

# LIFE LOOP

## D1.9 Target Report

December 2022



This project has received funding from the European Union's LIFE programme under grant agreement No 101077085

# 1.1 LIFE LOOP Target Report Introduction

LIFE LOOP is an ambitious programme that will enable new partnerships between municipalities and citizens to create at least 35 new community energy projects. The table below summarises the target for each geographic area. How these targets will be achieved is described in more detail for each area in section 1.2. In many areas LIFE LOOP adds value by enabling citizen participation and new shared governance models in planned energy efficiency and solar projects. In others new projects and investments will be created.

Area	New citizen-led initiatives	(Municipal) actors with increased skills	Investment triggered €	CE energy savings (GWh)	New CE RE (GWh)	Citizens involved	Citizens Informed	Carbon savings (tCO2)
<b>Pilots</b>								
Croatia, Zagreb	5	150	3 000 000	0,00	3,90	10 000	100 000	1 073
Greece, Crete	5	200	4 000 000	0,80	1,30	10 000	108 930	578
Romania, Bistrita	5	175	5 580 000	6,00	4,68	700	90 000	2 937
<b>Satellites</b>								
Bulgaria, Gabrovo	5	30	500 000	1,50	0,55	300	3 000	563
Italy, Ussaramanna	2	40	100 000	0,07	0,08	100	1 345	39
Italy, Villanovaforru	2	40	100 000	0,07	0,08	100	1 349	39
Cyprus	3	100	1 000 000	0,30	0,60	3 000	62 510	247
Romania, Tulcea	2	70	2 528 000	2,50	0,39	500	5 000	795
<b>Associated Partners</b>								
Kosovo, Pristina	1	30	50000	0,03	0,04	200	2 000	19
N. Macedonia, Skopje	1	30	50000	0,03	0,04	200	2 000	19
Bosnia, Mostar	2	30	32000	0,02	0,01	250	3 500	9
Croatia, Porec	1	15	25000	0,00	0,02	100	2 000	6
Serbia, Kragujevac	1	30	50000	0,03	0,04	200	2 000	19
<b>Totals</b>	<b>35</b>	<b>940</b>	<b>16 815 000</b>	<b>11,34</b>	<b>11,72</b>	<b>25 650</b>	<b>995 688</b>	<b>6 342</b>



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## 1.2 Pilot and Satellite Municipalities – Strategies for Achieving Targets and Adding Value

### 1.2.1 Zagreb

#### New citizen-led energy projects initiated and increased renewable energy generation:

Currently there are no energy communities registered in Croatia, but interest is increasing, especially for energy sharing in multi-apartment buildings. Through LIFE LOOP, ZEZ will establish a dedicated energy cooperative with the focus of developing the country's first community solar projects, funded by all interested citizens and SMEs.

LIFE LOOP will enable 3 MW of new citizen-owned renewable energy production in Zagreb. The proposed increase in RE for the City is mostly based on the official Solarization Plan, which has a target to install 10 MW of solar PV on public buildings by 2024. The added value of LIFE LOOP is that it will enable that at least 20% of this target (2 MW) to be financed and owned by citizens through local energy community. This would not happen without the support of the project – establishing the energy community, gathering members and developing solar projects is too expensive for non-professional citizen initiatives in Croatia. LIFE LOOP support for these early development activities is vital.

In addition, the Solarization Plan aims to enable 10 MW of solar PV for households, through a range of incentives. LIFE LOOP will enable at least 10% of these new domestic installations to be supported by the 'On the Sunny Side' service (operated by ZEZ) and the one-stop-shop Solar Info Center service, designed and implemented through LIFE LOOP.

LIFE LOOP will bring support from ZEZ, sharing European best practice through REScoop.eu and Energy Cities, to initiate new community energy projects in Croatia, namely to satellite partner City of Porec and to municipalities covered by Regional Energy Agency of North-Eastern Croatia.

**Energy saved through energy efficiency and more efficient use of renewables:** This is not a focus area for community energy projects in Zagreb, however, opportunities for community-led energy efficiency projects will be explored during LIFE LOOP's development.

