EUCF
European City Facility

4th Call Investors Report

August 2023

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What is the European City Facility?

The European City Facility (EUCF) is funding facility set up under the Horizon programme for Research and Innovation of the European Union. It provides tailor made and simplified financial support (grants of EUR 60 000) and capacity building services to municipalities and local authorities in European Union. The objective is that these entities develop sound investment concepts and mobilise finance in the field of sustainable energy.

The EUCF provides support for investment projects within the field of sustainable energy, including all investments on the energy demand side, which contribute to the improvement of energy performance and the achievement of energy savings.

The EUCF 4th Call was open from 9 June to 30 September 2022. Amongst 129 applications from all over Europe, 50 beneficiaries received the EUCF grant to create their investment concepts in this call.

What happens next?

As was the case for the first 3 Calls, the selected beneficiaries from the 4th EUCF call will now create their investment concepts. After validation, the investment concepts will be ready to be presented to potential investors.

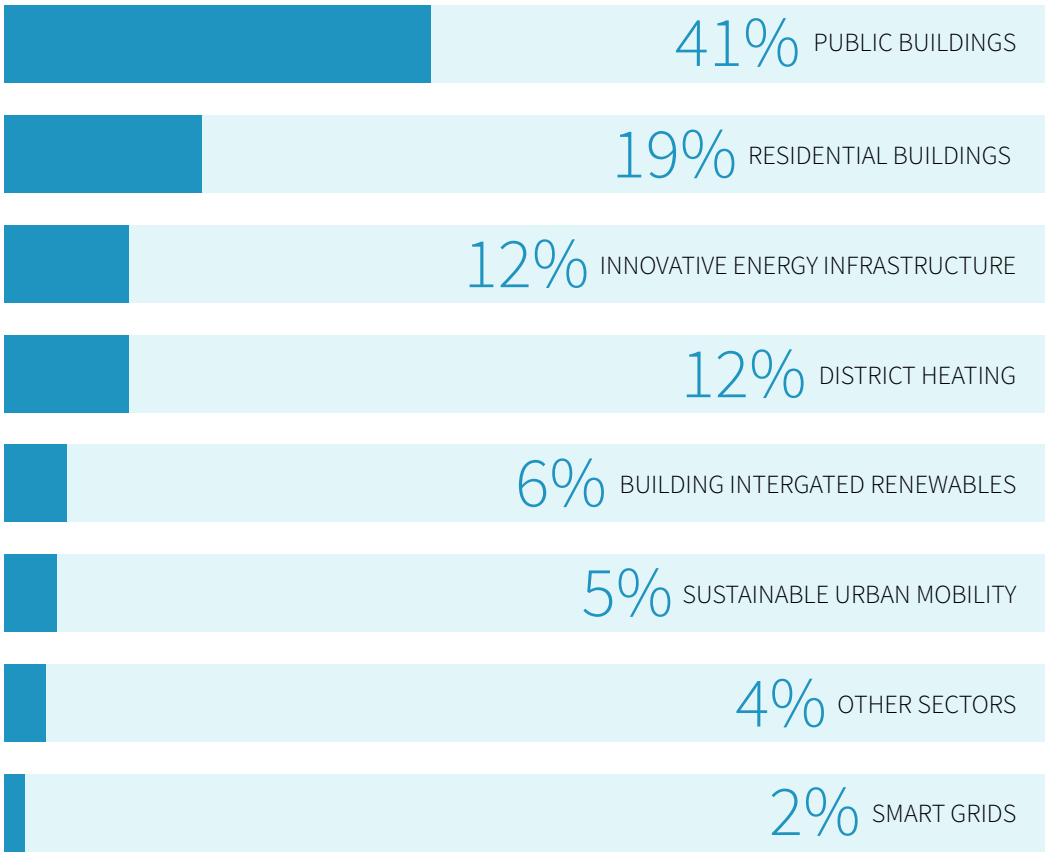
The resulting concepts will also be an initial step towards a fully-fledged business and financial plan. Potential investors are invited to contact the EUCF by registering to the EUCF investors network and thus obtain more detailed information about EUCF supported projects and investment concepts.

By joining the EUCF Investor Network, you will be given the chance to engage with EUCF cities, receive first-hand information on their investment concepts and seek opportunities to finance sustainable energy actions across Europe. The current report provides a summary of the projects that have been selected in the 4th EUCF call, with and overview of investment sectors and locations.

Investment Sectors and Regions

The 50 local authorities that are beneficiaries from the 4th EUCT call are divided into three regions: Central and Eastern Europe (CEE), Nordic countries &Western Europe (NC&WE) and Southern Europe (SE). Among the investment sectors targeted by the call, beneficiaries can be found amongst a variety of sectors: public buildings, residential buildings, building integrated renewables, district heating, smart grids, sustainable mobility and innovative energy infrastructure. Amongst the main sectors in which the successful applicants will develop their investment concept, “public building” is targeted most, followed by “residential buildings” and “innovative energy infrastructure” and “district heating”.

Figure 1:
Distribution of the selected projects in the 4th Call by Investment sector.
Please note that one investment project ma target more than one sector.

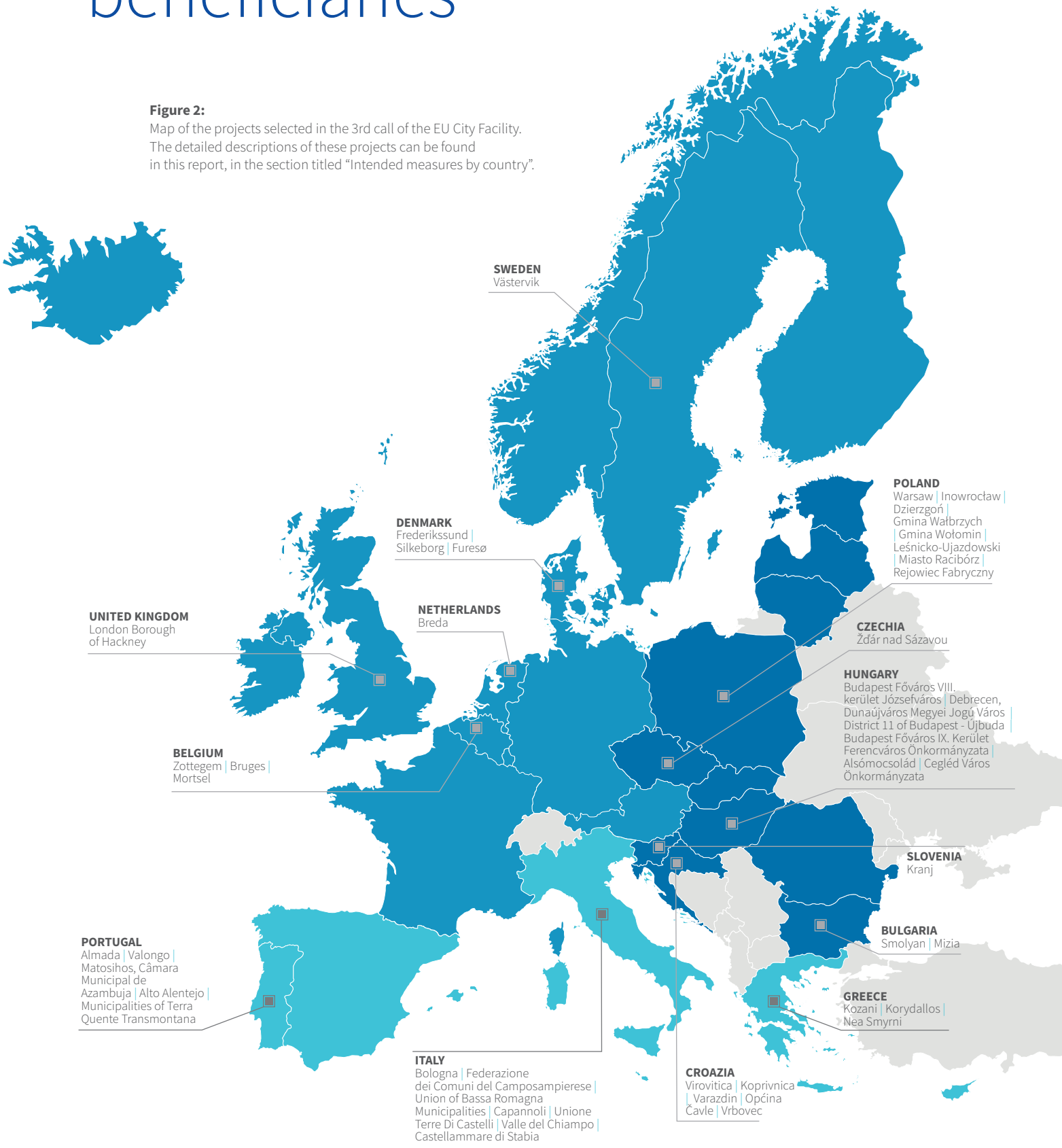


Investment Size Per Region

INVESTMENT SIZE	EXPECTED IMPACTS ENERGY SAVINGS	EXPECTED IMPACTS RENEWABLE ENERGIES PRODUCTION
CENTRAL & EASTERN EUROPE (CEE)		
1405 MILLION €	**954.3** GWh/y	**626** GWh/y
NORDIC COUNTRIES & WESTERN EUROPE (NC&WE)		
2407 MILLION €	**572.7** GWh/y	**127.3** GWh/y
SOUTHERN EUROPE (SE)		
1311 MILLION €	**945.3** GWh/y	**147.8** GWh/y
TOTAL		
5123 MILLION €	**2472.3** GWh/y	**901.1** GWh/y

Map of 3rd EUCF call beneficiaries

Figure 2:
Map of the projects selected in the 3rd call of the EU City Facility. The detailed descriptions of these projects can be found in this report, in the section titled "Intended measures by country".



