Request for Approval of
a "Smart Energy Project" under the European Energy Efficiency Fund

Smart Energy at Reus: Energy Efficiency and Smart Management

SPAIN

City Council of Reus

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Request for approval

1. Background

1.1 Location

Reus is a city in Catalonia, and the capital of the Baix Camp region, located to the west of Camp de Tarragona and about 10 km from the Mediterranean Sea

Reus is situated within the **province of Tarragona**, in the autonomous community of **Catalonia**, and has several neighboring municipalities that define its boundaries. Here is a more detailed look at its location and surrounding areas:

To the North:

- Reus is bordered by **Riudoms** and **Les Borges del Camp**. These areas are located in the interior of the **Camp de Tarragona comarca** (a local district).

To the East:

- To the east, Reus is close to the coastal areas of the **Tarragonès** comarca, specifically **Tarragona** city, which lies approximately 10 kilometers away. This proximity connects Reus to the Mediterranean Sea, though the city itself is not directly on the coast. The eastern boundary is marked by the **Riu Francolí** (Francolí River), which is a natural feature dividing Reus from neighboring regions.

To the South:

- Reus is bordered by the municipality of **Salou**. This boundary also places Reus closer to the **Costa Daurada** (Golden Coast), an area famous for its beaches, coastal resorts, and Mediterranean climate.

To the West:

- The western boundary of Reus is near **Montbrió del Camp** and **Vinyols i els Arcs**, areas characterized by agricultural land and vineyards. The region is part of the **Priorat** wine-growing area, famous for its red wines, especially those made from **Garnacha** and **Cariñena** grape varieties.

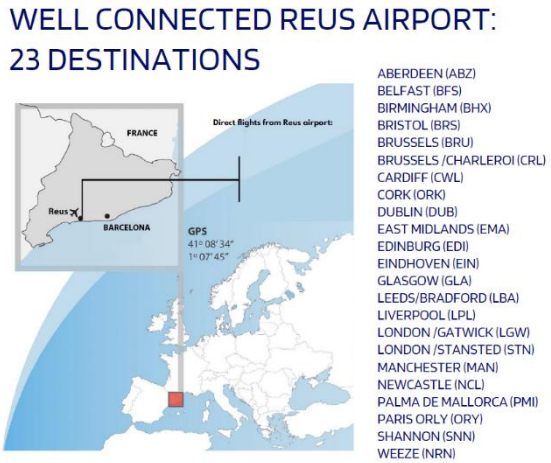
Its population is 108,535 inhabitants (2023), who are concentrated in an area of 52.8 km². The municipality represents nearly a quarter of the population of the metropolitan area of Tarragona-Reus, which includes a total of up to 456,042 inhabitants.

The total surface area of the municipality is 5271 Ha (1810 Ha corresponding to urban land, 1310 Ha corresponding to planned urbanizable land, 890 Ha non-programmed urbanizable land, 1261 Ha non-urbanizable land, according to the general urban planning plan of Reus in force currently).

Reus enjoys a strategic location between the Mediterranean beaches of the Costa Daurada and the mountains of the interior.

An hour south of Barcelona, the city is located on the Mediterranean corridor. Well connected to the rest of Spain and Europe by the AP7 motorway as well as by air and sea:

- The Reus Airport
- The Port of Tarragona
- And a high-performance rail network.



Reus is strategically positioned as a key hub for economic and commercial development in the region. Its privileged location, just 10 kilometers from the Costa Dorada and around 100 kilometers from Barcelona, provides easy access to major commercial and transportation routes, both by road and air, through the nearby Reus Airport, facilitating the movement of goods and people.

Economic potential

Reus holds significant economic importance due to its historical role as a key industrial hub, especially in textiles and leather, which laid the foundation for its economic growth. Its strategic location near major tourist destinations like Salou and PortAventura boosts both commerce and tourism, while its agricultural sector, particularly wine and olive oil production, strengthens its global trade position. Additionally, the city's well-connected transportation infrastructure, including Reus Airport and the Port of Tarragona, supports its status as a vital logistical and business center, driving continuous economic development and diversification.

While maintaining a strong industrial presence, with over 1,500 companies registered in the municipality, the city has developed a solid industry focused on technology, agri-food, and healthcare sectors. The Technological and Agri-Food Innovation Park (Tecnoparc) is a key center for the development of entrepreneurial and research initiatives, consolidating Reus as a regional innovation hub.

Commerce

Commerce is one of the most relevant sectors of Reus' economy. With over 2,000 active businesses, Reus is one of the most dynamic commercial cities in Catalonia. The city boasts more than 215,000 square meters of commercial space, which represents a high density of retail areas, positioning it as a shopping reference in the region.

Economically, the commercial sector in Reus generates approximately 30% of the local GDP and employs around 13,000 people, making up a significant part of the local workforce. This labor force is composed of professionals operating in a wide range of businesses, from small family-owned shops to large commercial outlets and international retail chains. Additionally, Reus is part of the Projecte de Ciutat Comercial, an initiative aimed at boosting local commerce, digitizing small and medium-sized businesses, and promoting sustainability, aligning with the development policies promoted by the European Union.

Tourism

Tourism is also a fundamental driver of Reus' commercial activity. Every year, the city receives more than 800,000 visitors, many of whom are attracted by its modernist heritage and its connection with the renowned architect Antoni Gaudí. This constant flow of tourists has a direct impact on commercial sales, as a considerable part of the consumption in the city's historic center comes from visitors. Furthermore, Reus' strategic location near the Costa Dorada and PortAventura enhances its appeal as a tourist-commercial destination, creating synergies between the two sectors.

The city also hosts several large-scale commercial and cultural events, such as the Fira de Reus, which attracts thousands of people each year, significantly boosting business during key times of the year. Moreover, the city's offering of gastronomic and leisure activities appeals to both residents and tourists, who find in Reus a diverse and accessible experience.

Reus is a stone's throw from the sea and is linked to the main tourist centers of the Costa Daurada. The city is closely connected with Cambrils, Salou, Vila-seca and La Pineda, in addition to enjoying great proximity to the PortAventura World theme park. Its privileged landscape, with a spectacular coastline, and its offer of leisure, culture and gastronomy, make the area very attractive for family tourism (www.mesapropquemai.com)

In addition, due to the geographical situation and good connectivity, they also link it with other tourist proposals of great interest, such as **Ruta del Paisatge dels Genis** (www.elpaisatgedelsgenis.cat) of which Reus is part of Gaudí's city, the visit to the city of **Tarragona** and its Roman and medieval heritage, the **Wine Landscapes** of the nearby appellations of origin to which the city is the gateway to the wine landscapes that are part of the renowned DOQ Priorat, DO Montsant, DO Tarragona, DO Conca de Barberà, DO Terra Alta and DO Catalunya, the territories linked to the Císter Route or the natural wealth of the Terres de l'Ebre, from Terra Alta to the Ebro Delta, among others.

The wide cultural offer of the city ensures that, throughout the year, you can find a show or performance to liven up your stay. The programming of Teatre Fortuny and Teatre Bartrina offers first-class productions, completed by that of the smaller theatres such as the Santa Llúcia or the Orfeó Reusenc.

In summary, Reus is a city with a remarkable capacity to attract commercial and tourism activity, supported by solid figures that reflect its economic dynamism. Its diversified offerings, high density of retail spaces, and focus on innovation and sustainability make it a leading reference in southern Europe. With a robust commercial fabric and continuous growth potential, Reus is well-positioned to remain a key economic engine within the regional development strategies promoted by the European Union.

1.2 Beneficiary (description, type of authority)/ Member of Covenant of Mayors(yes/no)/ National targets under the "20-20-20" initiative

Reus is a City Council in Catalonia, which will be the public beneficiary of the TA project. Reus City is the capital of Baix Camp region, and it is member of the Covenants of Mayors since 2009. The municipality contributes to National targets under the 20-20-20 initiative.

General Structure of the Reus City Council:

- Mayor's Office
  - Mayor: The highest authority of the municipality, responsible for political, administrative, and representational duties. The mayor is elected by the City Council, composed of the councilors, and oversees the overall municipal management.
- City Council Plenary
  - The Plenary is composed of elected councilors, representing various political groups. It is the main political body that legislates on key issues such as the budget, municipal regulations, and city development proposals.
- Local Government Board
  - The Local Government Board is the executive body responsible for making decisions on ongoing municipal matters. It consists of the mayor and councilors in charge of key areas and departments of the municipal government.
- Councilors and Government Areas
  - The councilors are distributed across various areas and departments according to their specialization and the electoral program of the governing team. Each councilor is responsible for a specific area and is in charge of implementing policies and services related to their competencies.

Departments and Areas of the Reus City Council:

- Mayor's Department
  - Functions: Coordinates and oversees the overall political and administrative activities of the City Council. It includes institutional communication and relations with other public and private entities.
- Urban Planning and Works Department
  - Functions: Manages the city's urban development, planning of new projects, maintenance and improvement of urban infrastructure, and housing policies.
- Economy and Finance Department
  - Functions: Responsible for preparing the municipal budget, fiscal management, tax collection, and general economic management of the City Council, ensuring financial sustainability.
- Social Services Department
  - Functions: Provides services to vulnerable groups, managing social assistance, integration programs, and support for families, the elderly, and people with disabilities.
- Education and Culture Department
  - Functions: Promotes and manages educational, cultural, and recreational resources in the city. This includes managing schools, libraries, museums, and cultural and educational activities.

- Environment and Sustainability Department
  - Functions: Develops policies and actions related to environmental protection, waste management, pollution control, energy efficiency, and sustainable initiatives in the city.
- Public Safety Department
  - Functions: Responsible for public safety, including the Local Police and Civil Protection services. Its aim is to ensure the safety of citizens and the prevention of crime and accidents.
- Mobility and Transport Department
  - Functions: Manages public transport systems, traffic, road infrastructure, and promotes sustainable mobility alternatives such as cycling and public transport.
- Public Health Department
  - Functions: Focuses on promoting citizens' health, managing municipal health services, and running disease prevention and health promotion campaigns.
- Youth and Sports Department
  - Functions: Manages policies and services aimed at the youth, including programs for leisure, education, employment, and volunteering, in addition to promoting sports in the city.
- Commerce and Tourism Department
  - Functions: Focuses on promoting local commerce and tourism development, supporting businesses, and organizing events to attract visitors to the city.
- Equality and Diversity Department
  - Functions: Works on promoting gender equality and diversity, managing policies that favor the integration of minority groups and promoting equal opportunities for all citizens.
- Citizen Participation Department
  - Functions: Encourages active citizen participation in municipal management, organizing consultations, forums, and other tools to allow citizens to influence political decisions made by the City Council.

Support Bodies:

- General Secretariat
  - Functions: Provides legal and administrative advice to the City Council, ensuring the legality of the government's actions and decisions.
- Internal Audit Department
  - Functions: Focuses on controlling economic management, ensuring the proper application of the budget, and maintaining transparency in municipal expenditures.
- Communication Department

Functions: Manages the public relations and institutional communication of the City Council with citizens, the media, and other entities.

Spain´s national measures, contemplated in the PNIEC, are aligned with EU´s binding targets of reaching following results by 2030:

40% reduction in greenhouse gas (GHG) emissions compared to 1990.

32% share of renewable energy in total gross final energy consumption.

32.5% improvement in energy efficiency.

15% electricity interconnection between the Member States.

Reus City Council is steadfast in supporting the reaching of these goals, through the implementation of PV facilities for self-consumption and energy communities, the improvement of energy efficiency in public municipal buildings, renewing thermal generation, HVAC and lighting equipment, and the renovation of public street lighting. With these actions, the total energy consumption of the City Council will be reduced, so will be the greenhouse gas emissions, and part of the consumption will be covered with renewable energy.

Reus City also has ambitious energy and environmental goals for the next 10 years, framed within its energy transition plan and the Sustainable Development Goals (SDGs) of the 2030 Agenda.

