €	11.500 €	-	-	-	-
LA2: Preparation of spaces and human teams	584.800 €	824.000 €	164.800 €	-	-	82.400 €
LA3: Preparation of the materials, protocols and tools	80.825 €	5.050 €	5.050 €	7.575 €	-	-
LA4: Commissioning of the service	4.921.000 €	5.503.750 €	841.750 €	841.750 €	323.750 €	518.000 €
LA5: Evaluation and monitoring	93.000 €	-	7.000 €	3.000 €	-	-
TOTAL BUDGET	5.696.125 €	6.344.300 €	1.018.600 €	852.325 €	323.750 €	600.400 €

Table 63 – Summary of the Energy Offices Budget

4.3: Program 50/50	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Identification and implication of participatory entities	225.000 €	180.000 €	40.000 €	-	-	-
LA2: Collaboration, networks and teams	40.000 €	-	2.000 €	-	-	-
LA3: Development of methodologies and materials	39.100 €	7.700 €	5.375 €	2.325 €	-	-
LA4: Implementation of the program	4.283.461 €	31.462.949 €	3.253.043 €	-	586.920 €	195.640 €
LA5: Monitoring and growing	135.408 €	114.254 €	44.860 €	3.914 €	-	-
TOTAL BUDGET	4.722.970 €	31.764.903 €	3.345.277 €	6.239 €	586.920 €	195.640 €

Table 64 – Summary of the Program 50/50 Budget

4.4: Carbon Neutral District	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Selection of the district or districts in which to act	229.000 €	56.000 €	-	-	-	-
LA2: Communication and social dynamism	2.393.500 €	1.126.750 €	263.250 €	200.750 €	62.500 €	138.250 €
LA3: Transformation of the district	22.629.903 €	92.109.075 €	18.853.671 €	-	-	350.316.310 €
LA4: Fair transition	6.866.289 €	5.031.231 €	1.246.058 €	-	112.000 €	-
LA5: public-private-social collaboration	256.000 €	146.500 €	315.000 €	52.000 €	-	-
LA6: Intelligent evaluation and management	741.129 €	2.194.116 €	370.086 €	182.843 €	-	365.686 €
TOTAL BUDGET	7.722.758 €	16.058.831 €	25.454.503 €	43.179.947 €	66.686.364 €	88.250.695 €

Table 65 – Summary of the Carbon Neutral District Budget

4.5: Energy Culture	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Analysis and preparation	30.000 €	-	16.000 €	-	-	-
LA2: Definition and implementation of the communication plan	404.000 €	108.000 €	252.000 €	-	108.000 €	-
LA3: Revitalisation of the Alliance for the Climate Mission	33.800 €	19.200 €	84.000 €	-	12.000 €	-
LA4: Organisation of conferences, events and workshops	552.000 €	178.000 €	280.000 €	-	80.000 €	-
LA5: Evaluation and growing	28.250 €	-	22.650 €	-	4.100 €	-
TOTAL BUDGET	1.048.050 €	305..200 €	654.650 €	-	204.100 €	-

Table 66 – Summary of the Energy Culture Campaign Budget

12.3: Renovation Wave	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars
LA1: Evaluation of the park of buildings	326.029 €	1.160.116 €	40.000 €	286.029 €	-	3.668.407 €
LA2: Communication and social dynamism	4.680.800 €	2.661.560 €	473.080 €	413.080 €	60.000 €	353.080 €
LA3: Administrative management	1.951.000 €	4.294.000 €	-	-	-	-
LA4: Rehabilitation	39.852.419 €	120.033.316 €	-	524.058 €	-	636.206.594 €
LA5: Evaluation and optimisation	1.276.731 €	4.716.523 €	790.487 €	393.044 €	-	786.087 €
TOTAL BUDGET	48.086.979 €	132.865.516€	1.303.567 €	1.616.211 €	60.000 €	641.014.168€

Table 67 – Summary of the Building Renovation Wave Building

Line of Action	Public (local)	Public (other levels)	Companies	Academy	Other entities	Particulars	Total
4.1: Energy communities	8.595.460€	10.349.440€	908.290€	458.770€	160.000€	13.793.640€	34.265.600€
4.2: Energy Offices	5.696.125 €	6.344.300 €	1.018.600 €	852.325 €	323.750 €	600.400 €	14.835.500€
4.3: Program 50/50	4.722.970 €	31.764. 903€	3.345.277 €	6.239 €	586.920 €	195.640 €	40.621. 950 €
4.4: Carbon Neutral District	33.115.821€	100.663. 672€	21.048. 065 €	436.093 €	174.500€	350.820. 246€	506.258. 396 €
4.5: Energy Culture	1.048.050 €	305.200 €	654.650 €	-	204.100 €	-	2.212.000€
12.3: Renovation Wave	48.086. 979 €	132.865. 516€	1.303.567€	1.616.211€	60.000€	641.014.168€	824.946. 442€
TOTAL	101.265. 405€	282.293. 032€	28.278.449€	3.369.638€	1.509.270€	1.006.424. 094€	1.423.139. 888€