#### Increased investment in Community Energy:

€3m is allocated to new RE projects in Zagreb's SECAP. Through the city's involvement in LIFE-LOOP this will be achieved primarily through new community energy projects. The Zagreb's Solarization Plan represents 10 million EUR of investment. LIFE LOOP will enable at least 20% of this investment to be triggered by new citizen-led initiatives. In addition, LIFE LOOP will ensure that at least 10% of the €10m target for domestic PV (i.e. 1 million EUR), will be enabled through ZEZ's On the Sunny Side service and one-stop-shop Solar Info Center service.

#### Additional citizens involved in Community Energy:

Through LIFE LOOP an additional 10 000 citizens will be directly reached by all project activities, including participating in webinars, workshops, training, receiving support through ZEZ's On the Sunny Side service, Zagreb's Solar Info Center or making an investment in the community energy projects etc. ZEZ's open platform will enable citizens to invest in rooftop solar projects in Zagreb and the surrounding areas. We expect to reach 300-500 citizens by the end of the project and additional 500 members by 2030. Through the Sunny Side service, ZEZ will can reach around 3.000 citizens per year (direct phone and email support, webinars and project development support).



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LIFE LOOP will support Solar Tour through Zagreb's districts, in cooperation with district councils and City of Zagreb. The tour will include "Everything you need to know about rooftop solar", a practical workshop which will cover topics of individual rooftop solar and multiapartment building energy sharing. Through the tour in Zagreb and other cities, we will reach 300–500 citizens. This will directly contribute to Zagreb's Solarization plan KPI's, strengthening the component of citizen engagement.

We will also assist emerging energy initiatives in other regions of Croatia to kick-start their own community energy projects, based on experience gathered from Zagreb pilot projects.

In total, at least 10.000 citizens will be reached through LIFE LOOP activities in Croatia.

## 1.2.2 Crete

**New citizen-led energy projects and additional citizens involved in Community Energy:** In Crete 2.500 citizens are already actively involved in community energy. Minoan Energy Community already has 600 members. 500 of them are families benefiting directly 1,500 citizens. By taking into consideration the growth rate of Minoan during the last three years, both in terms of members engagement, as well as in terms of projects development, we are confident that there will be approximately an additional 1.850 families involved as a result of the LOOP project, directly benefiting 5.500 citizens on an island of 620.000 residents. This will be achieved as a direct consequence of the scheduled activities, which are in more detail described below.

Minoan Energy Community already has 3 municipalities currently involved as members, indirectly benefiting approximately 1.350 of their citizens. Based on the current energy community's record of municipality engagement, we expect LIFE LOOP to enable the engagement of 7 new municipalities (benefiting approximately 2.500 of their citizens) on an island of 24 Municipalities. These are likely to include:

- Agios Nikolaos (Saint Nikolas),
- Oropedio Lasithiou
- Faistos
- Ierapetra
- Chersonisos
- Gortyna
- Sitia

The approach with these Municipalities will be implemented with face-to-face meetings at top level (i.e. with the Mayors and Vice-Mayors), through which they will be informed of the activities of the Life LOOP project and co-developing specific actions within the frame of the project. These are likely to include:

- Feasibility studies on energy transition projects of their Municipal facilities. The projects will be proposed, at first stage, by the Municipalities and will be agreed by both parties. Expected topics are the study of photovoltaic plants for net metering operation for specific municipal facilities or energy performance upgrade feasibility studies.
- Physical events, such as info-days, on their premises, on energy transition topics for open public audiences.

The Regional Authority of Crete is also a member of the energy community. However, the Regional Authority has not been able so far to find its role within the energy community and to develop the right tools in order to benefit the local community. Through the LOOP methodologies and tools, the big potential of the Regional Authority will be unlocked and it will be able to benefit directly and indirectly at least 1 500 citizens on the island.

Finally, 15 SMEs are also members, benefiting approximately 150 business owners and employees. LIFE LOOP will enable Minoan energy community to engage 30 additional SMEs, benefiting approximately 500 citizens (owners and employees). This will be achieved with face-to-face meetings with SMEs, potential member and additional info-days focused on energy transition topics relevant to this particular target groups (e.g. energy saving in agricultural activities, in commercial buildings etc).