Intended Measures by Country: Detailed Overview

Bulgaria

MUNICIPALITY/AUTHORITY

Smolyan

INVESTMENT SIZE

83.8

MILLION €

RES PRODUCTION

22.2

GWh/y

ENERGY SAVING

83.3

GWh/y

MAIN TARGET SECTOR

Despite the significant efforts from the Municipality in recent years, most (97%) of the public and residential buildings in Smolyan are still characterized by high energy intensity, due to both the inefficient heating systems and the length of the winter season (6 month). 90% of the non-renovated buildings have energy consumption classes E, F and G. The central goal of the project is to introduce Energy Efficiency measures that include thermal isolation of the buildings, switching to using heat pumps and PV for the energy needs with the goal to create PEBs or, if that is not possible, to build smart grids to achieve PEDs and to develop legal and technical framework to enable the inclusion of multi- and single-family homes in PEDs. The city also intent to replace its old public transport vehicles with electric based ones and build PV-powered charging stations with enough power to cover the energy needs of the new vehicles.

MAIN TARGET SECTOR

Public Buildings

MUNICIPALITY/AUTHORITY

Mizia

INVESTMENT SIZE

41.2

MILLION €

RES PRODUCTION

0.6

GWh/y

ENERGY SAVING

4.8

GWh/y

MAIN TARGET SECTOR

Public Buildings - Renovation to nearly zero energy building and energy positive buildings
Residential buildings - renovation to class A and where feasible to nearly zero energy buildings
Building integrated renewables - PV systems on public buildings - installation of PV systems mainly for covering own needs
Street lightening - Replacement of luminaries, Use of RES, Energy management - advanced LED
Innovative energy infrastructure - production, storage and distribution of green hydrogen to replace oil fuel used in transport and industry.

MAIN TARGET SECTOR

Residential Buildings

Croatia

MUNICIPALITY/AUTHORITY

City of Virovitica (CoVT)

INVESTMENT SIZE	RES PRODUCTION	ENERGY SAVING
68.2 MILLION €	**2.9** GWh/y	**41** GWh/y

MAIN TARGET SECTOR

Residential buildings

This IC will demonstrate how 0-energy neighborhoods concept and smart grid-interactive technologies can transform homes and public buildings into connected self-sufficient energy communities. The project will put the spotlight on neighborhood level green renovation of public and multifamily buildings including the RES deployment (heat pumps and PVs in public and PVs only in multifamily buildings) and “demand response” testing to round up the sustainability story. Besides, in order to reduce dependence on fossil fuels in buildings sector and to encourage shared production/consumption from renewables as well as prosumer behavior promoting responsible energy citizenship, CoVT will test the smart microgrid concept in the 0-energy renovated neighborhoods by forming the connected self-sufficient energy communities. This FIT4 55 community partnership between public authorities and citizens will be formed around shared goals and values in order to jointly lead the way to the sustainable city.

MUNICIPALITY/AUTHORITY

City of Koprivnica

INVESTMENT SIZE	RES PRODUCTION	ENERGY SAVING
71.9 MILLION €	**2** GWh/y	**19** GWh/y

MAIN TARGET SECTOR

Public Buildings

This IC will target the systematic implementation of 0-energy concepts through the district level DER and consumption of renewable energy. District scale energy renovation approach will be tested in order to speed-up the renovation works and it will be combined with the geothermal-based (GB) supply to the climate friendly neighborhoods (CFNs). The latter will serve as a test bed for planning the city’s district heating network.

To lower the operating costs for public buildings and to mobilise the private investments for energy renovation in the building sector, CoK decided to roll out the large-scale DER works in the three significant zones (1st – public and multifamily buildings, 2nd – public buildings, 3rd – university campus) with the aim to turn them into CFNs (0 – emission zones) by employing the mini GB heat plants for supplying these zones. Preliminarily analysis of geothermal potential has been performed but the technical analysis and feasibility study is to be done in this IC

Croatia

MUNICIPALITY/AUTHORITY

City of Varazdin

INVESTMENT SIZE	RES PRODUCTION	ENERGY SAVING
76.7 MILLION €	**2** GWh/y	**25.9** GWh/y

MAIN TARGET SECTOR

Considering the fact that buildings are responsible for 40 % of global energy consumption and 33 % of GHG emissions, city is planning a major green renovation wave focusing on a building sector (swimming arena, sports hall, school buildings; multifamily apartment blocks and social housing buildings). District scale energy renovation approach will be tested in order to speed-up the renovation works and to lower the costs (joint green procurement).
Moreover, in the light of a recent events on an energy market, together with the energy renovation wave strategy, city is decisive to develop plans for preparing the infrastructure for DHN employing renewables-based CHP plants. Pilot project will be prepared with the existing biomass-based CHP plant which should cover the heat needs of several public buildings and multifamily apartment blocks which will be renovated. Along with that, an innovative buildings "heat sharing network" will be tested in the self-sustained renovated building blocks.

MAIN TARGET SECTOR

Residential buildings

MUNICIPALITY/AUTHORITY

Općina Čavle

INVESTMENT SIZE	RES PRODUCTION	ENERGY SAVING
202.7 MILLION €	**20.4** GWh/y	**52** GWh/y

MAIN TARGET SECTOR

The area is on the verge of becoming an attractive year-round tourist destination. In order to preserve natural resources, it is necessary to establish an innovative transport system. In addition to decarbonization itself, the paradigm changes to a sharing economy. EVs as mobile batteries with smart charging from local RES, a sharing system and an efficient on-demand mobility system, park&ride and the net-zero CO2 last mile concepts contribute to optimizing resources, saving energy and emissions, reducing congestion and financial benefits. Being a regional link between the mountainous and coastal parts of the County and is close to a zone with numerous shopping centers, the innovative public and private infrastructure should be complementary, to create energy and transport sectors synergy. For the successful implementation of IC, the active participation of end users, who are placed at the center of the energy transition with a multidisciplinary approach to sustainability, is crucial.

MAIN TARGET SECTOR

Sustainable urban mobility

Croatia

MUNICIPALITY/AUTHORITY

City of Vrbovec

INVESTMENT SIZE

33.4
MILLION €

RES PRODUCTION

29
GWh/y

ENERGY SAVING

30
GWh/y

MAIN TARGET SECTOR

The analysis of geothermal potential in the preliminary report is based on four existing testing boreholes to depths from 203 m to 1584 m. The water temperature is 70°C at the depth of 1500m while according to the study there could be even higher temperatures in the Southwest parts of the city, up to 140 C° at the depths of 2000-3000 m. Two boreholes production and injection with estimated capacity of 25 GWh will be installed on the land owned by the city of Vrbovec. To make maximal use of available heat it will be used in cascade. Water with higher temperatures will go to industry, lower temperatures water will be utilised in the buildings and agriculture. To have low temperature heating buildings should be renovated to nZEB standard and should be equipped with district heating substations and additional PVs for electricity generation. Special heat exchange network will supply industrial and agriculture objects. The 4DH pipelines will connect different buildings/neighbourhoods.

MAIN TARGET SECTOR

District heating

Czechia

MUNICIPALITY/AUTHORITY

Žďár nad Sázavou

INVESTMENT SIZE

28.6
MILLION €

RES PRODUCTION

2
GWh/y

ENERGY SAVING

20
GWh/y

MAIN TARGET SECTOR

The summary of the planned energy measures can be found in a chart in Appendix E. Generally, the plan is to lower the energy consumption of the Town´s buildings through replacing lights by LEDs, installation of IRC regulation of heating, insulation of perimeter constructions, and building roof PVPPs. A complex reconstruction of the Ice Arena is an independent item, entered separately in Appendix E.

Complex reconstruction of the Ice Arena, the building of the former Magistrate, modernization of the Kindergarden, large-scale installation of PVPP on municipal roofs, the battery for public light.

Separately to technology measures are soft measures as education and technical advisory for citizens – see the chapter 4 above and for small villages nearby – see the chapter 5.