1. **Promotion of clean energy**: One of Reus' main goals is to promote the use of renewable energy. This includes installing solar panels in schools and municipal buildings and offering incentives, such as a 50% property tax discount (IBI) for citizens who adopt renewable energy. Additionally, 100% of the energy used in municipal buildings and public lighting now comes from renewable sources.
2. **Energy consumption reduction and efficiency**: Reus is implementing measures to reduce energy consumption in both the public and private sectors. The municipal company **Reus Energia** aims to generate and distribute electricity from renewable sources, a major step toward the city's energy self-sufficiency.
3. **Participatory energy transition**: The city is committed to creating a sustainable energy model through a participatory process involving the community, co-designing energy goals for 2030. This approach seeks to build consensus and ensure that energy policies reflect local needs.
4. **Climate action and environmental management**: Reus is also working to combat climate change by improving urban and peri-urban green areas, promoting sustainable mobility, and enhancing waste management through the "5Rs" (Rethink, Reduce, Repair, Reuse, and Recycle).

These efforts are part of a long-term plan that includes public and private policies (cto ensure Reus achieves a successful and sustainable energy transition by 2030 and beyond. Where is this is located, what is the name of the Policy of Reus that refers about this action such as promotion of clean energy, that is what I mean. It is a local plan or strategy, mention the name of the strategy and the timeframe. Thanks. It is a plan for 5 years, 10 or 3 years, etc.

1.3 Motivation to participate in the TA program and objectives to be achieved by participating in the TA program.

Reus City or Reus Municipality (they are considered the same) aims that this project contributes in a big manner towards achieving the various ambitious carbon reduction goals that it has set for itself. Regarding energy efficiency:

- 40 % of energy and emission savings in municipal facilities (buildings, street lighting,etc.)
- 20% of renewable energy generation using PV.

In order to achieve these goals, Reus wants to develop a smart Energy Project, which shall focus on:

1. **Energy efficiency measures:**

   Municipal buildings and street lighting are facilities whose energy efficiency can be improved, reducing their consumption and CO2 emissions. These objectives will be achieved through renovation of these facilities with more efficient technologies.

2. **Renewable energy sources**

   The main objective of these types of facilities, such as PV systems, is to provide energy from a renewable source, reducing the CO2.

The main strategic plan of the Reus City Council regarding energy efficiency and sustainability is the **Sustainable Energy and Climate Action Plan (SECAP) 2022–2030**.

The Plan is available at the following link; please note that it is in Catalan.

https://transparencia.reus.cat/ajuntament-de-reus/fitxers/c-programacio-i-planificacio/plans/vigents/pla-de-lenergia-sostenible-paees/view

This document outlines the strategies and actions that the municipality will implement to achieve a **55% reduction in greenhouse gas emissions by 2030**, in line with the objectives of the **Covenant of Mayors for Climate and Energy**. It also sets the goal of reaching **carbon neutrality by 2050**.

In addition, the plan defines specific targets, such as a **40% reduction in energy consumption and emissions in municipal facilities**. This sectoral objective is part of a **broader strategy** aimed at achieving the overall 55% emissions reduction across the city. This hierarchy of targets reflects a coherent planning approach, where **sector-specific goals contribute to the broader decarbonization objective**.

This plan was approved on October 28, 2022, and is aligned with the commitments of the Covenant of Mayors for Climate and Energy. Its objective is to reduce greenhouse gas emissions by 55% by 2030 and achieve climate neutrality by 2050.

The SECAP includes 33 mitigation actions and 11 lines of action for climate change adaptation, covering areas such as municipal buildings, public lighting, mobility, water and waste management, and the promotion of renewable energy.
It is estimated that these measures will reduce 291,335 tons of CO_2 equivalent by 2030, representing a 55.8% decrease compared to 2005 levels.

In addition, Reus has developed an **Energy Transition Project** in collaboration with the University Research Institute for Sustainability, Climate Change and Energy Transition (IU-RESCAT).
This project provides a roadmap through 2030 and 2040, positioning Reus as a pilot city

for replicable energy transition models in other municipalities of the Camp de Tarragona region.

These project will also be innovative as it will propose shared- consumption PV facilities, which will help reducing the energy dependence from the net using an interconnection among various of the municipal buildings to take advantage of the PVs which will be implemente.

The rest of technologies proposed (LED technology, etc) will also be cutting-edge, placing Reus at the forefront of technological innovation in energy efficiency.

1.4 European Commission support under other EU programs for the same project

No

1.5 Confirmation on compliance with Article 93(1) points (a), (b) and (e) and Article 94 points (a) and (b) of the Financial Regulation. The confirmation can be downloaded at http://ec.europa.eu/competition/calls/2010_judges/annex_5.pdf

(document can be provided by the authority, if required).

2. Investment Project

2.1 Description (objective, technology used, sector involved)

Reus City Council aims to position the city in a leading group of cities with a better quality of life by using their different qualities and strengths to become an attractive city to live, work, do business and visit. By acting in a coordinated way, efficiently and in sustainable manner on the urban landscape and its management. Putting emphasis in improving transportation, energy efficiency of buildings, sustainable building constructions, installations and equipment and boosting the intensive application of information technologies and communication to generate new business opportunities and reactivating the local economy and local employment.

The new City plan of action for sustainable energy will be starting by the transformation of the City by applying energy saving solutions, emissions reduction initiatives and long-term sustainable policies lead by the Municipal Administration and boosting this process of change in all sectors of the city and affects urban and social culture.

For all the above, it is the subject of this document making a first attempt to identify possible real actions to achieve these goals.

The proposed measures must meet the following objectives:

- ✓ Reduction of CO2e emissions
- ✓ Cost reduction
- ✓ Energy savings
- ✓ Optimization of financial, material, and human resources
- ✓ Innovation and excellence in municipal management
- ✓ Reuse of current resources
- ✓ Self-financing: all new measures need to be self-financed via economic savings

All these measures pursue the objectives of **PNIEC 2021-2030** proposed to Europe, which are:

- ✓ **23% less CO_2 than in 1991.**
- ✓ **42% final renewable energy.**
- ✓ **39,5% increase of energy efficiency.**
- ✓ **74% electric energy must be renewable.**

These partial objectives will lead Spain to achieve the long-term objective, which is to become a zero-emission country in 2050.

SCOPE OF PROJECT

Energy efficiency upgrades in 21 public buildings: 13 municipal and 8 public.

It is planned to study energy efficiency measures in 21 public and municipal buildings. The list of these buildings with their name, location and type of activity is detailed as it follows:

Name	Address	Use	Type	Surface (m²)
ANTIC HOSPITAL	Carrer de Sant Joan, 34B	Administrative	Municipal	4.280
ARXIU MUNICIPAL i COMARCAL	Cr Antoni Maria Claret 3	Cultural	Public	7.200
BIBLIOTECA XAVIER AMORÓS	Cr de l'Escorxador 1	Cultural	Public	6.338
GAUDI CENTRE	Plaça del Mercadal, 3	Cultural	Public	2.393
BRIGADA MUNICIPAL	Av. de la Pau	Administrative	Municipal	3.984
ARGILAGA SERVEIS ECONÒMICS	Cr Sant Llorenç 25	Administrative	Municipal	3.183
BIBLIOTECA PERE ANGUERA	Cr. Joan Salvat Papasseit 14	Cultural	Public	3.091
PALAU MUNICIPAL	Pl. Mercadal 1	Administrative	Municipal	3.079
CASERNA GUÀRDIA URBANA	Av. Marià Fortuny 27	Administrative	Municipal	2.803
CENTRE CÍVIC DEL CARME i CASAL DE LA DONA	Pl. Patacada 10	Administrative	Municipal	2.726
CENTRE CÍVIC MAS ABELLÓ	Cr del Mas Carpa 4	Administrative	Municipal	2.600
IMFE MAS CARANDELL AULARIS	Cr Terol	Educational	Public	2.579
CENTRE CÍVIC PONENT	Av. Països Catalans 106	Administrative	Municipal	2.280
CENTRE CÍVIC LLEVANT	Pl. Horts dels Canonges 1	Administrative	Municipal	1.766
CENTRE CÍVIC MIGJORN	Cr. Riera de l'Escorial 22-24	Administrative	Municipal	1.116
IMFE MAS CARANDELL	Cr Terol	Administrative	Public	726
CASA RULL IMAC	Cr. Sant Joan 27	Administrative	Public	655
CENTRE CÍVIC MESTRAL antic	Av. Barcelona 8	Administrative	Municipal	624
CASAL DE JOVES	Cr. Castellvell 4	Administrative	Public	619
CENTRE CÍVIC MESTRAL nou	Av. Barcelona 8	Administrative	Municipal	534
EDIFICI BALUARD	Raval Robuster 43-47	Administrative	Municipal TOTAL	468 53.044

Table 1 – List of buildings

The current energy consumption summary for the 21 buildings under review is:

Energy consumption – Electricity	**2.899.688**	**kWh/year**	**2.899,69**	**MWh/year**
Energy consumption - Fuel/ Natural Gas	**225.616**	**kWh LHV/year**	**225,62**	**MWh LHV/year**

Table 2- Summary of consumption

The buildings under review have uses; including schools, office buildings and buildings of cultural use;

BUILDING TYPES	number of b.
Educational use	1
Administrative use	16
Cultural use	4

TOTAL	21

Table 3- Type of buildings

The actions to reduce the energy consumption are the following:

- Replacing fluorescent lamps by more efficient one in 20 buildings from the 21 audited, because one building (Palau Municipal) already has LED technology. In the rest of buildings, there are lots of fluorescent lamps with high power (36-58 W), which can be replaced with LED technology lamps with lower power (20-28 W) and provides the same light levels, with lower energy consumption. This also eliminates the use of hazardous materials, since fluorescent lamps contain mercury, a material considered toxic.

- It is proposed to renovate the boilers of 5 buildings (from the 21 buildings mentioned above). As a previous estimation, old boilers in 5 buildings are low in maintenance, >20 years old. As its condition is poor, i.e low isolation and poor performance level, it can be improved through replacing them with new high efficiency boilers.
- Replacing of HVAC systems: in 5 buildings: there are HVAC systems which have finished their useful life and have low efficiency, so they will be replaced with new equipment's with higher COP/EER ratios. During the development of viability studies, the results of these measures will lead to an improvement in the energetic certificate of each building, expected in at least one category, as it is demanded in PNIEC 2021-2030.

RENEWABLE ENERGY SOURCES Rewrite this

Photovoltaic Systems

Building-Integrated Photovoltaic Systems (PV) would offer 2.547.000 kWh/year generations, which corresponds approximately to 695 tnCO_2/yr. PV systems will be developed in a total of 7 facilities in public buildings (5 sport centers for share self-consumption , and 2 public buildings , which will be the Cemetery and the Vehicle deposit) connected to buildings, in buildings which have enough space on the roof to install them, or in canopies in the case of Cemetery and Vehicle deposit, based on the information of the City Council. The location of each building is detailed below. Please see the description below of the cemetery and Vehicle deposit for more clarifications.

The scope will be 7 public buildings, which are

- 4 sports centers
- 1 brigade warehouse
- 1 cemetery
- 1 vehicle deposit

The modalities are detailed as it follows:

- 5 Rooftop PV solutions have been considered, with a total surface of modules of 2.000 m2. It is important to notice that these m2 are surface which will be used to install PV modules, but the studied buildings have more surface available, as it is detailed in the following table.

Building	Peak power (kW)	Estimated available surface (m2)	Building use	Adress	Zone location inside municipality
Poliligero Gaudí	100	1.500	Sport	Carrer de Terol, 1	North zone
Poliligero Rosa Sensat	100	1.500	Sport	Carrer Mas Pellicer, 63	East zone
Poliligero Alberich y Casas	100	1.500	Sport	Carrer de Vilafortuny, 26	West zone
Poliligero Joan Rebull	100	1.500	Sport	Av. de L'Onze de Setembre, 10	North zone
Almacén Brigadas	100	1.200	Others	Av. de la Pau, 43203	North zone

Table 4 - PV facilities in 5 buildings

The following images show the 5 buildings on which PV will be studied:

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<tr>
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- Poliligero Gaudí

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- Poliligero Rosa Sensat

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- Poliligero Alberich I Casas

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- Poliligero Joan Rebull

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- Almacén Brigadas

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</table>

From the 5 public buildings where the estimated generated energy is higher than the consumption, it will be developed a "Shared self-consumption facility" or energy communities.