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**Increased renewable energy generation:** LIFE LOOP will enable additional production of at least 1MW of community solar in Crete. This includes e-mobility and a smart grid for storage and production. A proposal will be submitted to the Ministry of Energy, since, apart from the funding of this project, a very crucial and critical parameter is the lack of relevant legal framework. Under the current regime these projects can be only implemented as pilots. This practically means that a formal approval by the Ministry of Energy will be required.

**Energy saved through energy efficiency:** LIFE LOOP will enable a range of new community energy interventions in Municipal buildings and infrastructure. These will include:

- Insulation interventions on municipal buildings
- Installation of energy-efficient window and door frames
- Installation of passive heating and cooling systems
- Installation of heat pumps for cooling and heating
- Installation of solar collectors for hot water production
- Installation of smart metering systems for controlling and optimizing indoor temperature, lighting, passive heating and cooling systems, and electricity generation systems.
- Increasing the efficiency of the Municipal water supply pumps.
- Installation of LED lighting systems

Minoan Community Energy will carry out an analysis and a technical study in order to specify which of the above interventions are needed, and to what extent (ie how many LED lights or how thick the thermal wall facade will need to be) in order to reach the targets set, ensuring also that the interventions will be cost-efficient.

LIFE LOOP will enable Minoan Community Energy together with the Regional Authority to mobilize approximately €1.2M in order to make the above-mentioned interventions to a Municipal swimming pool (this can be in Municipality of Agios Nikolaos), a Municipal sports center, and to the Municipal water supply pumps. It is expected that these interventions will lead to an energy saving of 0.8 GWh per year. Detailed technical analysis will be conducted during project implementation. Feasibility studies will indicate the optimum mixture and sizing, from a technical and economic point of view, for each municipal facility, which will lead to maximum energy savings and optimized economic indices.

**Increased investment in Community Energy:** the investment triggered by LIFE LOOP is calculated as follows:

- 1) The energy upgrade of at least one municipal facility, school, and/or sports center is expected to trigger 1.2M investment by funds provided by the Municipalities and the Regional Authority along with investment by local citizens.
- 2) The integration of e-mobility in the municipal fleet is expected to trigger €0.8M investment by funds provided by the Municipalities, the regional authority and the local community.
- 3) The smart grid project is expected to trigger €1M of funds provided by citizens and the municipalities. This, however, will require the approval from the Ministry of Energy for such a pilot project.
- 4) A new solar project with a capacity of 1MW for collective self-consumption to provide clean energy to 300 families (5000 kWh/year per family) will trigger 1M euro investment provided by families (approximately €2850 from each family). Minoan Energy Community has already implemented two similar projects (one of 405 kW and one of 1 MW) and will certainly be able to trigger at least another 1MW of photovoltaics with the support of the Life LOOP project.



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## 1.2.3 Bistrita

**New citizen-led energy projects and additional citizens involved in Community Energy:** Bistrita municipality has managed to secure financing (approx. 66.10 million euro) for the retrofit of 100 blocks of flats, meaning 3,949 apartments, approximately 250,000 square meters of usable space and for 49 electric vehicle charging stations for tenants who own cars. Until now citizens are not usually involved in these types of projects. LIFE LOOP will help changes this, enabling the 700 inhabitants of the flats to be directly involved in the retrofit project. For example, the inhabitants will co-finance the costs with an amount of 5–10% of the costs/apartment. There are different stages of completion as follows:

1. 10 blocks of flats, with a total of 601 apartments, are in the works execution phase with deadline for completion at the end of 2023. The financing is done through a national program, so the owners' own contribution is 25% of the investment value. The estimated value is 4.5 million euro;
2. 36 blocks of flats, with a total of 1502 apartments, are in the stage of elaboration of the technical-economic documentation necessary to carry out the works, the estimated finalizing date (works) is the end of 2024. The source of funding is the National Recovery and Resilience Plan (NRRP) financed from the European Recovery and Resilience Mechanism, the contribution of the apartment owners being 0%. Estimated value 27.8 million euro;
3. 53 blocks of flats, with a total of 3046 apartments, are in the phase of contracting the design services in order to achieve the technical and economic documentation. It is intended to complete the execution of the works by 2027 at the latest, the source of financing being the North-West Regional Development Plan 2021–2027, the owners' contribution being 5% of the value of the works. Estimated value 33.8 million euro.