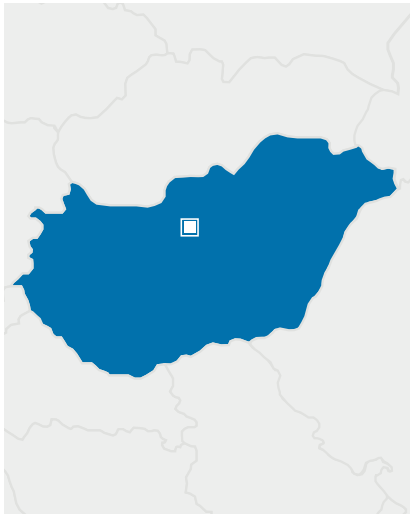
MAIN TARGET SECTOR

Building integrated reneweables

Hungary

MUNICIPALITY/AUTHORITY

Budapest Főváros VIII. kerület Józsefváros



INVESTMENT SIZE

107.7
MILLION €

RES PRODUCTION

17.4
GWh/y

ENERGY SAVING

51
GWh/y

MAIN TARGET SECTOR

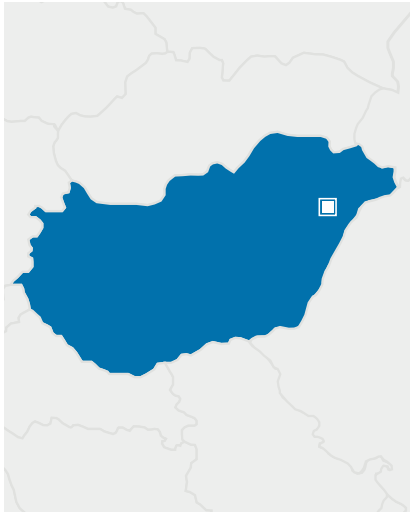
Our investment concept focuses on three major areas in two districts: 1) energy efficiency of buildings 2) sustainable transport 3) renewable energy production. The largest energy savings are expected to come from energy efficiency renovation of municipality-owned institutions, apartment buildings, and selected multi-apartment buildings. The planned investments will include the replacement of windows, roof insulation and heating system upgrades, as well as facade insulation where possible. Measures will also include lighting upgrades in municipal buildings and a household appliance replacement program for citizens. In addition to municipal properties, we also want to involve condominiums and certain companies in renewable energy production by installing solar panels and setting up energy communities. In the field of transport, the main priority is to replace municipal vehicles with electric ones and to continue the traffic calming and cyclist-friendly improvements already underway.

MAIN TARGET SECTOR

Residential buildings

MUNICIPALITY/AUTHORITY

Municipality of Debrecen



INVESTMENT SIZE

71.9
MILLION €

RES PRODUCTION

27.7
GWh/y

ENERGY SAVING

33.2
GWh/y

MAIN TARGET SECTOR

The expected total energy savings resulting from the energy efficient refurbishment (i.e. adding thermal insulation and modern control and measurement) of the 7 808 dwellings supplied by district heating (DH) is 29 GWh/yr. The replacement of undersized heat exchangers and thus reducing temperature level from 127/70 °C to 117/65 °C in the DH network will add 4 GWh/yr to the savings. For the extension of renewable energy utilisation, a new RDF fired hot water boiler is planned. This can feed 15 GWh/yr heat in the DH system using the fuel produced by the local waste sorting plant, resulting reduction in imported fossil fuel demand and GHG emission. It yields further saving of 0.2 GWh/yr by avoiding the road transport of the RDF. Using geothermal heat for heating the sewage sludge at the wastewater treatment plant will produce 12.7 GWh/yr green energy. This subproject allows the feeding in the heat currently used on site the DH network reducing the natural gas-based heat production.

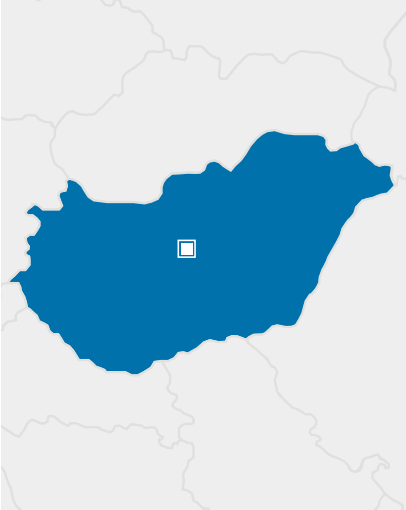
MAIN TARGET SECTOR

District heating

Hungary

MUNICIPALITY/AUTHORITY

Dunaújváros Megyei Jogú Város



INVESTMENT SIZE

127.3
MILLION €

RES PRODUCTION

19.8
GWh/y

ENERGY SAVING

31.6
GWh/y

MAIN TARGET SECTOR

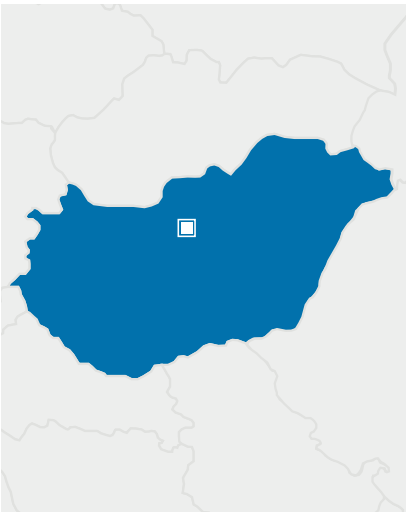
The city will analyse various investment possibilities to produce renewable energy, such as installing photovoltaic panels. The targeted buildings are mostly public buildings owned by the Municipality (city hall, schools, kindergartens, cultural centres, theatre, other institutions, sports facilities, etc.). However, some investments address prefabricated houses, the district heating of 5000 apartments, street lighting network.
The primary investment option is improving some buildings' insulation and lighting systems and upgrading their heating (and cooling) systems, mainly using heat pumps. The replacement of outdated radiators and the renovation of heating pipes and heat exchangers are also planned.
Solar panels are envisaged on the roofs of public buildings (flat roofs and pitched roofs facing SE-SW). In addition, expanding an existing biogas plant and using Danube's kinetic hydroelectricity through floating turbines would significantly contribute to producing renewable energy.

MAIN TARGET SECTOR

Public Buildings

MUNICIPALITY/AUTHORITY

Local Government & Municipality of District 11 of Budapest, Újbuda



INVESTMENT SIZE

20.6
MILLION €

RES PRODUCTION

3.9
GWh/y

ENERGY SAVING

11.2
GWh/y

MAIN TARGET SECTOR

The investment concept will foresee energy saving measures and RE generation measures with ambitious goals in CO2 reduction (3222 t CO2 eq / year) as follows:

- Insulating the exterior walls, ceilings and basements
- Replacing windows and doors
- Replacing gas convectors with gas boilers
- Installation of solar panels on roofs
- Replacing pipelines of the district heating system.

In the implementation phase of the concept, a local energy community will be prepared supported by a SMART monitoring and management system. The energy community is to ensure that the surplus of the generated solar energy will be consumed locally. This way the concept aims to decrease the dependence on the network of the electricity supplier in longer term. The interventions worked out during development phase of the concept will be bundled to apply either for non-recoverable EU grants (especially for the public buildings) or alternative financing instruments such as ELENA facility, ESCO financing or green loans.

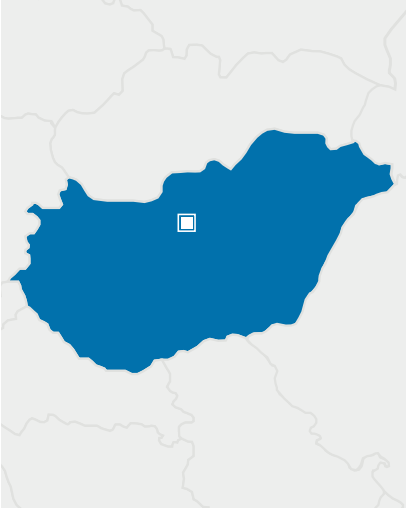
MAIN TARGET SECTOR

Public Buildings

Hungary

MUNICIPALITY/AUTHORITY

Budapest Főváros IX. Kerület Ferencváros Önkormányzata



INVESTMENT SIZE

35.3

MILLION €

RES PRODUCTION

23

GWh/y

ENERGY SAVING

86

GWh/y

MAIN TARGET SECTOR

- Energy efficiency improvements to buildings: installation of thermal insulation, replacement of louvres, modernisation of building services equipment
- Developing renewable energy sources: installing solar panels where possible
- Creating an energy efficiency improvement document for residential buildings to facilitate the planning of energy improvements and the efficient use of resources.

MAIN TARGET SECTOR

Public Buildings

MUNICIPALITY/AUTHORITY

Alsómocsolád

INVESTMENT SIZE

10.7

MILLION €

RES PRODUCTION

1

GWh/y

ENERGY SAVING

16

GWh/y

MAIN TARGET SECTOR

There are 64 public buildinges owned by the 10 municipalities of the consortium which need window and door replacement as well as facade / ceiling / roof / attic / basement insulation. Solar cells are suggested to install on 58 municipal buildings of the 10 municipality. Energy renovation of residential buildings is necessary to reduce energy consumption by replacing boilers to more effective condensing boiler, even with smart meters and by insulation. The solution for local energy production can be the biomass with the energy use of local bio- and green wastes. The territory of fishponds of Alsómocsolád can be suitable for the installation of solar cells. The procurement of electric public buses and the replacement of micro area- and village caretaker services buses to electric ones to serve all 10 municipalities of the consortium are recommended. It must be examined how industrial residual heat can be reused - used for example domestic purposes.

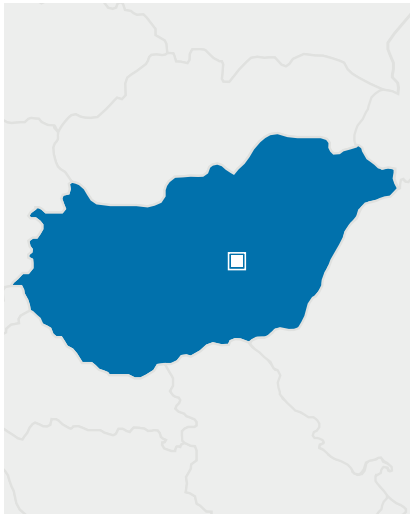
MAIN TARGET SECTOR

Public Buildings

Hungary

MUNICIPALITY/AUTHORITY

Cegléd Város Önkormányzata



INVESTMENT SIZE

39

MILLION €

RES PRODUCTION

3

GWh/y

ENERGY SAVING

7

GWh/y

MAIN TARGET SECTOR

General energy goals:

- Support for the modernization of energy produced by private and public owners, economic actors through special programs technical and financial support by government programs.
- Preparation of the procurement of low CO2 urban electric vehicle fleet.
- Local regulation to support the proposed goals and develop new ones.
- Local energy production from renewable energy sources.
- Creating an effective system for observation and regular monitoring of results.
- Realization of an investment concept for application for loans to specialized banks for instruments applicable to energy efficiency, government funds, structural funds.