Table 68 – Total Budget of the 6 lines of action, differentiated by responsible sector

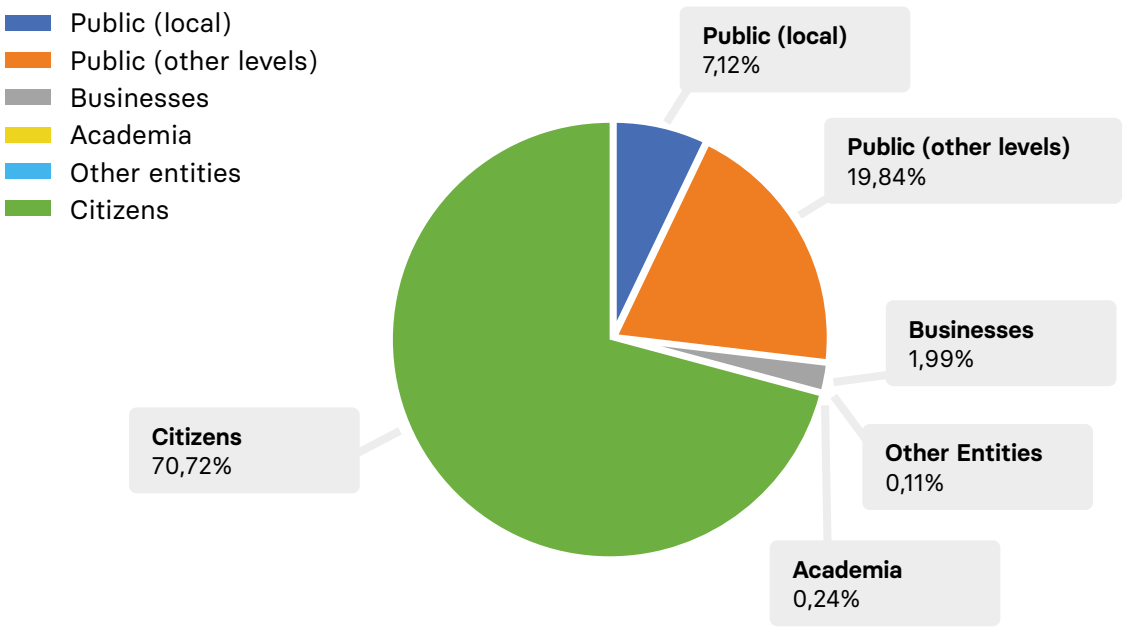

Figure 12 –Distribution by sector of the total budget

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	TOTAL
4.1: Energy Communities	2.485. 600€	2.489. 000€	3.736. 000€	4.546. 200€	5.384. 200€	5.480. 200€	5.452. 600€	4.691. 800€	34.265. 600€
4.2: Energy Offices	1.305. 000€	1.926. 500€	1.935. 000€	1.925. 000€	1.947. 000€	1.925. 000€	1.935. 000€	1.937. 000€	14.835. 500€
4.3: Program 50/50	138.888€	3.839. 846€	4.093. 973€	4.290. 317€	8.358. 760€	8.342. 353€	7.880. 425€	3.677. 390€	40.621. 950€
4.4: Carbon Neutral District	7.722. 758€	16.058. 831€	25.454. 503€	43.179. 947€	66.686. 364€	88.250. 695€	110.870. 215€	148.035. 084€	506.258. 396€
4.5: Energy Culture	281.000€	273.000€	273.000€	273.000€	278.000€	273.000€	273.000€	288.000€	2.212.000€
12.3: Renovation Wave	4.310. 176 €	14.834. 503€	33.750. 559 €	65.502. 317 €	103.604. 427 €	148.071. 889 €	198.859. 703 €	256.012. 868 €	824.946. 442 €
TOTAL	16.243. 422 €	39.421. 680 €	69.243. 034 €	119.716. 781 €	186.258. 751 €	252.343. 136 €	325.270. 942 €	414.642. 142 €	1.423.139. 888 €

Table 69 – Total budget of the 6 lines of actions, differentiated by year of implementation