LIFE LOOP will add huge added value to these programmes by enabling citizens to be directly involved in both the governance, management and investment in these projects.

**Increased renewable energy generation:** new production will include community PV on 50 blocks of flats, solar thermal and PV on 15 public buildings and educational units, community investment in solar thermal and photovoltaic panels on 100 houses and a new community energy park of 3 MW of solar PV.

Photovoltaic panels will be installed on all blocks of flats that will receive funding through projects, in order to provide the necessary energy for lighting common areas.

Finance from the National Recovery and Resilience Plan (NRRP) has been secured by the Municipality to retrofit blocks of flats and public buildings (schools, administrative) and add electric charging stations. LIFE LOOP will enable the community to get involved and to invest in the photovoltaic panels installed to power the buildings and charge points. More technical details will be available after the finalisation of the technical and economic documentation estimated for first quarter of 2023.

The municipality has applied for energy efficiency funding from the Large Infrastructure Operational Programme 2014–2020 – for the equipping of 14 buildings belonging to the educational units in Bistrita with photovoltaic panels and air–water heat pumps, to provide the necessary electricity and heat from renewable sources. The total value of the project is 2,90 million euro and needs to be implemented in 2023. LIFE LOOP will enable new community energy productions of 876 kW, with an annual production of 2.739.592 kWh/year and a reduction of greenhouse gas emissions of 686 tons CO<sub>2</sub> equivalent/year.

**Energy saved through energy efficiency and more efficient use of renewables:** LIFE LOOP will enable citizen involvement in a range of energy efficiency projects. These include: energy efficiency projects for municipally owned blocks of flats and public buildings (kindergartens, schools and administrative offices) and a large retrofit programme for private owners of blocks of flats as detailed above.



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**Increased investment in Community Energy:** EUR 5.58m is set in the city's SECAP, LIFE-LOOP will enable the majority of this to be achieved through community energy projects. The investment of 5.580.000 euros is composed of:

- contribution of 2.000.000 euros from Bistrita municipality for the energy efficiency projects for blocks of flats and public buildings (kindergartens, schools and administrative offices);
- contribution from private owners of apartments in the framework of energy efficiency projects for blocks of flats – 3.000.000 euros;
- own contribution from Bistrita municipality for the future project which envisages the accomplishment of a photovoltaic park for energy generation that will be used by the companies residing in the Bistrita Sud Industrial Park, with a capacity of 3–4MW – 580,000 euros;

So far, no sources of financing for the photovoltaic park have been identified, but it is estimated that a financing session for this type of infrastructure will be launched in the first quarter of 2023.

## 1.2.4 Gabrovo

**New citizen-led energy projects initiated and additional citizens involved in Community Energy:**

Community energy is still a new concept in Bulgaria. However, the capacity building, match making and resources developed will support the municipality in enabling 5 new citizen-led initiatives. The number of individuals involved is relatively low as this is a new area of work for the city, however, we expect that the LIFE LOOP projects will exceed the 300 people anticipated.

**Increased renewable energy generation:** LIFE LOOP will enable at least 3 new community solar projects, generating 0.55GWh of electricity.

**Energy saved through energy efficiency and more efficient use of renewables:** in line with the National recovery plan, Gabrovo municipality will implement energy efficiency measures to achieve level A in all public buildings, LIFE LOOP will enable community involvement in this process. The programme also includes energy measures in multifamily buildings with the aim of achieving at least 30% savings. LIFE LOOP will ensure that communities are empowered to participate and are put at the heart of this process.

**Increased investment in Community Energy:** the average investment enabled by LIFE LOOP per project is estimated to be EUR 120 000 for each of the five new community energy initiatives through community investment and support.