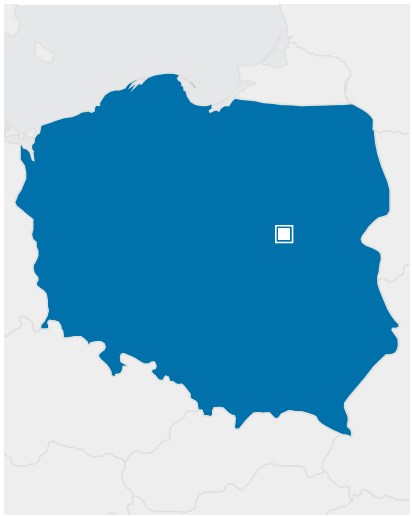
MAIN TARGET SECTOR

Public Buildings

Poland

MUNICIPALITY/AUTHORITY

Warsaw



INVESTMENT SIZE

34

MILLION €

RES PRODUCTION

0

GWh/y

ENERGY SAVING

213.7

GWh/y

MAIN TARGET SECTOR

The planned investment will cover: monitoring the environment outside the building and indoor (temperature, pressure, humidity, air quality, sunlight, sound pressure); measurement of the consumption of electricity, water, thermal energy, RES production; control of the heating and electricity consumption, air quality, ventilation; protection against flooding and fire; provision of indoor communication; display and store of the data; registration of cameras and intercoms. The system will take care of appropriate conditions in individual rooms, taking into account both internal / external conditions. It is planned to prepare mechanisms for monitoring energy measurements, search and automatic monitoring of exceedances or deviations from the norm, which will allow to obtain an image of how energy is used, where savings can be found and it will be possible to monitor the condition of the rooms that affects the efficiency of users, as well as their health in the longer term.

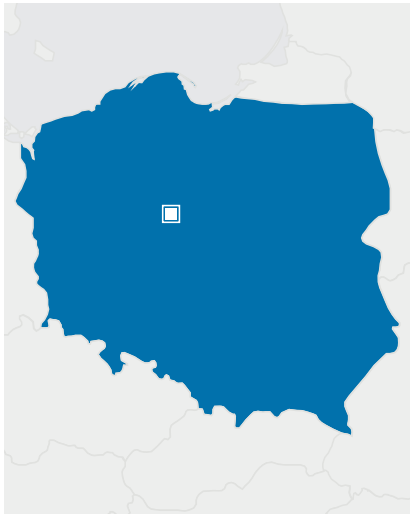
MAIN TARGET SECTOR

Public Buildings

Poland

MUNICIPALITY/AUTHORITY

Inowrocław



INVESTMENT SIZE

175.1

MILLION €

RES PRODUCTION

45.5

GWh/y

ENERGY SAVING

68.5

GWh/y

MAIN TARGET SECTOR

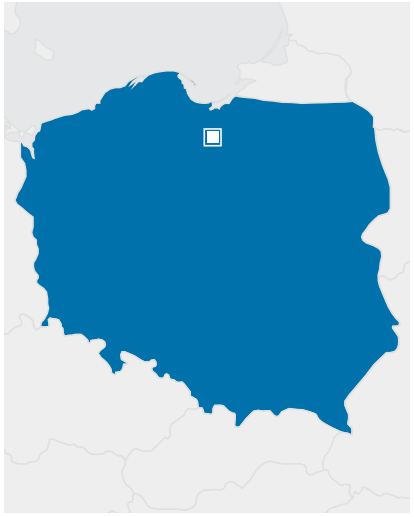
- Thermal modernization of buildings: public ones in the resources of town and county, multi-family residential ones in the resources of town, multi-family residential ones in the resources of housing associations and communities, health service and health resort ones,
- Integration of photovoltaic installations with public buildings,
- Introduction of intelligent measuring system, monitoring and energy management,
- Development of energy community associating municipal companies (energy cluster),
- Construction of installation for heat recovery from treated sewage at the area of municipal sewage treatment plant in order to produce heat for the needs of heating system,
- Construction of large-scale photovoltaic installation to satisfy the needs of planned heat pumps, and in case of temporary surplus in production cooperation with planned electro-energetic network for the sake of energy community.

MAIN TARGET SECTOR

Public Buildings

MUNICIPALITY/AUTHORITY

Dzierzgoń Municipality



INVESTMENT SIZE

14.4

MILLION €

RES PRODUCTION

1

GWh/y

ENERGY SAVING

18

GWh/y

MAIN TARGET SECTOR

The investment project plans to use these technologies:

- agrovoltaic installations
- energy storage system
- efficient smart lighting system based on LED lamps
- smart energy metering
- efficient power grids
- energy consumption optimalization system for public entities

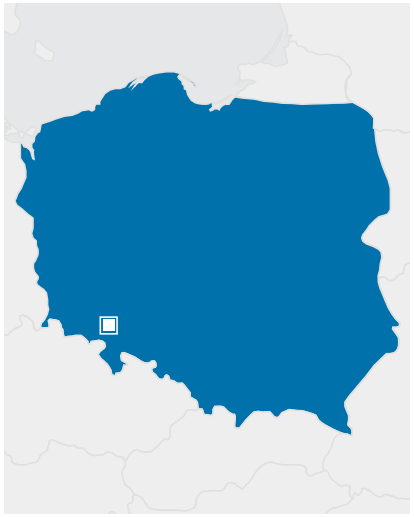
MAIN TARGET SECTOR

Public Buildings

Poland

MUNICIPALITY/AUTHORITY

Gmina Wałbrzych



INVESTMENT SIZE

62.8
MILLION €

RES PRODUCTION

2.6
GWh/y

ENERGY SAVING

5.3
GWh/y

MAIN TARGET SECTOR

Path 1 – 95 Communal Multifamily and Public Utility Buildings (MFB + PUB):

- Deep modernization (50% reduction Efin thorough sealing improvement & building envelope insulation, new HVAC systems, coal source replacement, shift to RES power (electrical heating systems, incl heat pumps) supported by energy storage systems.

Path 2 – 13 PUBs:

- Deep renovation without heating source replacement - action aimed at low energy performance buildings heated by gas fuel systems

Path 3 – 3 PUBs:

- Heating source replacement with limited thermo-renovation

Virtual Power Plant (VPP) - 20 solar community PV systems of total 1,58 MW power; 20 energy storage systems of total 1 MWh capacity

Energy efficient communal lighting - replacement of existing 2 807 sodium lamps for LED lights with an estimated 30% reduction in energy consumption and powered from VPP

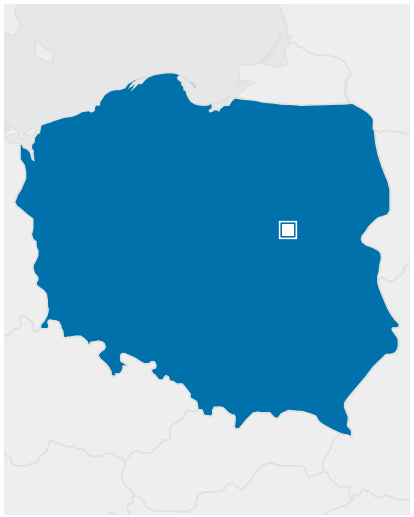
Decarbonised power supply to 7 leisure, sports and recreation municipal facilities by energy generated through VPP

MAIN TARGET SECTOR

Residential buildings

MUNICIPALITY/AUTHORITY

Gmina Wołomin



INVESTMENT SIZE

15.8
MILLION €

RES PRODUCTION

29
GWh/y

ENERGY SAVING

91
GWh/y

MAIN TARGET SECTOR

The concept of energy security in Wołomin was based on a number of activities carried out by the city hall and municipal companies (ZEC and PWiK). The area related to the optimization of heat energy distribution and production through the modernization of the heating network, the introduction of biomass co-firing and the modernization of coal-fired CHP boilers will be carried out by the municipal heating company. At the same time, the company, together with the municipal authorities, will be responsible for the use of geothermal water by means of heat pumps. Miejskie Przedsiębiorstwo Wodociągów i Kanalizacji will build a part with a photovoltaic farm. The companies will also provide their own financial contribution at the project implementation stage. The component related to optimization in public utility buildings and residents' homes will be implemented by the Wołomin City Hall, and the financial contribution will come from the city budget and the participants of the task.