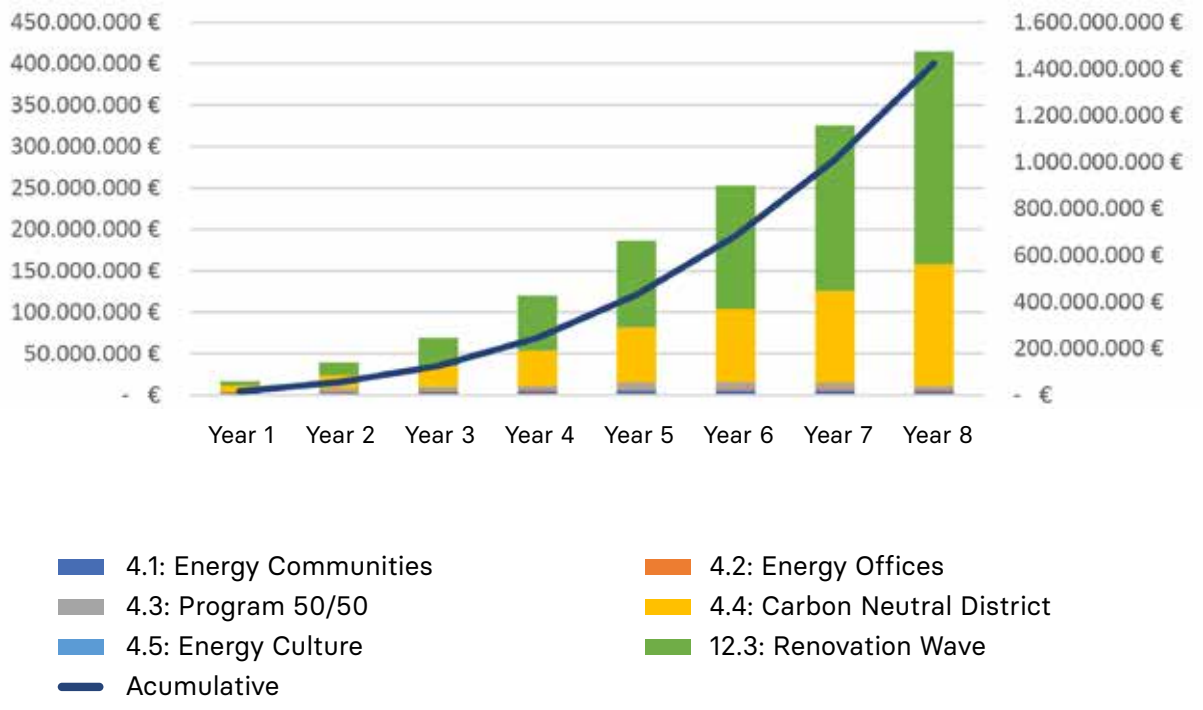

Figure 13 – Annual budget of the 6 lines of action (line 1) and accumulated total budget (line 2)

GOVERNANCE AND MONITORING

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Governance model

The governance of the Fair and Inclusive Energy Transition Strategy will follow the approach defined in the València 2030 Urban Strategy Governance System(link to the document), which defines an organisational structure composed mainly of:

Social Council of the City

It is the highest consultative and participatory body of the city and, therefore, it is also responsible for the development of the Urban Strategy València 2030. It is made up of a wide representation of the most representative institutions, organisations and entities of the city of València. It has representatives from the highest level of administrations and public bodies, civil society organisations and the private sector. Its members are as representatives of an institution, organisation or entity.

Its purpose with regard to the city strategy is, basically, to be an advisory body, for collaboration and a way for civil society to participate in the fulfilment of the city's strategic objectives. Their functions are, in addition, the advice and channelling of participation, the monitoring of its development and implementation, as well as deciding how many actions of the plan are assigned to them and promoting cooperation between the various urban actors. The Social Council of the City promotes and legitimises the development and implementation of the strategy.
In order to carry out its functions, the Social Council of the City will articulate its work with the different Sectoral Councils, District Municipal Boards, Thematic Months or Work Groups that have been established there. You can ask them for reports and analyses in order to monitor the strategy. In any case, when the full session of the City Social Council addresses the monitoring of the strategy, it will have the participation of a representative from each Sectoral Council, Thematic Board and District Municipal Board.

The Social Council of the City will be able to create an Urban Strategy Commission which will be the driving group and promoter of the strategy and will have a mixed composition, with members from different backgrounds. From the moment of its constitution, it will work in direct coordination with the Management Committee and will validate all the work, calendars, agenda and topics to be discussed at the Social Council of the City in relation to the city strategy.