## 1.2.5 Ussaramanna / Villanovaforru:

**New citizen-led energy projects and additional citizens involved in Community Energy:** LIFE LOOP will enable the municipalities to set up two new citizen-led initiatives in each area. Around 100 additional citizens will be involved for each municipality, which includes new REC members, school students and citizens from surrounding municipalities. When the two RECs were setup in 2021, the national legislative framework allowed the communities to include only a part of the local population. Under the scope of LIFE LOOP the two RECs will be able to extend the nucleus to allow other citizens to join, which in turn will enable the installation of new PV plants, in order to produce enough renewable electricity for all the new members.



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**Increased renewable energy generation:** two small community PV plants have been already installed, but new potential sites are under evaluation. The LOOP project will support the feasibility studies that will be carried out to assess the new potential sites and to identify additional funding sources. This would not be possible without LIFE LOOP's support.

**Energy saved through energy efficiency and more efficient use of renewables:** a target of around 65 MWh of energy savings for each municipality has been estimated, based not only on the additional renewable energy production (around 60 MWh), but also on the "optimization" in energy consumptions linked to the use of smart meters and a software platform, which is foreseen for the two pilots. Indeed, in order to increase the share of real-time energy self-consumption, and in turn the related economic benefits acknowledged by the Italian Government, RECs' members need to be trained and to learn how to adapt their consumption patterns to the PV plant production curve.

**Increased investment in Community Energy:** An additional 100.000€ of new community investment will be triggered in each area according to the outcomes of the feasibility studies funded by the LOOP project, for example, for the installation of new REC PV plants.

## 1.2.6 Cyprus

**New citizen-led energy projects and additional citizens involved in Community Energy:** Community Energy is a new concept in Cyprus. Through LIFE LOOP's capacity building and match-making activities with the Nicosia and Limassol Municipalities, at least three new community-led initiatives will be established. This will enable more than 3000 citizens to get involved through the various activities proposed.

**Increased renewable energy generation:** LIFE LOOP will support three new initiatives to produce 0.55GWh of community energy in Nicosia and Limassol.

**Energy saved through energy efficiency and more efficient use of renewables:** LIFE LOOP activities will enable at least three community energy efficiency programmes to be implemented in Nicosia and Limassol, enabling 0.3GWh of savings.

**Increased investment in Community Energy:** the current government plans and the action plan for the development of energy communities in LAs, private and public donors are expected to invest at least 1 000 000 in the next 5 years in actions related to the project objectives. LIFE LOOP will help to transform some of these projects from non-participatory installations to community-based investment and governance.

## 1.2.7 Tulcea

**New citizen-led energy projects and additional citizens involved in Community Energy:** Tulcea municipality has approximately 80,000 citizens. The municipality is in the process of implementing 5 energy efficiency projects for 5 residential buildings and 2 two mobility projects (including the purchase of 30 electric buses and related charging stations). LIFE LOOP will enable community participation in these projects, benefiting approximately 500 citizens or more.

**Increased renewable energy generation:** LIFE LOOP will enable new community energy generation of 0.39GWh through developing new community solar projects on municipal facilities, a kindergarten and a school.



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**Energy saved through energy efficiency and more efficient use of renewables:** LIFE LOOP will enable energy savings through the energy upgrade of three municipal facilities, a kindergarten, school and an energy retrofit of three residential buildings. LIFE LOOP will enable citizens to be actively involved in these projects, something that would not happen without this support.

**Increased investment in Community Energy:** the investment triggered comprises:

- 1) The energy upgrade of at least 3 municipal facilities, kindergarten and school, which is expected to trigger 0,5 M investment by funds provided by the Municipal Authority with additional investment by and involvement with the local community.
- 2) The energy upgrade of at least 3 residential buildings, which is expected to trigger 1,5 M investment by funds provided by the Municipal Authority with additional investment by and involvement with the local community.
- 3) The integration of e-mobility in the municipal fleet which is expected to trigger 0,5M investment by funds provided by the Municipal Authority with additional investment by and involvement with the local community.



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