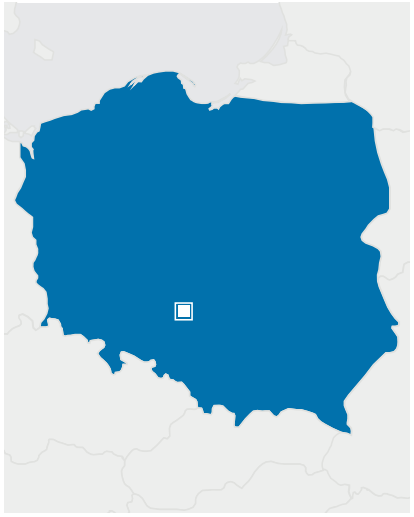
MAIN TARGET SECTOR

Public Buildings

Poland

MUNICIPALITY/AUTHORITY

Leśnicko-Ujazdowski Energy Cluster



INVESTMENT SIZE	RES PRODUCTION	ENERGY SAVING
10 MILLION €	**2** GWh/y	**21.9** GWh/y

MAIN TARGET SECTOR

The intended technology measures to be financed are as follows:

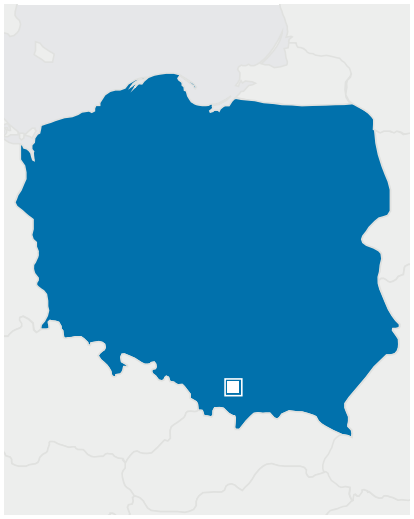
- photovoltaic installations on municipal buildings and ground-based photovoltaic power plants,
- energy storage system,
- smart grids connections between stakeholders and energy storage connected to energy,
- energy consumption optimalization system for public entities and entrepreneurs,
- a system of cascaded heat pumps connected to energy storage powered by photovoltaic installations
- measurement of public buildings and local entrepreneurs with two-way meters for remote reading of electricity and heat production and consumption.

MAIN TARGET SECTOR

District heating

MUNICIPALITY/AUTHORITY

Miasto Racibórz



INVESTMENT SIZE	RES PRODUCTION	ENERGY SAVING
48.2 MILLION €	**1** GWh/y	**15** GWh/y

MAIN TARGET SECTOR

The investment project plans to use these technologies:

- gas cogeneration
- energy storage system
- efficient smart lighting system based on LED lamps
- smart energy metering
- efficient power grids
- energy consumption optimalization system for public entities
- building thermomodernization

MAIN TARGET SECTOR

Public Buildings

Poland

MUNICIPALITY/AUTHORITY

Rejowiec Fabryczny

INVESTMENT SIZE

3.2

MILLION €

RES PRODUCTION

2

GWh/y

ENERGY SAVING

3

GWh/y

MAIN TARGET SECTOR

Revitalization of the post-industrial area will result in preparing a recreation center for local residents and tourists, including filling-in of the excavation site with gangue. This will also include the possibility of additional quality of life investments (e.g., charging stations). New energy sources will supply it with clean energy both during investment and running. Project will cover:

- Power generation - adaptation of part of the newly freed post-industrial areas into PV farms(cca 1GWh of energy per year)
- Public lighting - illuminating roads and paths with LED lamps
- Geothermal heat pumps - for public buildings and residential areas
- New types of energy infrastructure/demand response - deriving a part of the energy to the local energy grid for local communities.

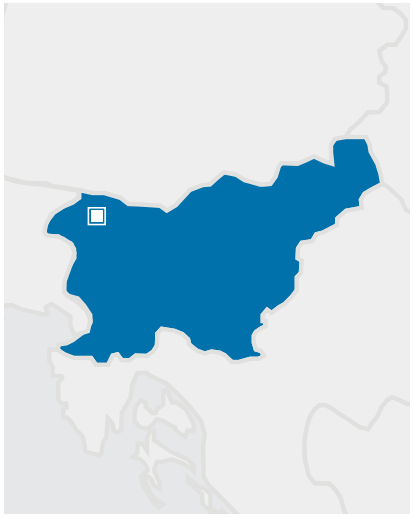
MAIN TARGET SECTOR

Public Buildings

Slovenia

MUNICIPALITY/AUTHORITY

Municipality of Kranj



INVESTMENT SIZE

22.9
MILLION €

RES PRODUCTION

6
GWh/y

ENERGY SAVING

6
GWh/y

MAIN TARGET SECTOR

PUBLIC BUILDINGS
The following measures are envisaged to increase energy efficiency in 9 public buildings:

- Users' awareness raising of energy efficiency, thermal insulation of the building envelope (12,545 m2; 150 mm insulation thickness) and replacement of 10,188 m2 windows and doors (U-value 1,1).

BUILDING INTEGRATED RENEWABLES
Solar PV installation on 15 public buildings:

- New solar roof-top PV installation 3,150 kWp.

REPLACEMENT OF OLD HEATING BOILERS WITH RES IN 8 PUBLIC BUILDINGS
With replacement of old heating oil and natural gas boilers, we want to switch from fossil fuel generated heat to more energy efficient renewable systems in the form of heat pumps (water-source or geothermal) technology, with total capacity 1,939 kW.

DISTRICT HEATING SYSTEM
Construction of a new wood biomass DHS system "Zlato Polje", with 4MW capacity, that will replace old natural gas boilers and Renovation of the existing DHS system "Planina", to reduce heat pipeline losses (3,7km long).

MAIN TARGET SECTOR

Public Buildings

Belgium

MUNICIPALITY/AUTHORITY

Zottegem

INVESTMENT SIZE

91.6

MILLION €

RES PRODUCTION

4.3

GWh/y

ENERGY SAVING

6.4

GWh/y

MAIN TARGET SECTOR

The City of Zottegem aims to obtain a zero energy public building stock by 2050 (and to -55% CO2 emissions by 2030). To this end, their 37 buildings, ranging from office buildings to public meeting centres for inhabitants, a residential care centre, schools and sports facilities, need to be insulated (including window replacement) and their building installations need to be replaced by efficient non-fossil ones. The engineering analysis of this project will uncover the required measures for each of the buildings. The financial analysis will reveal how these measures can financed (partially the city's budget, partially the budget that is recuperated by the energy savings, possibly the profit of selling some of the buildings). A timeline will be set up, specifying which measure needs to be implemented in which year and the annual budget the city has to foresee.

MAIN TARGET SECTOR

Public Buildings

MUNICIPALITY/AUTHORITY

City of Bruges

INVESTMENT SIZE

152.2

MILLION €

RES PRODUCTION

10.3

GWh/y

ENERGY SAVING

17.7

GWh/y

MAIN TARGET SECTOR

The short term goal is to realise renovation of the dwellings/ buildings and implement district heating in a specific neighbourhood between IVBO and the city centre. This project will be an absolute game changer in people's minds and will be used to accelerate the development of a heating network in 4 clusters in city centre after renovation (long term): a city with a lot of UNESCO heritage, small streets, full underground, a lot of worker's houses, city and public buildings which are badly insulated… Regarding to the short term, we target a part of Christus Koning, a neighbourhood of 19th and beginning of the 20th century with (and a surface of 101,1ha). Apart from private dwellings, there is a swimming pool, two school buildings, Carrefour market, fitness centre, building of the national employment office and a lot of small retailers. In this way the city shows the good example, showcasing that heat net developed in historic densely built areas are also possible.

MAIN TARGET SECTOR

District heating

Belgium

MUNICIPALITY/AUTHORITY

Mortsel

INVESTMENT SIZE

9.9

MILLION €

RES PRODUCTION

0

GWh/y

ENERGY SAVING

5

GWh/y

MAIN TARGET SECTOR

The city of Mortsel has ambitions to lower its CO2-emissions of building heating by applying alternatives for fossil heating such as citizen owned DHN on waste and renewable heat. Therefor it supported the district heating grid operator Warmte Verzilverd to build and operate their DHN using industrial waste heat from an industrial site in Mortsel.

For now only a part of the capacity of the heat source is utilized. It is estimated that there is additional capacity of at least 5000 MWh of heat per year. The heat is captured from the chimney of high temperature processes and would otherwise be dissipated in the air. To expand the DHN further investments in distribution infrastructure (piping, pumps, satellite units, …) are needed.

5000 MWh of heat equals the annual energy consumption for heating of about 350 households.

MAIN TARGET SECTOR

District heating

Denmark

MUNICIPALITY/AUTHORITY

Frederikssund

INVESTMENT SIZE

92

MILLION €

RES PRODUCTION

51

GWh/y

ENERGY SAVING

94

GWh/y

MAIN TARGET SECTOR

The investment concept will include at least 5 technological themes: energy efficiency optimisation, electrification, district heating (DH), sustainable mobility, renewable energy. In industry, measures include energy efficiency in production, electrification of processes replacing natural gas and utilisation of waste heat to safeguard year-round utilisation of waste heat to reduce energy consumption for cooling and as input to district heating. In DH, measures include expanding the DH network, hence replacing the heating source for households from natural gas to efficient DH and utilising waste heat from industry to DH, hence replacing part of the natural gas driven heat production. Sustainable mobility involves citizens in the transition by installing charging stands for electric cars, electric bicycles on subscription, and charging stands for private electric bicycles to encourage green transportation. Renewable energy includes among others solar plants, wind, heat pumpe and ATES.