Council of Referents

By appointment of the mayor's office, the Council of Referents can be constituted made up of individuals who, due to their personal prestige and credibility, will provide a vision from outside the institutional and organisational frameworks. These are people of special relevance in the city and who have special social recognition for their professional or personal trajectories. We will look for a composition that is as plural as possible and with gender equity, incorporating

people from fields such as culture, art, science, business, academy, sports or civic engagement... among others. Its role will be to provide ideas and content for the city model and serve as a public reference for the debate on the València we want.

Urban Strategy Coordination Committee

The Strategy Coordination Committee will be made up of the people appointed by the mayor's office in relation to urban strategies, urban agenda or strategic initiatives. It will also have the support of the coordinators of the different areas of government. It is in charge of the general coordination of actions to comply with the Urban Agenda with the administrative support of a management office.

It is the technical coordination body that proposes the composition of the working groups, marks the times and makes the operational decisions, calendar, agenda, orders the completion of the work, proposes the issues to be discussed. Its main mission is the management and coordination of the plan, given that operational management resides in this committee during the preparation of the plan.

Energy Transition Board

The Fair and Inclusive Energy Transition is one of the strategic challenges with a marked transversal character that articulate the Urban Strategy València 2030. In the same way, the Energy Transition Board, operational since September 2020, represents the thematic working group to deal with this challenge.

The MTE is the space for debate and dialogue where citizen participation and city entities are channelled, so it must be articulated in such a way that it can respond to the concerns, suggestions, demands and expectations of the general public. Its composition is mixed and attends to the approaches of the quintuple helix, so it will incorporate actors from the following areas: public administration, private sector, civil society, academy, research and media. In the MTE, city matters are debated from cross-sectoral areas and perspectives with a vocation to address issues from the overcoming of watertight compartments and the incorporation of transversality. Their work must include the gender perspective as a transversal issue, as well as other views such as that of older people or that of childhood and adolescence.

The MTE is, in this way, the centre of reflection and provides the premises for strategic decisions in relation to the city's energy transition. It is the key space for dialogue and deliberation between the different actors involved. Its objective is to analyse critical issues, clarify discrepancies, set and develop strategies and, if established, follow up on the implementation

of the proposed actions. One of its fundamental tasks is to drive and promote demonstration projects linked to the energy transition.

The MTE, like the other working groups of the Urban Strategy, is an instrument to accompany the development and monitoring of the strategy together with the advisory councils. It is articulated around the Fair and Inclusive Energy Transition Strategy as a global and transversal issue and, therefore, does not reproduce the departmental structure of the different areas of government, but incorporates in its formulation an interdisciplinary perspective and intersectoral The MTE is linked to the definition and monitoring of the València 2030 Climate Mission, in accordance with the concept developed by the economist Mariana Mazzucato. This entails an inspiring formulation with broad relevance for the citizens of València, a clear direction aimed at achieving measurable and time-bound results, an ambitious but realistic approach and the creation of a framework for the intersection of disciplines, sectors and actors. The conditions are thus created for the diversity of the city's actors to guide their particular way of acting and innovating in order to contribute, from their specificity, to a common response to the city's great challenges.

The members of the MTE participate as representatives of a specific institution or organisation, so their role is to contribute the ideas, points of view, information, proposals, knowledge and interests of the organisation they represent and transfer the agreed actions and commitments to the bosom of the represented organisation. In this way, the MTE becomes a suitable platform to address problems that transcend departmental or organisational boundaries. Experts of recognised prestige in their field can also participate in the MTE. It is a space for reflection and analysis, but also a platform for negotiation and conflict resolution. It is not confined to short-term actions, but articulates visions and formulates long-term strategies. As part of the work process, the MTE and the other working groups of the Urban Strategy will define, develop and promote the launch of demonstration projects in order to validate the new approaches that are proposed.

The implementation and monitoring of the strategy is thus a consequence of the process of discussion, action, learning, exchange and negotiation between the different key actors. This includes the evaluation and prioritisation of the main options, the evaluation of the available resources and the possibilities of implementation and the obtaining of an agreement that facilitates the achievement of supports and the mobilization of resources.

Demonstrative Project Commissions

Beyond the governance bodies of the València 2030 Urban Strategy and the Fair and Inclusive Energy Transition Strategy defined above, the different lines of action described in the roadmap of this strategy include entities from the 5 helices involved in its definition and implementation. The Demonstration Project Commissions are the operational working groups that encompass all these entities and enable the coordination of the different parties involved throughout the life of the projects.