In this mode of self-consumption, there is a PV facility located in one building, which will use the existing electrical distribution network to distribute surplus energy among nearby consumers.

These consumers will sign a distribution contract to detail the amount of energy given to each one.

This type of self-consumption is very innovative, and its main goal is not only to take advantage of higher rooftop surfaces of a building, but helping population at risk of energy poverty through sharing the energy which is not self-consumed in the building where the facility is located, while increasing the amount of renewable energy used and decreasing CO_2 emissions.

Apart from the PV installation in 5 buildings detailed above for self-consumption, it has been assessed the implementation of PV facilities in two other buildings of Reus City, which cover a total volume of 4.400 m2 (i.e., (i) Cementery, which has a surface of 2800 m2 and, and (ii) the Vehicle deposits, which has a volume of 1.600 m2), as it follows:

Zone	Surface (m2)	Peak power (kW)	Generated energy (kWh/yr)	tnCO2/yr
Cementery	2.800	700,00	1.114.400,00	304,23
Vehicle deposit (including 570 kWh in batteries).	1.600	400,00	636.800,00	173,85

Table 5- PV facilities in other areas

Reus Cemetery is a municipal zone which involves 1 building, whose use is administrative(used as the main entrance of the cemetery).There are aprox.5 people working there. The cemetery has a huge available surface to implement a PV system (i.e.g, in the parking zone throught canopies). The public authority aims at installing a PV system in this area, on the ground that will be connected to the PV system installed on the rooftop of one building of the cemetery, which will be studied: in (i) PV canopies (70 canopies with 20 modules each as a first estimation)proposing the solution which fits better in that zone, and (ii) the rooftop of the building. This building is administrative, with just one floor.

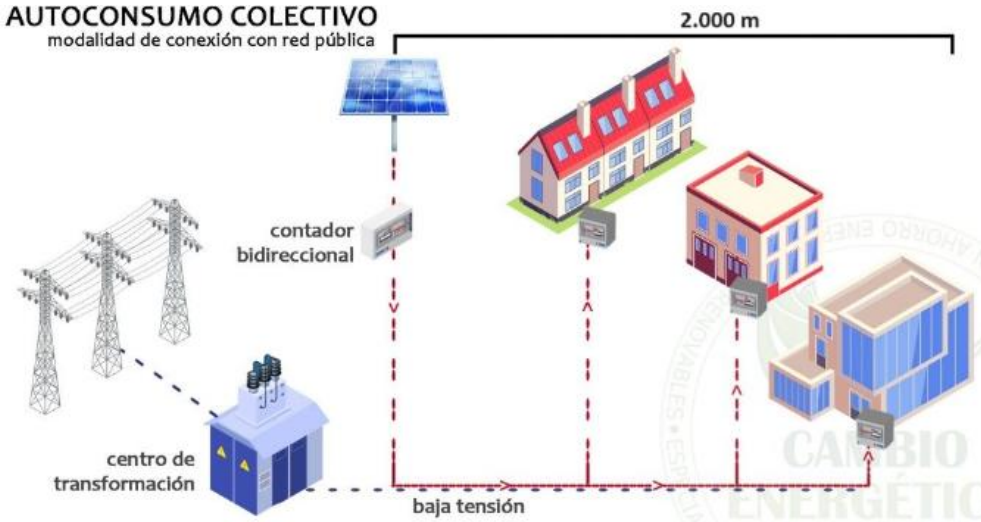
The energy generated within this facility (i.e., cementary) will be distributed to other Reus buildings (shared self-consumption). The facility will be connected to the electric panel center located in the entrance building of the cementary (marked in the previous image) and through this point, it will be send to the transformation center and distributed among the following buildings (as a first estimation) which belong to Reus City Council:

CODI	DESCRIPCIÓ
AME003	Parking Plaça Llibertat
DEP001	Palau Consistorial
APC012	Gaudí Centre
EDI001	Oficines Aigües de Reus
AME016	Parking Centre Comercial La Fira
OAIMM003	Museu d'Art i Historia
DEP002	Ca L'Argilaga (Oficina Recaptacio Municipal)
OAIMAC007	La Palma
CIV027	Centre Cívic Llevant NOU
EDU022	CEIP Els Ganxets
EDU009	CEIP Joan Rebull

In this mode of self-consumption, there is a PV facility located in one building, which will use the existing electrical distribution network to distribute surplus energy among buildings detailed before.

These consumers will sign a distribution contract to detail the amount of energy given to each one.

This type of self-consumption is very innovative, and its main goal is not only take advantage of higher rooftop surfaces of a building, but helping population at risk of energy poverty through sharing the energy which is not self-consumed in the building where the facility is located, while increasing the amount of renewable energy used and decreasing CO_2 emissions.

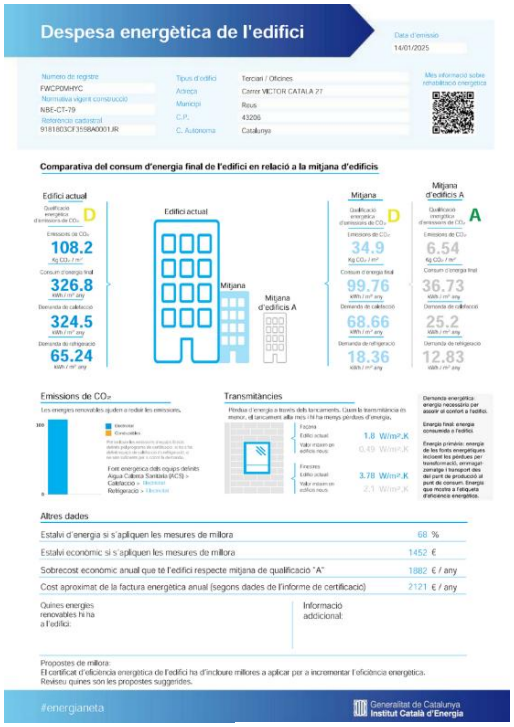


The energy generated by the PV facilities is injected into the low voltage network, and from there it is distributed to the different Reus City council buildings, these being within a radius of 2 km from the power plant. generation

The previous red zone are the limits of 2 km from each PV facility. Buildings which belongs to Reus City Council and are located in that red zones can be added to the shared self consumption facility.

The energy generated will be injected into the electrical grid at a connection point, which must be requested by the company carrying out the installation

The vehicle deposit of Reus (image detailed below) is a municipal area which has a huge parking zone wich can be used to develop PV facilities, through the implementation of PV canopies. Building certificate submitted from Reus in regards to this vehicle deposit has been provided to the Fund. In this facility the PV canopied will be connected to the small cabin/ building located in the entrance of the deposit, and has an area of 50 m2. This cabin is has two main functions: in one hand,controlling the entrance of the deposit, and on the other hand, allocating the control system of the deposit (lighting system of the parking zone, surveillance,etc).



Despesa energètica de l'edifici

Data d'emissió: 14/01/2025

Número de registre: FWCP0MHYC	Tipus d'edifici: Terciari / Oficines	Més informació sobre rehabilitació energètica	
Normativa vigent construcció: NBE-CT-79	Adreça: Carrer VICTOR CATALÀ 27		
Referència cadastral: 9181803CF3598A0001JR	Municipi: Reus		
	C.P.: 43206		
	C. Autònoma: Catalunya		

Comparativa del consum d'energia final de l'edifici en relació a la mitjana d'edificis

	Edifici actual	Mitjana	Mitjana d'edificis A
Qualificació energètica d'emissions de CO_2	D	D	A
Emissions de CO_2 (kg CO_2 / m²)	108.2	34.9	6.54
Consum d'energia final (kWh / m² any)	326.8	99.76	36.73
Demanda de calefacció (kWh / m² any)	324.5	68.66	25.2
Demanda de refrigeració (kWh / m² any)	65.24	18.36	12.83

Emissions de CO_2

Les energies renovables ajuden a reduir les emissions.

Font energètica dels equips definits: Aigua Calenta Sanitària (ACS) → Calefacció → Refrigeració →

Transmitàncies

Pèrdua d'energia a través dels tancaments. Com la transmitància és menor, el tancament alla mes i hi ha menys pèrdues d'energia.

	Edifici actual	Valor mínim en edificis nous
Façana	1.8 W/m².K	0.49 W/m².K
Finestres	3.78 W/m².K	2.1 W/m².K

Demanda energètica: energia necessària per assolir el confort a l'edifici.

Energia final: energia consumida a l'edifici.

Energia primària: energia de les fonts energètiques incloent les pèrdues per transformació, emmagatzematge i transport des del punt de producció al punt de consum. Energia que mostra a l'etiqueta d'eficiència energètica.

Altres dades

Estalvi d'energia si s'apliquen les mesures de millora	68 %
Estalvi econòmic si s'apliquen les mesures de millora	1452 €
Sobrecost econòmic anual que té l'edifici respecte mitjana de qualificació "A"	1882 € / any
Cost aproximat de la factura energètica anual (segons dades de l'informe de certificació)	2121 € / any

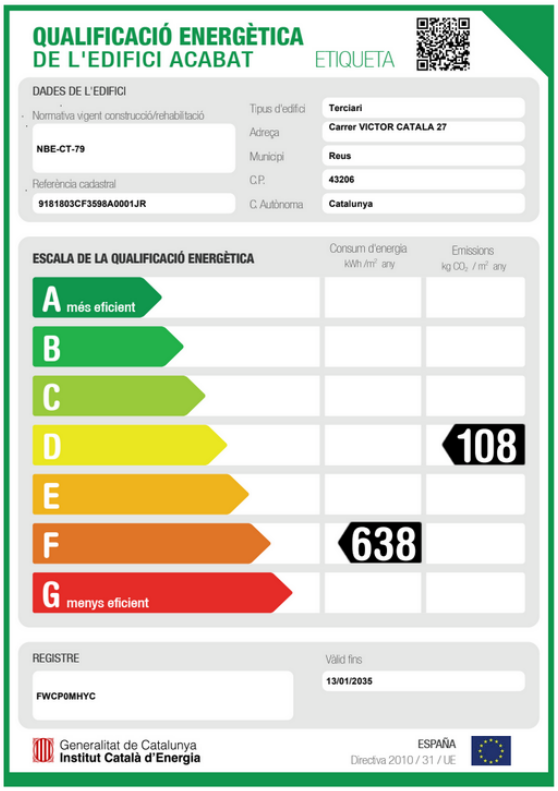
Quines energies renovables hi ha a l'edifici:

Informació addicional:

Propostes de millora:
El certificat d'eficiència energètica de l'edifici ha d'incloure millores a aplicar per a incrementar l'eficiència energètica.
Revisau quines son les propostes suggerides.

#energianeta

Generalitat de Catalunya
Institut Català d'Energia



QUALIFICACIÓ ENERGÈTICA DE L'EDIFICI ACABAT

ETIQUETA

DADES DE L'EDIFICI

Normativa vigent construcció/rehabilitació: NBE-CT-79	Tipus d'edifici: Terciari
	Adreça: Carrer VICTOR CATALA 27
	Municipi: Reus
Referència cadastral: 9181803CF3598A0001JR	C.P.: 43206
	C. Autònoma: Catalunya

ESCALA DE LA QUALIFICACIÓ ENERGÈTICA

	Consum d'energia kWh /m² any	Emissions kg CO_2 / m² any
A més eficient		
B		
C		
D		108
E		
F	638	
G menys eficient		

REGISTRE: FWCP0MHYC	Vàlid fins: 13/01/2035

Generalitat de Catalunya
Institut Català d'Energia

ESPAÑA
Directiva 2010 / 31 / UE

Generalitat de Catalunya
Departament d'Empresa i Ocupació

Imprès de liquidació i document acreditatiu del pagament de la taxa per a la revisió, el control i la inspecció dels certificats d'eficiència energètica d'edificis de Catalunya inscrits al registre de certificats d'eficiència energètica

Taxa segons el Decret legislatiu 3/2008, de 25 de juny, pel qual s'aprova el Text refós de la Llei de taxes i preus públics de la Generalitat de Catalunya, modificat per la Llei 2/2014, del 27 de gener, de mesures fiscals, administratives, financeres i del sector públic. Li és aplicable el Decret 277/1999, de 28 de setembre, pel qual s'aprova el Reglament sobre taxes i preus públics de la Generalitat de Catalunya.