MAIN TARGET SECTOR

District heating

Denmark

MUNICIPALITY/AUTHORITY

Silkeborg

INVESTMENT SIZE

35.4

MILLION €

RES PRODUCTION

0

GWh/y

ENERGY SAVING

186

GWh/y

MAIN TARGET SECTOR

TERMUN+ IC aims to accelerate the transition from fossil heating to heat pumps in TS whit local SP but will not consist of one technical solution for all TS. TERMUN+ IC works across the different technically solutions possible for establishing a TS. (cf. Annex4)
A thermometer is a supply network that transports thermal energy from different types of energy sources. The network runs across many homes/buildings with a typical temperature of between 0 and 10 degrees. (cf. Annex4 Description of the technology)
Investment needed to build a TS contains but are not limited to:

- Tendering and analysis of potential
- Pipes and pumps in a horizontal og vertical system for the brine system.
- Heat pumps in private houses sizes is individually calculated
- Service and billing systems
- Solar parks

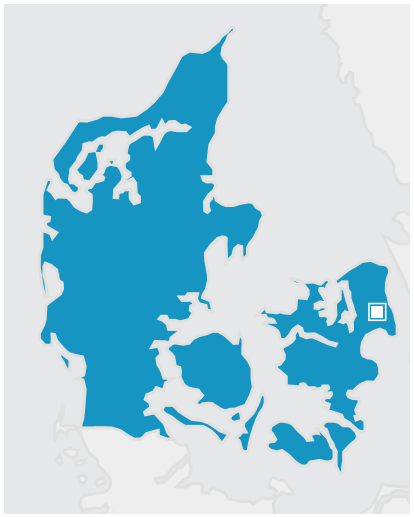
The TS can be in combination with geothermal heat pumps and excess heat from local factory's' being stakeholders in the system (cf. Annex2) analysis of potential for local heat sources has a great impact.

MAIN TARGET SECTOR

District heating

MUNICIPALITY/AUTHORITY

Furesø



INVESTMENT SIZE

32.9

MILLION €

RES PRODUCTION

1.3

GWh/y

ENERGY SAVING

4.62

GWh/y

MAIN TARGET SECTOR

The project is based on previously identified energy saving potentials in the social housing sector and the main actions of the project are:

- update of previous screenings
- re-visit the housing associations to identify the status since the previous screening
- identification of new potentials and calculation of savings for new measures and update of savings for previously identified measures, investments and payback times
- preparation of a plan for the implementation of the energy saving measures and local RES production of each housing association.
- presentation at meetings with housing associations and departmental interest groups and residents' democracy in those associations

MAIN TARGET SECTOR

Residential buildings

Netherlands

MUNICIPALITY/AUTHORITY

Breda

INVESTMENT SIZE

84.3

MILLION €

RES PRODUCTION

38

GWh/y

ENERGY SAVING

99.5

GWh/y

MAIN TARGET SECTOR

Intended measures comprise the establishment of the EHB to provide heat to one part of the city Breda. The technical scope includes:

- Heat source extraction WWTP
- Central system, large scale, high temperature heat pump
- Tracker based solar-PV to increase sustainability of project (electricity supply)
- Internal heat network system to connect several systems
- External heat network system to connect with main heat network Breda
- High temperature, seasonal, underground storage and daily storage/buffer
- E-boiler with smart interaction electricity grid
- Smart digital controls irt WWTP
- Electricity connection
- Pumps, filters, civil works
- Monitoring and control systems

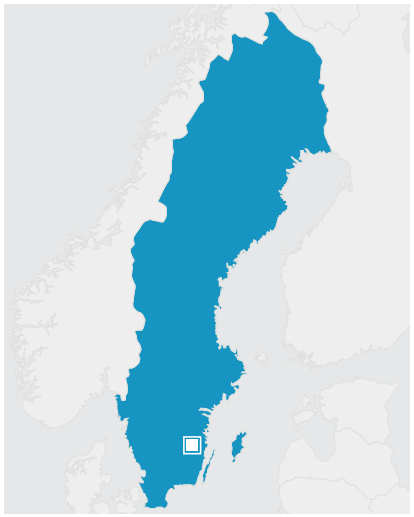
MAIN TARGET SECTOR

District heating

Sweden

MUNICIPALITY/AUTHORITY

Västervik



INVESTMENT SIZE

40.4

MILLION €

RES PRODUCTION

6.9

GWh/y

ENERGY SAVING

16.5

GWh/y

MAIN TARGET SECTOR

Energy savings in existing public and residential buildings such as recycling of ventilation air, additional insulation of attics and facades, replacement of windows, replacement of older light sources with LEDs. Exclusively renewable electricity is purchased. Most of the properties are heated with fossil free district heating, heat pumps and bio pellets, some of the properties have fossil oil boilers to phase out. Other planned investments:

- Carbon dioxide storage - wooden constructions in new public and residential buildings - See document below.
- Biochar as a carbon sink in rural and urban cultivation
- Replacement of fossil to electricity operation of municipality owned maritime traffic
- Expansion of charging infrastructure for electric cars
- Converting streetlights from high pressure sodium to LED
- Energy efficiency and phased out fossil oil boilers in NGO buildings
- Solar cell parks
- Solar cell on roofs
- Climate optimization of sports facilities/halls (solar, heat recovery)

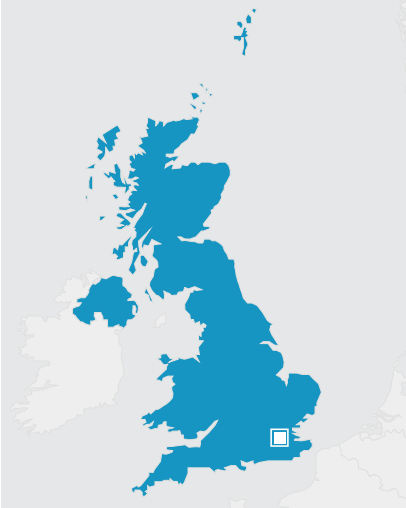
MAIN TARGET SECTOR

Public Buildings

U.K.

MUNICIPALITY/AUTHORITY

London Borough of Hackney



INVESTMENT SIZE

1.87

BILLION €

RES PRODUCTION

15.5

GWh/y

ENERGY SAVING

143

GWh/y

MAIN TARGET SECTOR

Technology measures proposed for the retrofit include:

- Improvement of the current thermal efficiency through the insulation of external walls and roofs and glazing/ replacement of windows and doors to the meet the London Energy Transformation Initiative (LETI) best practice retrofit standards (Walls – 0.18, Windows – 1.2(min), Roof – 0.12 W/m2K).
- Installation of 'fossil fuel' free heat source such as air and ground source heat pumps, photovoltaic panels, and solar thermal hot water for all residents, targeting an energy use intensity of 50 kWh/m2/year, as compared to the current average energy use intensity of 71.2 kWh/m2/year seen in the buildings.
- Possible installation of mechanical ventilation with heat recovery (MVHR)
- On completion, all dwellings will be at least EPC B (the London Councils standards) and ideally A (+) rated.

MAIN TARGET SECTOR

Residential buildings

Greece

MUNICIPALITY/AUTHORITY

Kozani

INVESTMENT SIZE

413.8

MILLION €

RES PRODUCTION

0

GWh/y

ENERGY SAVING

252.3

GWh/y

MAIN TARGET SECTOR

In the Municipality of Kozani (MoK) there are around 18.300 private residential buildings, mainly built before 2000, having poor energy efficiency and therefore high energy needs. Their large number comparing to the other buildings, explains the large potential of this sector. Thermal insulation of walls, floors and ceilings, replacement of windows with double glazed ones, installation of solar thermals and upgrade of their heating systems are the main actions to be followed minimizing buildings' energy needs to up to 40%

Pedestrian mobility actions should be the stepping stone to achieve sustainable mobility. Moreover, to achieve this goal, the municipal fleet with its around 170 vehicles, the public transportation and private vehicles in the MoK based on fossil fuels, should be replaced with new more effective ones, battery electric and fuel cell electric ones. A concrete plan for this replacement and also the upgrade of the infrastructure to support this change is required.

MAIN TARGET SECTOR

Sustainable urban mobility

MUNICIPALITY/AUTHORITY

Korydallos

INVESTMENT SIZE

20

MILLION €

RES PRODUCTION

2

GWh/y

ENERGY SAVING

4.4

GWh/y

MAIN TARGET SECTOR

The investment concept focuses on upgrading the municipal building stock and the street lighting network in the Municipality of Korydallos including installation of building-scale renewables mainly at schools. The following interventions will be considered:

- Buildings: Thermal insulation of envelope, heat pumps, thermal insulation of systems for the distribution of heat within the buildings, upgrade of lighting system, building management systems
- Renewables: Installation of solar panels on the rooftops of buildings
- LED bulbs in street lighting

The interventions above are expected to lead to energy savings that are more than 70% of the current energy use contributing at the same type to the electrification of the building stock and moving towards independence from fossil fuels. Moreover, the city has allocated 1,5 million € through the funding of the development coalition of Western Attica Municipalities for energy upgrade of specific residential buildings.

MAIN TARGET SECTOR

Public Buildings

Greece

MUNICIPALITY/AUTHORITY

Nea Smyrni

INVESTMENT SIZE

14.5

MILLION €

RES PRODUCTION

1.5

GWh/y

ENERGY SAVING

2.9

GWh/y

MAIN TARGET SECTOR

Public Buildings

The investment concept focuses on the retrofit of municipal buildings including integration of building-scale renewables, upgrade of public lighting and electrification of the municipal fleet. The following interventions will be considered:

- Buildings: thermal insulation of the envelope of the buildings (walls, roof, windows), energy upgrade of HVAC systems and lighting equipment, replacement of equipment at schools with energy efficient ones, installation of solar PV on building rooftops
- Public lighting: upgrade with LEDs and automations for controlling of its operation
- Municipal fleet: electric vehicles and charging points

The measures are expected to lead to energy savings of up to 55% in total without taking into account building-integrated renewables.