As specifically defined in each line of action, the Demonstration Project Commissions must be made up of entities from different sectors, from different sectors and with different roles and functions, such as:

• **Promoting entities:** they are the entities that lead and promote the projects. They are responsible for the general supervision of the tasks and offer the strategic vision of the project, which must be agreed upon by all the entities involved (executive, support and beneficiary). Therefore, they carry out general coordination between all the parties involved and ensure that the objectives set by the corresponding line of action are achieved.

• **Executing entities:** they are the entities that implement the most operational actions of the projects, under the direction and supervision of the promoting entities. They are responsible for ensuring the technical and social quality of the tasks, in accordance with the guidelines of the promoting entities.

• **Support entities:** they are entities that contribute to the success of projects and can accompany different tasks or phases of the project, or provide support throughout its implementation. They can be support entities for their expert knowledge in the field, for having key skills in the achievement of projects, for being involved in other projects with which there may be synergies, for their ability to involve beneficiary or executor entities, for its diffusion capacity, etc.

• **Beneficiary entities:** they are the entities or individuals who ultimately benefit from the implemented projects. They are responsible for participating in the definition and implementation of projects from the start, to ensure that their needs and desires are addressed and satisfied.

System of monitoring and evaluation indicators

In accordance with the system of indicators of the València 2030 Urban Strategy (link to the document), for the strategic line EL2: Fair and Inclusive Energy Transition, the following Strategic Objectives and Result Indicators correspond. In addition, each Result Indicator is related to the Sustainable Development Goals (SDGs) and the Spanish Urban Agenda (SUA), and a methodology is provided for their calculation.

SDG	SUA	Result indicators
SO6 Increasing the production of renewable energies		
7.2	4.1	Fee of renewable energies in gross final energy consumption Local production of electricity with renewable energies
SO7 Change the energy culture: increase self-consumption, responsible energy consumption and energy efficiency in buildings		
7.3	4.1	Domestic electricity consumption
7.3	2.6 4.1	Proportion of buildings constructed or renovated after 2008
SO8 Right to energy		
7.1	4.1	Impact of electricity expenditure on average household income

Table 70 – Result Indicators for the Fair and Inclusive Energy Transition

INDICATOR	Fee of renewable energies in gross final energy consumption	
ORIGIN	Spanish Network for Sustainable Development	UNIT %
DATA SOURCE	València City Council	
DESCRIPTION	Energy consumed from renewable sources with respect to the total energy consumed in the municipality	

INDICATOR	Local production of electricity with renewable energies	
ORIGIN	Spanish Network for Sustainable Development	UNIT: kWh
DATA SOURCE	València City Council. First monitoring report PACES 2030 (https://www.València.es/documents/20142/424002/Primer+Informe+Seguimiento+PACES+ABRIL+2021-1.pdf/9df57815-2b04-1a56-3809-63fc2794f937?t=1623400809599)	
DESCRIPTION	Amount of energy generated by renewable sources	

INDICATOR	Domestic electricity consumption	
ORIGIN	Spanish Network for Sustainable Development Joint Research Centre	UNIT: kWh/hab and day
DATA SOURCE	València City Council (https://ods-València.github.io/estadistica/es/7/)	
DESCRIPTION	Quotient between the electricity billed to people for domestic use paid throughout the year and the population on July 1 of the reference year, divided in turn by the number of days in the reference year (365 or 366).	

INDICATOR	Proportion of buildings constructed or renovated after 2008	
ORIGIN	Spanish Network for Sustainable Development Joint Research Centre	UNIT: %
DATA SOURCE	Cadastre	
DESCRIPTION	Calculated from cadastral information on buildings at municipal level. Proportion of buildings built or renovated after 2008 with respect to the total number of buildings in the municipality.	

INDICATOR	Impact of electricity expenditure on average household income	
ORIGIN	Spanish Network for Sustainable Development	UNIT
		%
DATA SOURCE	INE – Encuesta de presupuestos familiares e INE experimental (https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976608)	
DESCRIPTION	Average expenditure per household on electricity by Autonomous Community on the average income per household in each municipality. The family budget survey has microdata files to perform the calculation at municipal level for the València City Council, however, the regional value is already sufficient to perform the calculation of the indicator.	

Table 71 – Calculation Methodology of the Result Indicators

In addition to these generic indicators for monitoring the strategy, it should be emphasised that each of the 6 lines of action defined in the itinerary of this strategy defines a series of indicators and specific objectives to be achieved. In this way, specific monitoring can be carried out by line of action, in addition to the general monitoring of the development and degree of impact of the strategy as a whole.

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