1. Dades del subjecte passiu (promotor/a o propietari/ària)

Nom	Primer cognom	Segon cognom	DNI
DANIEL	RUBIO	ANGOSTO	39911343H

NIF	Raó social
P4312500D	AJUNTAMENT DE REUS

Adreça o domicili social	Codi postal	Municipi
Carrer Sardà i Cailà S/N	43201	Reus

2. Dades del presentador/a

Nom	Primer cognom	Segon cognom	DNI
RAMON	CASTELLVI	ANDREU	39870935K

NIF	Raó social

Adreça o domicili social	Codi postal	Municipi
Carrer SARDÀ I CAILÀ S/N	43201	Reus

3. Dades de la liquidació i de l'objecte tributari

CODI	Número de liquidació CONCEPTE	QUOTA EUROS
14.12	IU15042014-FWCP0MHYC Terciari	15.55
	TOTAL:	15.55

Taxa de l'article 14.12 del Decret legislatiu 3/2008, per a la revisió, el control i la inspecció del registre de certificació energètica d'edificis.

4. Recurs

Es pot interposar el recurs potestatiu de reposició davant el director a general d'Energia, Mines i Seguretat Industrial del Departament d'Empresa i Ocupació dins el termini d'un mes a comptar des de l'endemà de la recepció d'aquesta liquidació, o bé la interposició de reclamació econòmica administrativa davant la Junta de Finances, dins també del termini esmentat anteriorment. Un cop esgotada aquesta via economicoadministrativa, es podrà interposar recurs contenciós administratiu davant l'òrgan jurisdiccional competent.

5. Dades del cobrament

Data de pagament	Emissor	Referència	Identificació
13/01/2025	00811001	0013507457639	130425

It will also be proposed the implementantion of batteries, to increase the PV coverage. Through the use of batteries, the aim is to satisfy the electric demand of the light system of the deposit, which is used during nights to avoid vandalism in the deposited vehicles.

The batteries will be connected to a charging controller, and to the inverter.

Both equipment, the inverter and the batteries, will be located in the cabin, which will be enlarged to 100 m2 in order to have enough space for these equipment. The PV modules will be connected to the inverter located in the cabin enlargement, and the inverter will be connected to the control panel located in the cabin of the main entrance. From this electric panel, the energy is distributed to the lighting facility.

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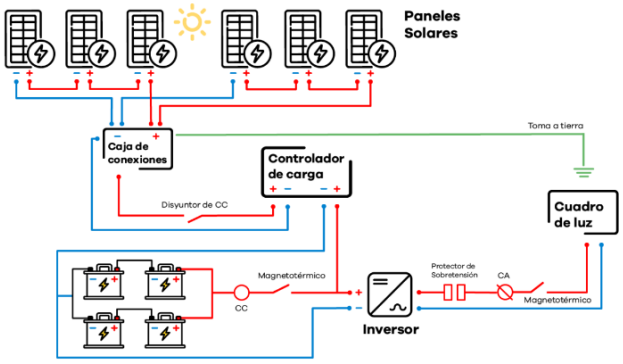


Energy efficiency upgrades in public street lighting

The street lighting facility is formed by 19.706 light points and 247 control panels, presenting a consumption of 7.073.984 kWh/year.

It will be proposed the change of 14.642 light points from the total of 19.706 existing light points. The rest of light points (5.604) will not be changed as they are already LED. However, the energy audit will include them, as it is needed to study the totality of consumption in order to calculate energy savings, and it is needed to include them in the tele-management system The tele-management is expected to control the on/off timings of the facility, with an energy management system included in each control panel.

Also, as a previous estimation, it is proposed the renovation of 113 control panels although an audit must be carried out to make an in-depth study of the facility and the renovation proposals The study and adequation of control panels is mandatory as according to Spanish regulations, all control panels must be in good condition to put the

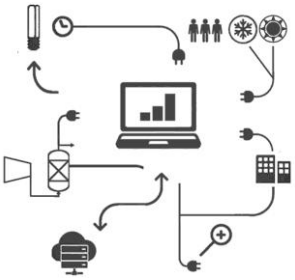
installation into operation. If there are any command centers with deficiencies, they must be corrected before start-up.

It will also be proposed a tele-management system in all the control panels, and regulation nodes in zones which need a more specific regulation, such as fair zones, markets,etc.

The light points which will be changed have HPS (High pressure sodium) and MH (metal-halide) technology, with high powers (from 60 W up to 250 W). These powers can be reduced using LED technology, generating energy savings as it will be detailed after.

These are the proposals to reduce the electric consumption and the costs:

- Reduction in the lamp wattage
- Combined with the use of the most efficient technologies.
- Incorporation of LED technology
- Light level dimming
- Consumption dissociation that penalizes with certain time-schedules.



DIGITALIZATION PROGRAM

This project includes the digital platform for monitoring electric and thermal consumptions in 20 buildings, which cover a surface of 49.060 m2 (from the total of 21 public buildings included in this project), studying both hardware and software solutions.

This digital platform will have different uses. It will be used as part of the monitoring system which will be implemented in the facilities to control their consumption. Through this platform, it is expected to evaluate consumption in:

- Electric and fuel consumption in buildings, including the breakdown of different consumption, such as lighting consumption, electric devices consumption, etc.
- PV generated energy.
- Electric energy consumption in public street lighting, including the verification of savings once the project is finished.

The cost of this measure is 420.000,00 €.

As a previous estimation, the buildings included in the platform would be:

- ANTIC HOSPITAL
- ARXIU MUNICIPAL i COMARCAL
- BIBLIOTECA XAVIER AMORÓS
- GAUDI CENTRE
- ARGILAGA SERVEIS ECONÒMICS
- BIBLIOTECA PERE ANGUERA
- PALAU MUNICIPAL
- CASERNA GUÀRDIA URBANA
- "CENTRE CÍVIC DEL CARME i
- CASAL DE LA DONA"
- CENTRE CÍVIC MAS ABELLÓ

- IMFE MAS CARANDELL AULARIS
- CENTRE CÍVIC PONENT
- CENTRE CÍVIC LLEVANT
- CENTRE CÍVIC MIGJORN
- IMFE MAS CARANDELL
- CASA RULL IMAC
- CENTRE CÍVIC MESTRAL antic
- CASAL DE JOVES
- CENTRE CÍVIC MESTRAL nou
- EDIFICI BALUARD

2.2 Total cost and leverage factor

This is the estimation of investments to be arranged in this project:

Total estimated cost in the renovation of the **public building's renovation**	***2.038.000,00 €***
Total cost to develop **renewable energy sources – PV facilities**	***2.115.000,00 €***
Total cost in the renovation of **public street lighting**	***7.967.422,30 €***
Total cost to develop **digitalization program**	***420.000,00***
TOTAL ESTIMATED INVESTMENT	***12.540.422,30 €***

Table 6- Estimated investment

The TA Costs are detailed in Appendix A.

The leverage factor is detailed below:

	Investment scenario
TA costs	380.309,09 €
Investment program costs	12.540.422,30 €
Leverage factor	32,97
Leverage factor (percentage)	3297,43

Table 7- Leverage factor

2.3 Description of the main impact in terms of

2.3.1 Investments mobilized (total and financed by the Fund)

The total estimated investment planned for the investment program is about 12.540.422,30 €. This investment is expected to be made by private companies under PPP or in ESCO model.

It is expected that the Fund will provide technical assistance in the form of consultations (described in section 3). Its preliminary value is about EUR 380.309,09 € (estimated on the basis of preliminary consultations' market research, which took place before TA application submission to the Fund).

	Investments scenario
Investments financed by the Fund	380.309,09 €
Investments financed by private company in ESCO model	12.540.422,30 €
TOTAL (investments mobilized)	12.920.731,39 €

Table 8- Mobilized investment

2.3.2 Estimated annual energy savings from energy efficiency projects in GWh and estimated annual final energy production by renewable energy sources in GWh) envisaged.

Energy savings estimation from energy efficiency projects will represent:

Category	Measure	Electric savings (Final energy) (kWh/yr)	Electric savings (Primary energy) (kWh/yr)	Electric savings (%)	Thermal savings (Final energy) (kWh/yr)	Thermal savings (Primary energy) (kWh/yr)	Thermal savings (%)	Renewable generated energy (Final energy) (kWh/yr)	Renewable generated energy (Primary energy) (kWh/yr)	Renewable generated energy (%)	Financial savings (€)	CO2 emissions savings (tnCO2/yr)	CO2 emissions savings (%)
Smart Energy	Buildings - Light points replacement	347.386,88	834.770,68	3,48%							46.855,73	85,28	3,06%
Smart Energy	Buildings - Boiler replacement				41.543,90	49.644,96	18,41%				7.243,59	8,43	0,30%
Smart Energy	Municipal buildings - HVAC replacement	266.061,75	639.346,39	2,67%							34.588,03	34,59	2,05%
Smart Energy	Monitoring platform	140.671,26	338.033,03	1,41%	11.480,80 €	13.719,56	5,09%				21.638,32	38,46	1,38%
Smart Energy	Public street lighting	4.591.015,62	11.032.210,53	46,03%							718.163,48	1.253,35	45,01%
SUBTOTAL SMART ENERGY		**5.345.135,50**	**12.844.360,61**	**53,59%**	**53.024,70**	**63.364,52**	**23,50%**				**828.489,14**	**1.420,10**	**51,00%**
Renewable sources	PV facilities in bulidings							796.000,00	1.912.788,00	7,98%	103.480,00 €	217,31	7,80%
Renewable sources	PV in Cemetery and Vehicle deposit							1.751.200,00	4.208.133,60	17,56%	227.656,00 €	478,08	17,17%
SUBTOTAL RENEWABLE SOURCES								**2.547.200,00**	**6.120.921,60**	**25,54%**	**331.136,00**	**695,39**	**24,97%**
TOTAL		**5.345.135,50**	**12.844.360,61**	**53,59%**	**53.024,70**	**63.364,52**	**23,50%**	**2.547.200,00**	**6.120.921,60**	**25,54%**	**1.159.625,14**	**2.115,49**	**75,98%**

Table 9- Summary of energy savings

And in MWh/yr and GWh/yr:

Category	Measure	Electric savings (Final energy) (MWh/yr)	Electric savings (Final energy) (GWh/yr)	Thermal savings (Final energy) (MWh/yr)	Thermal savings (Final energy) (GWh/yr)	Energy savings (Primary energy) (MWh/yr)	Energy savings (Primary energy) (GWh/yr)	Renewable generated energy (Final energy) (MWh/yr)	Renewable generated energy (Final energy) (GWh/yr)	Renewable generated energy (Primary energy) (MWh/yr)	Renewable generated energy (Primary energy) (GWh/yr)	Financial savings (€)	CO2 emissions savings (tnCO2/yr)
Smart Energy	Buildings - Light points replacement	347,39	0,35			834,77	0,83					40.608,30	85,28
Smart Energy	Buildings - Boiler replacement and solar thermal			41,54	0,04	49,64	0,05					7.243,59	8,43
Smart Energy	Municipal buildings - HVAC replacement	266,06	0,27			639,35	0,64					51.893,58	57,19
Smart Energy	Monitoring platform	140,67	0,14	11,48	0,01	351,75	0,35					18.820,90	38,46
Smart Energy	Public street lighting	4.591,02	4,59			11.032,21	11,03					718.163,48	1.253,35
SUBTOTAL SMART ENERGY		**5.345,14**	**5,35**	**53,02**	**0,05**	**12.907,73**	**12,91**					**836.729,84**	**1.442,71**
Renewable sources	PV facilities in bulidings							796,00	0,80	1.912,79	1,91	103.480,00	217,31
Renewable sources	PV in Cemetery and Vehicle deposit							1.751,20	1,75	4.208,13	4,21	227.656,00	478,08
SUBTOTAL RENEWABLE SOURCES								**2.547,20**	**2,55**	**6.120,92**	**6,12**	**331.136,00**	**695,39**
TOTAL		**5.345,14**	**5,35**	**53,02**	**0,05**	**12.907,73**	**12,91**	**2.547,20**	**2,55**	**6.120,92**	**6,12**	**1.167.865,84**	**2.138,09**