Italy

MUNICIPALITY/AUTHORITY

Bologna

INVESTMENT SIZE

272.4

MILLION €

RES PRODUCTION

11

GWh/y

ENERGY SAVING

292

GWh/y

MAIN TARGET SECTOR

Energy efficiency and renewable sources

The technology measures to be financed include:

- Substitution of natural gas boilers and burners with heat pumps: in most of applications related with SFs, the temperature of heat supplied to the end-users is relatively low (under 40°C). Their substitution with heat pumps can produce a reduction in energy consumption with a ratio 3.0 as a minimum. The efficiency can be further increased if the heat sink is a geothermal source, and if the heat pump is powered by renewable energy.
- Substitution of existing lighting system with led and smart lighting system: the adoption of led lights and of smart sensors can reduce power consumption and optimize the use of lighting systems.
- Installation of PV panels: SFs often offer free areas for installation of PV panels (large buildings' roof and parking area). Due to seasonal nature of some SFs, the realization of PV plants may be not profitable. Therefore, the integration inside renewable energy communities, should be evaluated.

Italy

MUNICIPALITY/AUTHORITY

Federazione dei Comuni del Camposampierese

INVESTMENT SIZE

18.4

MILLION €

RES PRODUCTION

1

GWh/y

ENERGY SAVING

7

GWh/y

MAIN TARGET SECTOR

Targeted schools & annexed gyms, daily used by citizens, are uniform buildings highly representing the local governments role towards sustainability for the well-being of next generations. These buildings have poor energy efficiency classes, poor comfort and safety and negative economical impact in their management. Intended technology measures include energy efficiency retrofitting & safety measures to reduce energy consumption (& GHG emissions), improve comfort & safety deploying innovative technologies to aim at NZEB buildings going right in the direction of REPowerEU avoiding gas use and contributing to green transition. Technology measures include improved insulation of both walls and roofs, double glazing, thermal plants retrofitting, efficient lighting systems installation, heat pumps & PV plants installation to obtain gas free buildings used mainly while electricity from PV is produced. Innovative HVAC systems will contribute to energy efficiency and infections prevention.

MAIN TARGET SECTOR

Public Buildings

MUNICIPALITY/AUTHORITY

Union of Bassa Romagna Municipalities

INVESTMENT SIZE

23.4

MILLION €

RES PRODUCTION

1.9

GWh/y

ENERGY SAVING

4

GWh/y

MAIN TARGET SECTOR

PV systems will be installed and integrated in public buildings with related storage and smart devices participating in RECs entities to share the electricity produced. In each municipality 2 public buildings will be grouped to perform deep retrofit interventions and PV installation, for a total of 16 public buildings in the UBR.

The energy efficiency measures in public buildings: retrofitting interventions such as thermal insulation, windows replacement, heating system/HVAC revamping and internal lighting substitution are also foreseen in the same 16 public buildings.

Sustainable urban mobility: 2 e-shelters charging stations for EVs will be installed in each public building, 32 overall, fed in by the PV plants + storage installed.

Innovative energy infrastructure: 1 PV Energy Park with 1MWp installed in the UBR area.

The technology measures adopted within the technical assistance are aligned with the new European Investment Bank energy lending policy, adopted on Nov. 2019.

MAIN TARGET SECTOR

Public Buildings

Italy

MUNICIPALITY/AUTHORITY

Comune di Capannoli

INVESTMENT SIZE

17.4
MILLION €

RES PRODUCTION

2.7
GWh/y

ENERGY SAVING

4.8
GWh/y

MAIN TARGET SECTOR

The investment plan (IP) includes the following technological measures:

- photovoltaic systems to be placed on land and public buildings
- energy storage
- columns for charging electric vehicles (cars, bikes, scooters), to be placed on the bike paths and/or car parks)
- monitoring and data collection systems (IoT), software platforms for the control and management of energy exchanges necessary for the creation of a Smart Grid within the Renewable Energy Community, AI algorithms, blockchain platform
- electric vehicles for the renewal of the municipal car fleet
- efficient lighting systems (for houses, public buildings, tertiary and productive sectors buildings)
- efficient heating and cooling systems (for houses, public buildings, tertiary and productive sectors buildings)

MAIN TARGET SECTOR

Smart Grids

MUNICIPALITY/AUTHORITY

Unione Terre Di Castelli

INVESTMENT SIZE

28.5
MILLION €

RES PRODUCTION

4.3
GWh/y

ENERGY SAVING

5.3
GWh/y

MAIN TARGET SECTOR

PV systems will be installed and integrated in public buildings with related storage and smart devices participating in RECs entities to share the electricity produced. In each municipality 5 public buildings will be grouped to perform deep retrofit interventions and PV installation, for a total of 40 public buildings in the ULC.

The energy efficiency measures in public buildings: retrofitting interventions such as thermal insulation, windows replacement, heating system/HVAC revamping and internal lighting substitution are also foreseen in the same 40 public buildings.

Sustainable urban mobility: 2 e-shelters charging stations for EVs will be installed in each building, 80 overall, fed in by the PV plants plus storage installed in the public buildings.

The technology measures adopted within the technical assistance are aligned with the new European Investment Bank energy lending policy, adopted on Nov. 2019.

MAIN TARGET SECTOR

Public Buildings

Italy

MUNICIPALITY/AUTHORITY

Valle del Chiampo

INVESTMENT SIZE

12.2
MILLION €

RES PRODUCTION

0.1
GWh/y

ENERGY SAVING

7.9
GWh/y

MAIN TARGET SECTOR

- Movement matrix: analysis of commuting movements. The source / destination matrix will be used to develop an algorithm for the digital service
- Urban analysis: identification of the main destinations
- Architectural and engineering analysis of the existing network: improvement of the existing network, to increase the number of users
- Improvement of the existing cycle-pedestrian infrastructure: integration, expansion and interconnection of the existing cycle-pedestrian network
- Prototype of the sharing module: easy assembly / disassembly, with technologies for the production of sustainable energy and with access via digital codes.
- Online service: IT support optimized based on the characteristics of the movement matrix and urban analysis
- Business model, legal, administrative and insurance analysis: the business model is fundamental for developing a sustainable sharing model in low-density areas. The analysis will remove legal, administrative and insurance bottlenecks.

MAIN TARGET SECTOR

Sustainable urban mobility

MUNICIPALITY/AUTHORITY

Comune di Castellammare di Stabia

INVESTMENT SIZE

7.2
MILLION €

RES PRODUCTION

1
GWh/y

ENERGY SAVING

29
GWh/y

MAIN TARGET SECTOR

The measures involved in the investment concept are the following:

- Set up of the Open Data platform: development of interface (website and/or app) designed to make the most of public transport services (electric small buses, public transport services, car and bike sharing services)
- Planning booking and paying for demand responsive services within the platform.
- Integration of the designed platform in the portal managed by the Ministry of Cultural Heritage https://grandepompei.beniculturali.it. Currently, the portal hosts information on local touristic destinations, but, as such, it does not allow to share information on sustainable mobility, transport services and timetables.
- Installation of 17 solar recharging points for shared vehicles.
- This concept supports the management of the itineraries, inspired by a concept of flexibility, allowing the modification and implementation of the routes over time, considering current and future interventions planned by the Strategic Plan.

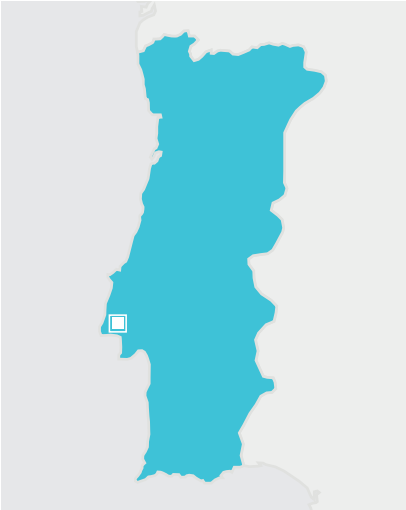
MAIN TARGET SECTOR

Others - Smart Cities: digital platform for multimodal integration

Portugal

MUNICIPALITY/AUTHORITY

Municipality of Almada



INVESTMENT SIZE

122.4

MILLION €

RES PRODUCTION

28.5

GWh/y

ENERGY SAVING

29

GWh/y

MAIN TARGET SECTOR

Residential buildings

The investment concept will study the implementation of energy efficiency and renewable energy production measures. The measures include:

A. Energy Efficiency

- Insulation (external walls, roofs and windows refurbishment), which can reduce the heat loss in buildings in cold weather, and reduce a heat surplus in warmer weather, through the implementation of several layers of materials with high thermal resistance.
- Optimization of Climatization and Sanitary Hot Water (replacement of less efficient equipment with heat pumps for hot water and space heating and cooling. Heat pumps are the most efficient alternative to fuel, oil and electrical systems, and the efficiency rate is able to go up as high as 300%.
- Lighting (Replacement of LED lighting and implementation of automatic lighting control systems).
- Passive measures shall be implemented whenever is possible

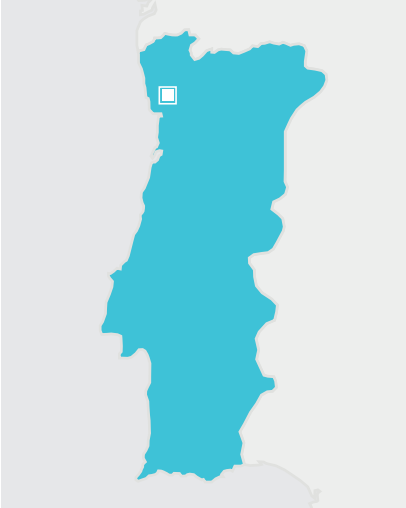
B. Renewable energy production

- PV panels installation framed on the creation of a Renewable Energy Community

Portugal

MUNICIPALITY/AUTHORITY

Município de Valongo



INVESTMENT SIZE

64.1
MILLION €

RES PRODUCTION

10.7
GWh/y

ENERGY SAVING

21.7
GWh/y

MAIN TARGET SECTOR

The measures will:

Boost buildings energy efficiency and its financing:

- Renovation of 82 public buildings/facilities - replacing HVAC systems, installing solar thermal and heat pumps, etc.
- Renovation of 905 dwellings in social housing – thermal insulation, efficient windows, and installation of solar panels.