Table 10- Summary of energy savings in MWh and GWh

To sum up, the global energy savings will be:

Category	Measure	Total energy savings (Primary energy) (MWh/yr)	Total energy savings (Primary energy) (GWh/yr)	Total energy savings (%)	CO2 emissions savings (tnCO2/yr)	CO2 emissions savings (%)
Smart Energy	Buildings - Light points replacement	834,77	0,83	3,44%	85,28	3,06%
Smart Energy	Buildings - Boiler replacement and solar thermal	49,64	0,05	0,20%	8,43	0,30%
Smart Energy	Municipal buildings - HVAC replacement	639,35	0,64	2,64%	34,59	1,24%
Smart Energy	Monitoring platform	351,75	0,35	1,45%	38,46	1,38%
Smart Energy	Public street lighting	11.032,21	11,03	45,52%	1.253,35	45,01%
SUBTOTAL SMART ENERGY		**12.907,73**	**12,91**	**53,26%**	**1.420,10**	**51,00%**
Renewable sources	PV facilities in bulidings	1.912,79	1,91	19,18%	217,31	7,80%
Renewable sources	PV in Cemetery and Vehicle deposit	4.208,13	4,21	40,37%	478,08	17,17%
SUBTOTAL RENEWABLE SOURCES		**6.120,92**	**6,12**	**25,26%**	**695,39**	**24,97%**
TOTAL		**19.028,65**	**19,03**	**78,51%**	**2.115,49**	**75,98%**

Table 11- Summary of results

As seen in the previous table, the biggest energy savings occur in the upgrade of street public lighting.

According to table number 10, anf focusing only on energy efficiency sources the final energy savings from the energy efficiency actions (Smart energy) are 5.398 MWh , (12.907 MWh in primary energy) which is equivalent to 53%. Likewise the reduction of CO2 emissions are 1420 tonnes per year , which is equivalent to 51%

2.3.3 Renewable energy to be produced.

As it was defined in the previous chart, estimated annual final energy production by renewable energy sources will represent:

- Only photovoltaic energy will generate around 6,12 GWh/yr (6.120 MWh/yr) in primary energy, which is equivalent to 25 %.

In total, together with the energy efficiency measures and renewable energy production this TA project expects to save 19.028 MWh/yr. or 19,03 GWh/yr which is equivalent to 76 % as well the CO2 emissions reduction for the whole project is estimated at 2.115 tonnes per year.

2.3.4 Jobs created/sustained by the investment.

- **Analysis phase (1 year)→** 6 FTEs–From the City Council and an independent Energy Consultancy that will support the City Council in the whole process from studies to tendering process.
- **Construction phase (1 year)→**20 FTEs from the private company (ESCO) and subcontractors working in the renovation of the installations and developing the future infrastructures.
- **Operation phases (from 10 to 15 years)→** 22 FTEs from the ESCO and the City Council (the number depends on the responsible of the maintenance: some will be done by the ESCO and others by the City Council so both will have to arrange some agreement for workload distribution).

2.4 Compliance with EU policies

Spain's integrated National Energy and Climate Plan for 2021-2030 acts as the source of following text:

The energy and climate policy framework in Spain is determined by the European Union (EU), which – for its part – is acting in line with the requirements of the Paris Agreement reached in 2015 to provide a coordinated international response to the climate change challenge. The EU ratified the Paris Agreement in October 2016, allowing its entry into force in November of that year. Spain ratified it in 2017, thus renewing its commitment to energy and climate change policies.

In this context, in 2016 the European Commission presented its 'winter package', ('Clean energy for all Europeans' COM(2016) 860 final), which has been implemented through various regulations and directives. These incorporate revisions of and proposals for legislation on energy efficiency, renewable energy, electricity market design, security of supply and governance rules for the Energy Union. This new regulatory and policy framework provides regulatory certainty and creates favorable conditions for undertaking the major investments that are needed. It also encourages European consumers to become active players in the energy transition.

The aim of these initiatives is to facilitate and update compliance with the main binding targets for the EU for 2030, which are set out below:

40% reduction in greenhouse gas (GHG) emissions compared to 1990.

32% share of renewable energy in total gross final energy consumption.

32.5% improvement in energy efficiency.

15% electricity interconnection between the Member States.

Generation system in the Target Scenario (MW)				
Years	2015	2020	2025	2030
Wind (onshore and offshore)	22,925	28,033	40,633	50,333
Solar photovoltaic	4,854	9,071	21,713	39,181
Solar thermoelectric	2,300	2,303	4,803	7,303
Hydroelectric power	14,104	14,109	14,359	14,609
Mixed Pumping	2,687	2,687	2,687	2,687
Pure Pumping	3,337	3,337	4,212	6,837
Biogas	223	211	241	241
Other renewables	0	0	40	80
Biomass	677	613	815	1,408
Coal	11,311	7,897	2,165	0
Combined cycle	26,612	26,612	26,612	26,612
Cogeneration	6,143	5,239	4,373	3,670
Fuel and Fuel/gas (non-peninsular territories):	3,708	3,708	2,781	1,854
Waste and other	893	610	470	341
Nuclear	7,399	7,399	7,399	3,181
Storage	0	0	500	2,500
Total	107,173	111,829	133,802	160,837

Source: Ministry for Ecological Transition and Demographic Challenge, 2019

This project will be in line with European and National norms about Electrical Security for low tension installations (REBT), Energy Efficient Outdoors Lighting (REEIAE) and indoor technical norms.

2.5 Intended Investment Program implementation process.

Detailed description of tasks to be carried out for technical assistance.

EE in buildings

1. *Description of the energy facilities*

   The main objectives are:

   - Compilation of data on the energy performance of the facilities under study.
   - Overall assessment of the facilities.
   - Evaluation of overall energy use of the facilities.

2. *Data collection/analysis of the collect data*

   For data collection will be necessary to use of the following equipment: Network analyzer, thermal imager, light meter, flue gas analyzer.

   - General photographs be taken of the various facilities.
   - Collect drawings of facilities (electrical, lighting and HVAC).

- Collect information on facilities projects (electrical, lighting, HVAC, etc.). Existing and future (next 2 years).
- Climate data.
- Electricity bills, natural gas, and other fuels of all counters of the facilities.
- Data will be taken to establish the curves of consumption of natural gas and other fuels by meter readings and interviews with users including.
- Habits of use.
- An inventory of the systems of generation, distribution and HVAC terminal units and ACS. This inventory shall contain at least the following information:
    - Type of equipment (boiler, heat pump, centralized system, etc.).
- Measurement of energy parameters *in situ* (using clamps, luxmeter, termographic cameras)
- If the consumption curve of each facility is available, it will be requested and used to calculate the base line,as its data are more accurate than in situ measurements with clamps.

3. *Baseline determination*

   It is considered the baseline period before the implementation of cost saving measures. therefore:

   - The baseline consumption is the consumption to consider before implementing saving measures.
   - The baseline conditions, likewise, will be the conditions to be considered before the implementation of saving measures.

4. *Economic Analysis*

   An economic study will include an analysis of the necessary investment and payback of each measure in order to identify those investment measures lower or shorter repayment periods.

   This will make it possible to develop a savings plan with measures to carry out short, medium and long term, quantified the necessary investments over the years.

5. *Technical Analysis*
   - Study of energetic inefficiencies: old equipment, losses in the distribution of heat or cold, inappropriate thermal insulation, inappropriate solar factor, lack of control systems, etc.
   - Proposed saving measures relating both to the efficiency of the equipment or systems (heating, boiling, electricity, etc.).

Renewable energy sources – PV facilities installation in 7 public buildings (4 sport centers, 1 brigade warehouse, 1 vehicle deposit (including batteries) and 1 cemetery).

1. *Data collection/analysis of the collect data*
    - General photographs be taken of the rooftops where FV is going to be installed.
    - Collect drawings of each building.
    - Electricity bills of the building.
    - Data will be taken to establish the curves of consumption of electricity by meter readings and interviews with users including.
    - Habits of use.
    - Measurement of energy parameters *in situ*.
2. *Economic Analysis*

    An economic study will include an analysis of the necessary investment and payback of each facility in order to identify those investment measures lower or shorter repayment periods.

    This will make it possible to develop a savings plan with measures to carry out short, medium, and long term, quantified the necessary investments over the years.
3. *Technical Analysis*
    - Study of each FV facility, including materials, self-consumption study, and redaction of all the documentation needed.

EE in public street lighting

1. *Data collection (19.706 light points will be included in the audit, although 14.642 will be proposed to change as they are not LED). The remain will be included in the project of tele-managemement.*
    - Inventory will be made under the IDAE Protocol “Energy Audit Protocol Facility Exterior Street Lighting".
    - Energy parameter measurements "in situ" using luxmeters, clamps, thermographic cameras, etc.
    - Light points database: type of lighting, type of lamps, lamp power, ballast type, etc.
    - Control panels database: on-off system, existing energy saving system, state of the control panels, etc.
    - Roadways database: street to which it belongs, road width, number of light points, luminance levels, etc.
    - Study of electrical parameters: amperage, voltage, power, power factor, reactive power, etc.
    - Classification of types of roads in the Municipality.
2. *Technical-Economical Analysis*

3.

- Energy analysis of the facilities: installed power, measuring elements, elements of power reduction, switching and protection systems, facility performance, etc.
- Maintenance and management. Operation hours.
- Description of observed energy inefficiencies.
- Description of possible savings measures: replacement of luminaires and lamps with more efficient, installation of the adjustment of the light level, replacement of ballasts, tele-management systems, etc.
- Economic valuation of each saving measure: potential energy savings and expected, installation cost, cost savings, profitability and expected return time, estimated savings in CO2 emissions, etc.

Digitalization program

1. *Technical Analysis*
    - Study of types of digital platform types for monitoring and management, defining hardware and software solution.

Post TA stage:

1. *Tender documents preparation*

    At this stage will be defined, first, needs and objectives derived from the quantified savings measures in the energy audit, selecting those measures that will be included in the bidding for an ESCO.

    The Technical Sheets will be prepared as a basis for competitive bidding and contract support the jury, since the opening, evaluation of tenders and awarding the contract end.

    - Selection of measures to include in the bidding for a contract ESE.
    - ESCO business modelling.
    - Writing technical specifications for contracts with Energy Service Companies.
2. *Contracting Committee support*
    - Support for the jury as advisor to the City Council, the resolution of any incidents or issues arising in the act of opening of tenders. Just proceed to record the parameters of the offers included in the bid and submit a report to the jury.
    - Advice to the jury in the technical assessment of bids, making a technical evaluation report of the proposed solution for each of the bids submitted.
3. *M&V during the contract*

    Within the Energy Performance Contract is advisable to establish a protocol to be applied in monitoring energy management that adheres to both the ESE and the City Council. It would establish the tools and methodologies used to calculate the savings over time. They will be specified by the yields of the works undertaken during the term of the contract of energy services.

For the facility being audited, will propose a plan for monitoring energy consumption. Assess the possibility of implementing management systems, so that consumption can be recorded and centrally control the various systems.

Measurement and Verification (M&V) is a coherent process of measurements, which has as its ultimate determination, reliably, the savings achieved in a program of energy management within a given facility.

The main objectives of the Measurement and Verification service savings are:

- Establishing a Measurement and Verification Plan savings needs specific apparatus according to the International Protocol IPMVP of EVO organization.
- Maximizing estimating energy saving.
- The Measurement and Verification Plan allows for the continuation and maintenance savings over time.
- Compliance with contractual terms in implementing energy efficiency improvements, as defined in the contract with the ESCO.
- Measurement and Verification is a reliable and objective evidence of the effectiveness of energy management.

2.6 Intended process and procurement procedure for ESCO selection.

The ESCO tender will be published once the complete study has been accomplished. The selected ESCO or ESCOs (winner/s of the tender) will have to implement the energy efficiency sustainable urban development concept within the 12-24 initial months once the contract with the City Council has been signed.

The tendering process will follow the recommendations from Spanish Governmental institutions: Energy Agencies and Ministry of Industry.

The tender will be launched as an EPC model (IDAE-Spanish Energy Agency is promoting a tendering model very similar to an EPC contract).

Reus City Council plans to join the EPC contract model of IDAE (5P model).

In this model, City Council asks for several services to be provided by the ESCO, normally including:

- Supply and efficiency improvement.
- Maintenance of equipment
- Full Warranty
- Renewal and Improvement Works
- Investment in equipment
- Energy savings guarantee

2.7 Market replication potential for other City Councils

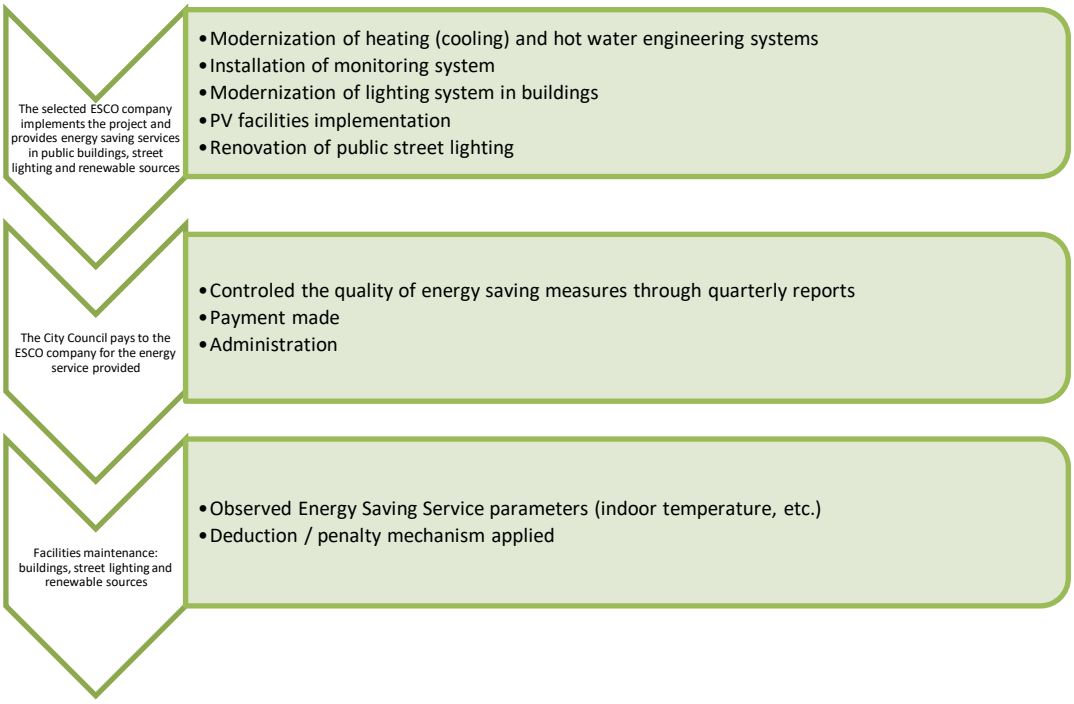
Reus City Council will be a city where others in the area can be inspired and expects this project will be replicated in other areas.

2.8 Description of previous assessments and studies

A previous study has been performed in order to determine the necessary initial costs to implement energy efficiency in different buildings, photovoltaic panels, energy efficiency in public street lighting and digitalization program. The amount considered in this application comes from these previous studies that should be updated, as they are based on information given by the City Council. **See Appendix A.**

The present document is an initial assessment of the potential energy savings and the investment to obtain these basic ratios. Technical assistance shall determine, in further detail, the actual scope for these values in facilities of the City Council.

2.9 Indicative implementation timeline of Investment Program (post TA phase completion)



For a more detailed timeline, see Appendix B.

3. Technical Assistance required for the Investment Project

3.1 Description of the services required from TA to implement the Investment Program

The main objective of the technical support is to give Reus City Council a global technical backup in the development of the Smart Energy project that the City Council is going to carry out. The main functions of this technical support are:

- **Investment Grade Audit Execution**: the main goal for performing Investment Grade Energy Audits is to give a thorough knowledge of the state of the infrastructures and the energy consumptions, establishing a certain diagnosis of the state of energy efficiency and determining a plan for the infrastructure's renewal.
- **Technical Support** to the City Council in order to assess them in the whole Smart Energy project implementation.

Investment Grade Energy Audits

The objectives of the works are:

- **In buildings (21 audits in total):**
  - Description of the current installations in buildings:
    - Inventory of the installations.
    - Analysis of the energy performance.
  - Current energy situation:
    - Current energy data capture.
    - Different energy measurements.
  - Improvement of the energy consumers systems:
    - Proposed of improvement of the different systems installed.
    - Evaluation of energy and economical savings, return of investment analysis.
  - Baseline definition:
    - The consumption before measures implementation will be determined previously, in order to check and verify energy savings.
  - Economic and energy analysis:
    - Spreadsheet design to calculate project estimations of cash flows, detailing: savings per type of energy, CAPEX and OPEX.
- **Renewable energy sources.** It will be required the development of feasibility studies in 7 public buildings, including 4 sport centers, 1 warehouse, 1 cemetery and 1 vehicle deposit, as detailed in 2.1 – Scope of the project.
  - Description of locations and viability:
    - Analysis of the energy performance.
  - Current energy situation:
    - Current energy data capture.

    - Different energy measurements.
  - Improvement of the energy consumers systems:
    - Proposed of improvement of the different systems installed.
    - Evaluation of energy and economical savings, return of investment analysis.
  - Baseline definition:
    - The consumption before measures implementation will be determined previously, in order to check and verify energy savings.
  - Economic and energy analysis:
    - Spreadsheet design to calculate project estimations of cash flows, detailing: savings per type of energy, CAPEX and OPEX.
- **Public lighting (1 energy audit): 19.706 light points will be included in the audit, although 14.642 will be proposed to change as they are not LED**
  - Description of the current installations:
    - Execution of GPS located inventory.
  - Lighting level measures:
    - To verify level and characteristics of the lighting.
    - To verify operation of the luminaries.
  - Electrical measures:
    - To detect over-voltages.
    - To check the quality of electrical supply.
  - Diagnosis and analysis. Improvement proposal:
    - Taking into account Norms accomplish, ROI optimization, etc.
  - Baseline definition:
    - The consumption before measures implementation will be determined previously, in order to check and verify energy savings.
  - Economic and energy analysis:
    - Spreadsheet design to calculate project estimations of cash flows, detailing: savings per type of energy, CAPEX and OPEX.
- **Digitalization program : Technical study and validationfor the implementation of the digital platform to monitor 20 of the 21 audited buildings.**
    - Description of each building needings in terms of monitoring
    - Study of types of digital platform for monitoring and management, defining hardware and software solution.
    - Economic and energy analysis

Technical support

The City Council will receive technical support for the following points:

- **Elaboration of a M&V Plan (Measurement and Verification of Savings)**
  - It will be defined a M&V Plan in order to carry out the obtained savings measurement once the Energy Efficiency actions are implemented.

- **Legal and technical advice for the subsequent contracting period based on energy savings sharing:**
  - Selection of the measures to be included in the Energy Services contract.
  - ESCO business model design.
  - Technical specifications definition.
- **Contracting support:**
  - Support for the incident's resolution, offers comparison and report preparation.
  - Advice to the jury (bids technical evaluation): Bids Technical Evaluation report.

Description of the services required from TA to implement the Investment Program (for each segment separately e.g. public buildings, street lighting, renewable energy and digitalization)

The TA funds will be used to support the additional efforts of the City Council´s employees to prepare for the modernization of infrastructures/installations and prepare their technical due diligence, Investment project according to National requirements, and carry out PPP procedure in ESCO selection. It is expected that TA Consultants will provide technical, legal, and financial advisory services in relation to these tasks:

Task 1. Technical studies (i.e, feasibility studies) of the infrastructure/installations, and technical consultations, including preparation of the energy audits of the investment program facilities.
Task 2. Define scope and prepare Investment project according to National requirements related to PPP model implementation.
Task 3. Recommendations on the institutional set up of a PIU and support the Project in the process of tendering, supervision of implementation and commissioning.
Task 4. Legal analysis and preparation of tender package and approval documents.
Task 5. Scope out the interest of the private-sector energy efficiency community.
Task 6. Support in contractor selection and agreement.

Brief descriptions of tasks implementation are provided below.

Task 1. Produce 21 energy audits related to building consumptions, PV feasibility studies in 7 buildings (4 in sport centers, 2 in warehouse, 1 in cemetery and 1 in vehicle deposit) ,1 public street lighting audit and 1 digital platform study, plus the related technical consultations.

The purpose of the comprehensive technical study is to assess the current state of the building infrastructure and PV system, street lighting and digital platform viability, to identify the factors that determine energy costs, to select appropriate measures that

will not only reduce the energy costs of the building, but and improve comfort conditions, increase the lifespan of a building or its individual parts.

The building energy audits will include:

(i) Inventory for energy efficiency improvements, both in buildings and street lighting.

(ii) Assessment of renewable energy use for energy production. Analysis on RES feasibility hasn't been made yet. Analysis will assess technical also economic feasibility to install photovoltaic for electricity production.

(iii) Feasibility analysis on lighting renovation in buildings and in street lighting. Analysis will cover inventory of existing lightning systems, quality of lightning, alternatives for energy efficiency in the systems and feasibility assessment. Lightning modernization should be within the scope of ESCO/EnPC contract.

(iv) Measurements of buildings and street lighting key parameters, such as Temperature in buildings(°C), energy consumption, etc. will be measured during the assessment.

(v) ESCO tenderers use energy audit data to calculate investments. That is why the surface areas (including windows, roofs, walls, etc.) and volumes for the buildings need to be accurate, especially windows need to be replaced and insulation added. CAD based models should be developed for the buildings, they will be part of tender documents annexes and will be used by ESCO companies to calculate investments.

(v) Collect object-specific input data. Collect information about the object and its facilities. Buildings and street lighting are inspected and analysed as far as they are related to energy saving. Collect information on the energy costs and costs of the facilities.

(vi) Technical analysis of energy costs and costs, energy cost balances. A summary of the actual costs and costs of the object and its facilities in terms of energy and O&M costs is produced. In determining the unit cost of energy produced from fuel, all components of fixed and variable costs are calculated to produce the energy unit. The balances of the actual costs of energy are created for the whole object. The results of calculations made for energy consumption balance calculations are attached to the audit report.

(vii) Selecting energy saving measures and identifying potential savings. Organizational technical measures to reduce energy costs are selected based on the results of the object inspection, measurements of energy parameters, costs. The digitalization part of the project, which includes the telemanagement system of street lighting and the energy monitoring system in buildings, will be developed separately in each of that parts of the project.

(viii) Assessing the cost-effectiveness of energy saving measures. The planned energy saving measures are grouped into austerity groups. Energy Saving Groups are classified

by simple payback time (hereinafter referred to as PAL): a savings group with a PAL less than 10 years; a savings group with a PAL of 10 to 20 years; a savings group with over 20 years of PAL. An assessment of the cost-effectiveness of the planned energy saving measures is continued. The results of the economic assessment of each group of energy saving measures are presented in the tables, showing the investments in the proposed energy saving measures, potential energy savings and cost-effectiveness indicators.