Boost decentralised renewable energy production:

- Implementation of 215 kWp (PV) for self-consumption in high consumption municipal buildings;
- Creation of renewable energy communities in 18 social housing districts (1,1 MWp PV);
- Creation of a Municipal Energy Community including 14 municipal buildings (85 kWp of PV);

Boost EE through smart grids:

- Remote management system in the city SL (15211 LED) by a transformation station.

Boost sustainable urban mobility:

- Improve the cities cycling paths (transfer 5% pkm).
- Installation of 43 EV chargers.

Promote innovative energy inf.:

- Green H2 production of 1MW with storage (3MWh) and 2.1 MW wind energy and 2MWp PV.

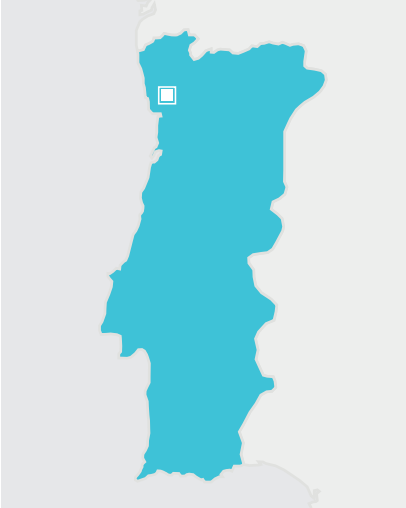
MAIN TARGET SECTOR

Public Buildings

Portugal

MUNICIPALITY/AUTHORITY

Municipality of Matosihos



INVESTMENT SIZE

112

MILLION €

RES PRODUCTION

8

GWh/y

ENERGY SAVING

48

GWh/y

MAIN TARGET SECTOR

The measures consist of:

- Widespread buildings energy efficiency and its financing:
- Renovation of 89 public buildings - envelope insulation, efficient lighting systems, HVAC replacement, BMS and solar thermal;
- Street lighting: installation of remote-control system (19 983 LED)
- Renovation of 53 social housing complexes - envelope insulation, solar thermal to support DHW;

Increase decentralised renewable energy production:

- Installation of 296 kWp of photovoltaic solar energy in high consumption buildings;
- Creation of energy communities in social housing - 4,9 MW of PV;
- Installation of 400 kWp of PV in 8 sport municipal facilities;

Promote sustainable urban mobility:

- Replacement of municipal fleet with electrical vehicles;
- Installation of 100 EV chargers across the municipality territory.

Encourage up-take of innovative technology:

- Feasibility study of the restoration of 8 water mills in Leça River, representing 80 MW to be used in EV chargers and street lighting.

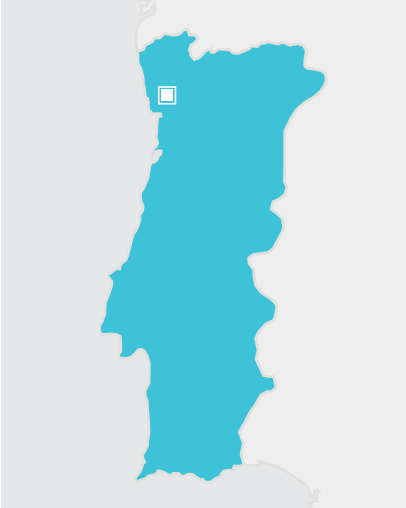
MAIN TARGET SECTOR

Public Buildings

Portugal

MUNICIPALITY/AUTHORITY

Câmara Municipal de Azambuja



INVESTMENT SIZE

29.7

MILLION €

RES PRODUCTION

10.8

GWh/y

ENERGY SAVING

11.4

GWh/y

MAIN TARGET SECTOR

A. Renewable energy production measures

- Renewable Energy Community (REC) development, through the installation of PV panels. Accordingly with the Portuguese applicable law, REC can rely on the DNO and energy suppliers for energy sharing and billing, therefore those technologies are not comprised in the initial project.

B. Energy Efficiency Measures

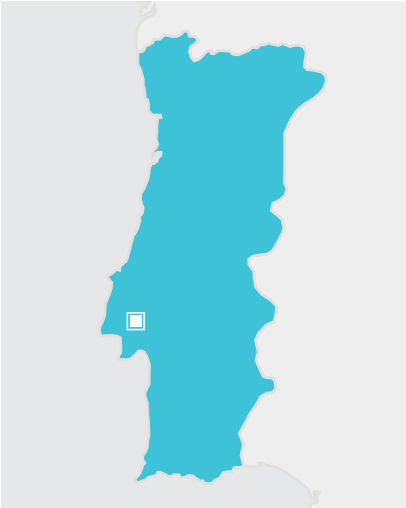
- Illumination (substitution of current lights for LED and implementation of automatic lighting control systems)
- Climatization and Sanitary Hot Water systems optimization (less efficient equipment replacement for heat pumps, both for hot water and space heating/cooling)
- Insulation (roofs, external walls and windows renewal), which leads to a decrease of heat excess in high temperatures weather and reduces the heat loss in buildings in lower temp.
- The measures will be implemented in 2 schools, a cultural and an admin. equipment and in 2 householders (pilot). Subsequent expansion to 52 buildings is also included in the project

MAIN TARGET SECTOR

Residential buildings

MUNICIPALITY/AUTHORITY

Alto Alentejo



INVESTMENT SIZE

25.3

MILLION €

RES PRODUCTION

8.1

GWh/y

ENERGY SAVING

38.5

GWh/y

MAIN TARGET SECTOR

In this IC, the 15 Municipalities intend to develop RCN with: study for the implementation of EE measures: improvement of lighting systems and air conditioning, replacement of glazing/coverings, among others - reduction of 60% of total energy consumption in Municipalities (corresponding to 30,4 GWh); study for the implementation of RECs (9.532 PV systems–5,15 MW of installed power with production of 8,1 GWh). Meeting the objective of decarbonizing public buildings and contributing to the reduction of 9.636 Ton of CO2. A reduction of 76% of the electricity consumption of the 15 Municipalities, an ambitious figure to the region. The production surplus will be used to social housing, business incubators, bringing services closer to citizens, promoting efficiency in the allocation of public resources, improvement of services and guarantee citizen participation.

Planned implementations are in line with Ordinance n. 671/2022 9th September 2022, which regulates the procedures for EE contracts

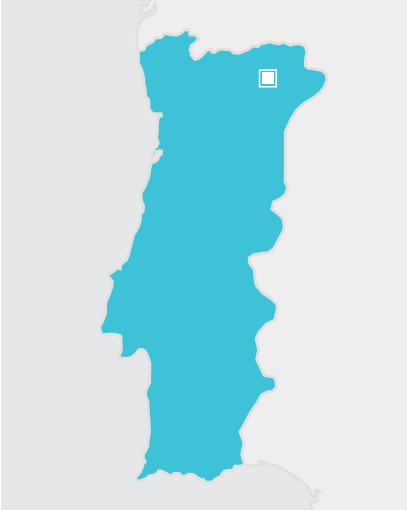
MAIN TARGET SECTOR

Public Buildings

Portugal

MUNICIPALITY/AUTHORITY

Municipalities of Terra Quente Transmontana



INVESTMENT SIZE

56.1

MILLION €

RES PRODUCTION

45

GWh/y

ENERGY SAVING

166

GWh/y

MAIN TARGET SECTOR

Residential buildings

The intended measures to be financed are the deployment of local solar power photovoltaic installations, electric vehicles (EVs, as storage and sustainable mobility) in combination with an energy community for its management and heat pump installation for heating and cooling. These measures shall be applied to the 5 municipalities of Terra Quente.

The decentralized solar power photovoltaic installations will be used: (1) for powering with the heating pumps and generating heat and cooling for buildings with an approximate COP of 3; (2) for powering the municipalities and EVs with local green energy; (3) as a local source for the energy community.

The heat pumps allow not only to increase efficiency in the heating and cooling systems but also to replace old wood, heating oil & gas combustion and plug in electric heaters in buildings that have a very low efficiency. In addition, the heat pumps have the capacity to replace fans and other non-efficient cooling methods during warmer seas.

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