(x) Energy audit reports.

(xi) Technical consultations related to qualitative update of energy audits preparation to the Project facilities.

(xii) Development of technical specification as part of Tender documents.

(xiii) Development of fines Methodology based on actual energy costs for the Project buildings.

Task 2. Define scope and prepare Investment project according to National requirements related to PPP model implementation.

Review, summarize and document any public buildings and street lighting development plans, available studies, and the Project investment proposals, and set out the rationale and justification for the Project components and investments.

(i) Analyse, to the extent possible, and comment on the current public buildings and street lighting infrastructure and its maintenance, institutional set up, legal practices, standards, suggest areas for improvements, and provide the guidelines for the involvement from the private sectors under the new Project.

(ii) Study and confirm the new and innovative green technology, specifically in carbon/economic savings, to be achieved in the Project. The consultants should present several alternatives evaluating the economic benefit of different energy-saving measures.

(iii) Analyse the energy-saving measures available on the market, benefits, and drawbacks of the usage of each of them as well as conduct costs comparison.

(iv) Provide current costs associated with the new modernized infrastructure and estimate a five- and ten-year outlook of the potential cost reduction of the same infrastructure in case of an instant implementation, and then compare the cost savings with the costs of:

- “Continue as is”.
- “Tender 5 years contract”.
- “Tender 15 years contract” delayed implementation.
- implementation using budget allocations.
- implementation financed by a loan to the Project / City Council

The comparison shall include cost savings, including energy, operation and maintenance, carbon savings and management.

(v) Assemble and review all available relevant data, reports, designs, and mapping for the proposed investments, and advise on any additional design work that may be required.

(vi)Assist City Council authorities in decision making and preparations necessary to make those decisions and to implement the Project.
(vii) Prepare the inputs for a Procurement Plan and an Implementation Plan – with appropriate descriptive text – for the Project.

(viii) Prepare an Implementation Plan for the Project:

(ix) Set out the scope, process and budget needed to complete all necessary planning and design work for the recommended project components, including economic evaluation.

(x) Prepare a basic economic internal rate of return ("EIRR") of the proposed investments with cash flow projections covering on three scenarios (base, conservative, negative);

(xi)Prepare a Cost Table, giving best estimates of the costs of project costs: preparation including preparation of detailed design documentation, construction/implementation works supervision costs, based on currently available information. Cost estimates should be presented separately for each category segment, based on local or other relevant construction markets. The cost estimates for the details design shall include, where applicable, the cost of any surveys.

(xii) Propose a general evaluation methodology with appropriate criteria for tendering out rehabilitation considering a possible PPP-nature of the contractual arrangement (energy performance contract, a concession, or the like arrangements).

Task 3. **Recommendations on the institutional set up of a PIU and support the City Council staff in the process of tendering, supervision of implementation and commissioning.**
The Consultant also will propose the implementation arrangements required for successful ESCO/EnPC Project completion. This will include recommendations regarding the establishment of a Project Implementation Unit ("PIU") for the EnPC Project. The Consultant will incorporate all activities into the Work Plan, which will be an integral and robust project management tool of the assignment. The Work Plan will be most detailed for the following quarter and will act as a record of activities conducted to date. It will, however, give visibility over activities through to project implementation. This Work Plan will be shared with the City Council staff and other stakeholders where appropriate and can be extended to include activities and actions required by such stakeholders.

The Consultant will provide technical/legal/financial support to the PIU during the tender process, supervision of implementation and commissioning by the City Council staff, as an external expert, will support the PIU in technical/legal/financial matters. This also includes commenting on the documents and supporting the City Council staff in its handling of the process.

Task 4. **Legal analysis and preparation of tender package and approval documents.**

Prepare a legal analysis of the tender process and CPMA provided contract templates, establishing their validity with respect to relevant laws and identifying any key issues which need attention and adjust it so that the contract is fit for purpose in the legal framework in Spain. The analysis should cover at least the following:

(i) Current procurement and contracting practice for public buildings and street lighting modernization by implementing energy saving measures.

(ii) Legal basis nature of the ESCO/EnPC contract template and applicable legal framework for procurement, contracting, budgeting (i.e. public procurement, concession, PPP etc.); confirmation of appropriate procedures for awarding of the ESCO/EnPC, i.e. open or restricted tender, competitive dialogue etc.).

(iii) Financing, i.e. treatment of different funding sources including grants (in addition to analysis of tender award) and own contribution of public authority, if this is the case, and treatment with respect to public debt classification.

(iv) required budget procedures for initial approval and throughout the duration of the EnPC and accounting treatment by the public authority, e.g. how assets are transferred and booked etc.

(v) Tax treatment and potential issues, if any, e.g. VAT; and

(vi) Conclusions and proposals for any required legislative amendments and

(vii) Propose general evaluation methodology with appropriate criteria for tendering out rehabilitation considering a possible PPP-nature of the contractual arrangement (energy performance contract, a concession, or the like arrangements).

The Consultant shall prepare the tender package, including contract, selection criteria, technical specifications:
(i) Based on the results of the legal analysis and after receiving input from technical inventory of public buildings infrastructure / investment project, technical specification of the Project will be drafted and coordinated with PIU.

(ii) At the same time, procurement documentation according to the optimal procurement alternative indicated in the Legal analysis would be prepared and coordinated by PIU.

(iii) after coordination of the procurement package with PIU, it would be presented for CPMA and other relevant institutions for approval.

Task 5. Scope out the interest of the private-sector energy efficiency community.

This task will use a very small part of the resources. It aims at ensuring sufficient interest of competent companies for this tender. The Consultant shall help identify regional and international companies interested in this tender, informing them about the project and obtaining their feedback. In order to increase the awareness of the project consultants propose the following works:

(i) Prepare info-memo materials for the potential companies.

(ii) Organize pretender event and answer questions related to the tender.

(iii) Obtain feedback from the interested companies.

Task 6. Support in contractor selection and agreement.

The Consultant shall support the City Council during the procurement process and contractor selection procedure.

3.2 Implementation Timeframe (GANTT chart)

The TA development will cover a period around 12-14 months for Audits and Tender preparation. Details in **Appendix B**.

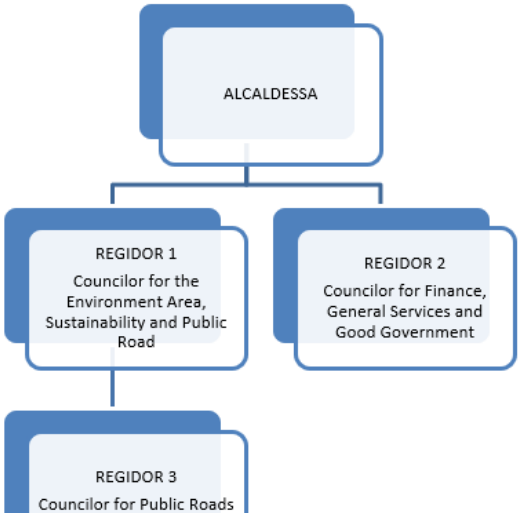
3.3 Information on other subsidies or grants

-

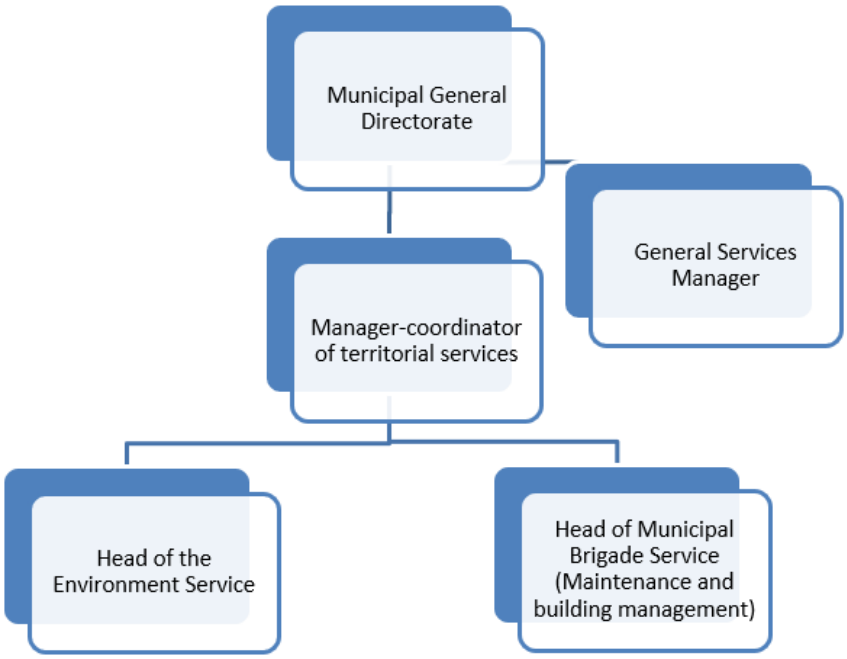
3.4 Commitment to support TA

The structure of the Program Implementation Unit (PIU) is the following.

First, The political structure of the city council:



And, now, The management structure of the city council:



Finally, the information of the key people of the project:

Role in PUBLIC BENEFICIARY Administration	**Name**	**Telephone number**	**E-mail**
Mayor / Alcaldessa	Sra. Sandra Guaita Esteruelas	+34977010282	sguaita@reus.cat

Councilor for Public Roads and Youth	Sr. Daniel Marcos Cruz	+34977010022	dmarcos@reus.cat
Councilor for the Environment Area, Sustainability and Public Road	Sr. Daniel Rubio Angosto	+34977010078	drubio@reus.cat
Councilor for Finance, General Services and Good Government	Sr. Manel Muñoz Coll	+34977010022	mmuñoz@reus.cat
Municipal General Directorate	Sr. Jordi Dies Monclús	+34977010276	-
General Services Manager	Sr. Josep Solé Tarragó	+34977010276	josepsole@reus.cat
Manager-coordinator of territorial services	Sr. Anton Maria Salvadó Cabré	+34977010074	amsalvado@reus.cat
Head of Municipal Brigade Service (Maintenance and building management)	Sr. Adam Besora Balaña	+34977010074	abesora@reus.cat
Head of the Environment Service	Sr. Ramon Castellví Andreu	+34977010074	rcastellvi@reus.cat

Besides all these representative from the public authority mentioned above, it will be assigned technical staff from the General Services Department to support and control the development of the TA project (after the first kick off meeting)

PUBLIC BENEFICIARY will be responsible for:

- Acting as contact point, coordinator, and supervisor of the work of the external experts in their respective fields.
- Follow up assemble and check the tender's documents completeness, including the reports containing the technical data input.
- Assist the staff in the procurement and contract negotiation process.

- Verify achievements of the program milestones and facilitate the investment program implementation.
- Presentation of Final report to the Fund and provide required /relevant documents requested by EEEF.

The implementation of the Investment Program would require procurement delivery of data regarding the object of would-be procurement exercise possessed by present managers of public buildings and the Administration.

Some key decisions related to the implementation of the project would have to be adopted by the Council of PUBLIC BENEFICIARY, therefore scrutiny and transparency of the Investment Program implementation should be promoted.

Accordingly, Program Implementation Unit (hereinafter – PIU) will be comprised of the top management of Administration of PUBLIC BENEFICIARY responsible for the development of PUBLIC BENEFICIARY infrastructure, representatives of Investment division, Infrastructure, Procurement, Control / audit, and Legal departments of the Administration of PUBLIC BENEFICIARY.

The Consultancy company will be assigned by the eeef.

Upon completion of the relevant investment grade audits, Reus City Council will publish a public tender for the investment and completion of the proposed energy efficiency measures. These will include the planned equipment renovation and energy efficiency management according to the following sections.

- ***P1 Energy Management***

  By this service will be defined the minimum savings that the City Council would obtain in its annual energy expenditure.

- ***P2 Maintenance***

  It will be defined the maintenance scope and its cost during the contract period with the ESCO.

- ***P3 Full Warranty***

  In this section will be defined the equipment, materials and spare parts in case of breakdown that will be provided by the ESCO.

- ***P4 Renewal and Improvement Works (investments)***

  This service is related to the Implementation and funding of the necessary improvement works and renewal by the ESCO as it will be pointed out in the specifications for the energy expenditure optimization, for meeting the legal regulations or because the status, function, performance or safety so warrant.

- ***P5 Energy Efficiency Improvements***

  In this service energy efficiency is improved by installing equipment and improvements pointed out in the audits performed by an independent Consultancy.

  The calculation of savings will be performed by an independent consultancy, which will check through the Measurement and Verification Plan designed by the technical assistance every 6 months.

There is a commitment for the public authority to continue with the investment programme, which will include the General Service Manager and the Head of Environment Service, me tioned in table above.

3.5 Beneficiary's commitment to facilitate dissemination of experience and results.

By this application, the City Council confirms its intention and clear commitment to share their experience and knowledge, not only in the TA phase but also in the implementation and ongoing operation ones.

Measures could include but not be limited to:

- Energy audit and investment project will be made public and available for market replication needs for other city councils.
- PUBLIC BENEFICIARY Administration commits to spread the “approach” to other city councils in the surrounding areas by the following actions:

o Program’s presentation at a public event (conference/round table discussion) for representatives’ city councils.

- Project experience and results will be disseminated in public communication (at least 3 press releases, information on city council’s website);
- Public events will be organized to promote the project (press conference, possibly stakeholder participation programs).

PUBLIC BENEFICIARY will also ensure that suitable publicity is given in order to inform the public of the role of the Fund:

- All documents produced should mention Fund support and bear the logo of the Fund, when appropriate.
- Fund support to the project should be acknowledged in any public communication (press releases, launch of facilities)
- Representatives of the Fund should be invited to any public event organized to promote the project (press conferences, inaugurations, possibly stakeholder participation programs)

The energy efficiency project implemented in Reus demonstrates a high potential for replication in neighboring municipalities such as Tarragona, Cambrils, or Salou del Camp, due to a range of technical, socioeconomic, and governance factors that facilitate its adaptation and territorial scaling.

1. Similar urban and demographic context:

Neighboring municipalities share similar urban, climatic, and structural characteristics with Reus, which allows for an easy adaptation of the implemented measures, such as

the modernization of public lighting, improvement of energy efficiency in municipal buildings, or the integration of smart energy management systems.

2. Transferable technology:

The technological solutions adopted in Reus—such as integration of renewable energy sources, and energy management platforms—are scalable and compatible with existing infrastructures in surrounding municipalities. The standardization of these technologies facilitates their implementation with moderate investment.

3. Aligned regulatory framework and territorial planning:

Reus and its neighboring municipalities are subject to the same regional and national regulations regarding energy efficiency and ecological transition, which supports replication within the current legal framework, without requiring significant strategic adaptation.

4. Intermunicipal synergies and collaborative governance:

Reus' experience can serve as a regional benchmark, promoting collaboration networks between municipalities (such as associations or consortia) to share best practices, coordinate investments, and jointly apply for European funding and public subsidies. This cooperation can reduce costs and accelerate the energy transition across the region.

5. Demonstrated impact and inspiring narrative:

The positive results obtained in Reus in terms of energy savings, emission reductions, and improved urban comfort serve as a strong incentive for the adoption of the model in other municipalities. The visibility of tangible benefits strengthens political and social willingness for replication.

Appendix A. Estimated costs and funding of technical assistance.

The overall scope of the project for each of the actions, as well as the cost of technical assistance associated with each, is detailed below:

REUS	SCOPE	TA BUDGET
21 BUILDINGS	53.044 m^2	101.077,27 €
7 FVS	1.600 kWp	52.560,18 €
STREET LIGHTING	19706 light points + 247 command centers	100.100,98 €
DIGITALIZATION PROGRAM	49.060 m2	18.397,99 €
LEGAL ANALYSIS AND TENDERS		108.172,66 € €
	TOTAL	**380.309,09**

Type of activities / support	Description of tasks to be carried out (see comments below)**	Total [EUR]
EE in 21 buildings	*21 audits* *Data collection* *Baseline determination* *Technical Analysis* *Economic Analysis*	101.077,27 €
Renewable energy sources – 7 PV feasibility studies in buildings (4 sport centers,1 warehouse, 1 cemetery and 1 vehicle deposit)	*Data collection* *Technical Analysis* *Economic Analysis*	52.560,18 €
EE in public street lighting	*1 audit* *Data collection* *Technical Analysis* *Economic Analysis*	100.100,98 €
Digitalization program	*Technical Analysis* *Economic Analysis*	18.397,99 €
Tenders	*Preparation of Public Tenders for ESCO* *Technical Assistance to ESEs* *Contracting Committee support* *Smart Energy support* *Legal Assistance* *Financial Assistance*	108.172.66
TOTAL eligible costs [in EUR]		**380.309,09 €**
FUNDING		
Requested funding from EEEF facility [in EUR];		**380.309,09 €**

These costs do not include 21% of VAT. (Any applicable VAT exemptions or reverse charges will be studied during the project).

*Besides the implementation phase, during the existence of the EPC contract (IDAE model) the City Council will be controlling the development and the results of the actions taken. The technical capacity and the years of experience of the current personnel in the City Council as well as the independent external advice are key factors to guarantee the success of this project.

The technical staff from the City Council will supervise not only the installation phase but also the compliance of the ESCO with the figures (levels of saving, service level agreements, etc.) defined in the tendering process and the final contract.

Appendix B. Implementation Timeframe

Type of activities	Tasks to be carried out		month 1	month 2	month 3	month 4	month 5	month 6	month 7	month 8	month 9	month 10	month 11	month 12	month 13	month 14	month 15	month 16	month 17	month 18	month 19	month 20	month 21
Preparation																							
Kick Off																							
Work plan agreed																							
Set up op PIU																							
EE in 21 public buildings	Data collection	• Compilation of data on the energy performance																					
		• Overall assessment of the facilities																					
		• Evaluation of overall energy use of the facilities																					
		• General photographs																					
		• Collect drawings of facilities (electrical, lighting and HVAC)																					
		• Collect information on facilities projects (electrical, lighting, HVAC, etc.). Existing and future (next 2 years)																					
		• Climate data																					
		• Electricity bills, natural gas and other fuels of all counters of the facilities																					
		• Establish the curves of consumption of natural gas and other fuels by meter readings and interviews with users including																					
		• Habits of use																					
		• An inventory of the systems of generation, distribution and HVAC terminal units and ACS																					
		• Measurement of energy parameters in situ																					
	Baseline determination	• The baseline consumption is the consumption to consider before implementing saving measures																					
		• The baseline conditions, likewise, will be the conditions to be considered before the implementation of saving measures																					
	Technical Analysis	• Study of energetic inefficiencies: old equipment, losses in the distribution of heat or cold, inappropriate thermal insulation, inappropriate solar factor, lack of control systems, etc.																					
		• Proposed saving measures relating both to the efficiency of the equipment or systems (heating, boiling, electricity, etc.)																					
	Economical Analysis	• An economical study will include an analysis of the necessary investment and payback of each measure in order to identify those investment measures lower or shorter repayment periods																					
EE in outdoor public lighting (19.706 light points)	Data collection	• Inventory																					
		• Energy parameter measurements "in situ" using network analysers, luxometers, clamps, thermographic cameras, etc.																					
		• Light points database: type of lighting, type of lamps, lamp power, ballast type, etc.																					
		• Cabinet's database: on and off system, existing energy saving system, state of the cabinet, etc.																					
		• Vials database: street to which it belongs, road width, number of light points, illuminance levels, etc.																					
		• Study of electrical parameters: amperage, voltage, power, power factor, reactive power, etc.																					
	Technical Analysis	• Energy analysis of the facilities: installed power, measuring elements, elements of power reduction, switching and protection systems, facility performance, etc.																					
		• Classification of types of roads in the Municipality																					
		• Maintenance and management. Operation hours																					
		• Description of observed energy inefficiencies																					
		• Description of possible savings measures: replacement of luminaires and lamps with more efficient, installation of the adjustment of the light level, replacement of ballasts, tele-management systems, etc.																					
	Economical Analysis	• Economic valuation of each saving measure: potential energy savings and expected, installation cost, cost savings, profitability and expected return time, estimated savings in CO_2 emissions, etc.																					
Renewable energy sources – 7 PV feasibility studies in buildings (4 sport centers,1 warehouse, 1 cemetery and 1 vehicle deposit)	Data collection	• General photographs be taken of the rooftops where FV is going to be installed..																					
		• Collect drawings of each building..																					
		• Electricity bills of the building.																					
		• Data will be taken to establish the curves of consumption of electricity by meter readings and interviews with users including.																					
		• Habits of use.																					
		• Measurement of energy parameters *in situ* .																					
	Economical Analysis	An economical study will include an analysis of the necessary investment and payback of each facility in order to identify those investment measures lower or shorter repayment periods.																					
	Technical Analysis	· Study of each FV facility, including materials, self-consumption study, and redaction of all the documentation needed.																					
Digitalization program	Technical Analysis	· Study of types of digital platform for monitoring, defining hardware and software , including economic viability																					
Support	Tender documents preparation	• Selection of measures to include in the bidding for a contract ESE																					
	Tender publication	• ESCO business modelling																					
	Tender evaluation	• Tender publication																					
	Technical Assistance to ESCOs	• Writing technical specifications for contracts with Energy Service Companies																					
	Contracting Committee support	• Support for the jury as advisor to the City Council, the resolution of any incidents or issues arising in the act of opening of tenders. Just proceed to record the parameters of the offers included in the bid and submit a report to the jury																					
		• Evaluation of bidders: Advice to the jury in the technical assessment of bids, making a technical evaluation report of the proposed solution for each of the bids submitted.																					
		• Selection of winner ESCO and contract signing																					
	Smart Energy support	• Smart Energy support																					
	Legal Assistance	• Legal Assistance																					
	Financial Assistance	• Financial Assistance																					

ANNEX II: ELIGIBILITY RULES FOR THE PROJECT DEVELOPMENT SERVICES AND THE PLANNED INVESTMENT PROGRAMME

The following eligibility criteria will be applied to the Project Development Services, the identified planned Investment Programme and needs to be respected by the Final Beneficiary.

Eligibility of area's covered

Project Development Services can be provided for the development of the Investment Programme within the following areas:

- public and private buildings incorporating energy efficiency and/or renewable energy solutions including those based on the usage of Information and Communication Technologies ("**ICT**");

- investments in high energy efficient combined heat and power ("**CHP**"), including micro-cogeneration, and district heating/cooling networks, in particular from renewable energy sources;

- decentralised renewable energy sources embedded in local settings and their integration in electricity grids;

- microgeneration from renewable energy sources;

- clean urban transport to support increased energy efficiency and integration of renewable energy sources, with an emphasis on public transport, electric and hydrogen vehicles and reduced greenhouse gas emissions;

- local infrastructure, including efficient lighting of outdoor public infrastructure;

- such as street lighting, electricity storage solutions, smart metering, and smart grids, that make full usage of ICT;

- energy efficiency and renewable energy technologies with innovation and economic potential using the best available procedures.

ANNEX III: FINAL REPORT

Name of project: **Reporting period:**

1. Work progress

Achieved results against initial objectives of the work programme, sectors covered. Please outline all changes in relation to the information submitted on the initial application for Technical Assistance

2. Final list of the implemented Investment Programme

Detailed list of measures and projects and partners implementing the Investment Programme and the actual implementation timetable

3. Actual cost incurred for the whole project duration

4. Supporting documents to provide

please refer to Article I.3

5. Conclusions

lessons learnt and to pass over to other local authorities, next steps planned in the implementation of the Investment Programme– if relevant: Please outline cumulative renewable energy production to be implemented and/or cumulative primary energy savings achieved and also information for financing of the Investment Programme:

Date of report: