POWERPOOR

Empowering Energy Poor Citizens through Joint Energy Initiatives

Report on actions for energy poor citizens in SECAPs

Working on the ground with energy-poor households and policymakers to mitigate energy poverty.

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Abbreviation	Explanation
EC	European Commission
EU	European Union
WPx	Work Package number x
Dx.y	Deliverable number y belonging to WPx
SECAP	Sustainable Energy and Climate Action Plan
EPAH	Energy Poverty Advisory Hub
SLG	Stakeholder Liaison Group
SEAP	Sustainable Energy Action Plan
MCAP	Municipal Climate Action Plan
FCT-NOVA	NOVA School of Science and Technology
CENSE	Centre for Environmental and Sustainability Research
OSS	One stop shop
RE	Renewable energy
RES	Renewable energy sources
EE	Energy efficiency

1. Introduction

The main objective of the POWERPOOR project is to develop support programmes for energy poor citizens and encourage the use of joint energy initiatives leveraging alternative or innovative financing schemes (e.g., establishing energy communities/cooperatives, using crowdfunding). POWERPOOR facilitates experience and knowledge sharing, as well as the implementation of behavioural changes and small-scale energy efficiency interventions as well as the installation of renewable energy sources, increasing the active participation of citizens.

Pilot energy poor support programmes are designed, developed, and implemented in eight countries across Europe (Bulgaria, Croatia, Estonia, Greece, Hungary, Latvia, Portugal, and Spain), led by a network of certified Energy Supporters and Mentors. The Energy Supporters and Mentors support energy poor households to implement behavioural changes and low cost no regret small scale energy efficiency interventions, as well as participate in joint energy initiatives or leverage innovative financing schemes. Energy poor citizens are engaged through various planned activities, e.g., Info Days, house visits and more. At the same time, Local Energy Poverty Alleviation Offices are established in engaged municipalities staffed by POWERPOOR trained and certified Energy Supporters and Mentors. The offices serve as One Stop Shops and provide information for all the POWERPOOR related activities and services for vulnerable households. An ICT-driven toolkit i.e., the Energy Poverty Mitigation Toolkit is also developed to complement the support programmes. National Stakeholders Liaison Groups are established in the pilot countries to facilitate the engagement and be a focal point for the POWERPOOR activities and results.

Based on the experience gained and the lessons learnt from implementing POWERPOOR, EU policy recommendations and eight National Roadmaps have been developed, so that policymakers at all governance levels can learn from the project. The project results are broadly disseminated, and synergies are maintained with global and EU initiatives, such as the EU Energy Poverty Observatory and the (EU and Global) Covenant of Mayors on Energy and Climate. The participation of networks in the Consortium strengthens the dissemination and exploitation of POWERPOOR outputs across Europe during and beyond the project implementation. The solution is sustained through the establishment of the POWERPOOR Alliance on Energy Poverty.

The POWERPOOR approach can be part of Sustainable Energy and Climate Action Plans, or any other action plan developed by municipalities as a way of mitigating energy poverty. A guidebook has been developed and is part of the energy poverty mitigation toolkit outlining how local authorities can use this approach to alleviate energy poverty. The POWERPOOR partners provided technical support to selected municipalities enabling them to incorporate this approach to mitigate energy poverty in their local

energy planning or SECAP development.

Overall, energy poverty can be a challenging issue to tackle. Large-scale activities must be applied as well as multi-level governance. Strategic implementation of actions plays a key role in the performance and overall quality of the results, these actions have to be long-term, well planned, and included in SECAPs. To assist the implementation of energy poverty mitigation actions in SECAPs, information & best practices must be gathered from action plans that already have energy poverty mitigation actions in force. By collecting information and best practices on already active actions, best practices can be extracted and presented to the target municipality's decision makers thus providing support to them in applying known best practices to SECAPs of their city.

Purpose and Scope

This report outlines the technical support provided to municipalities incorporating energy poverty mitigation actions in SECAPs or other local energy planning. The advised actions were based on the POWERPOOR approach as well as by best practices from other projects tackling energy poverty in the region. This report documents the technical support provided to participating cities that formulated a set of actions/measures for mitigating energy poverty. The support was provided by the consortium partners following the POWERPOOR approach. In total more than 60 municipalities have been engaged and supported in incorporating energy poverty mitigation actions in their SECAPs by the POWERPOOR partners.

Structure of the document

The report is structured as follows:
Section 1 introduces the report.
Section 2 presents the objectives of the report.
Section 3 presents the POWERPOOR approach for incorporating actions in SECAPs.
Sections 4-11 presents the process and results of incorporating energy poverty mitigation actions in SECAPS following the POWERPOOR approach in the eight pilot countries and in an EU level.

2. Actions for energy poor citizens in SECAPs - objectives

The objective of this report is to outline and compile actions from existing, in-development Sustainable Energy and Climate Action Plans (SECAPs) and other sources on tackling energy poverty, and to report how POWERPOOR partners provided technical support to municipalities that had a SECAP in force, a SECAP under development, or similar strategy, to include energy poverty alleviation actions.

Many EU municipalities have joined the Covenant of Mayors and elaborated SECAPs under this initiative. Covenant of Mayors[1] is one of the most prominent EU initiatives, where Mayors from all over Europe "**step up climate ambitions and commit to delivering action** at the pace that science dictates, in a joint effort to keep global temperature rise below 1.5℃ - the highest ambition of the Paris Agreement."
The Covenant of Mayors statement is "that, by 2050, we will all be living in decarbonised and resilient cities with access to affordable, secure and sustainable energy." As part of the Covenant of Mayors - Europe movement, cities pledge that they will continue to (1) reduce greenhouse gas emissions on their territory, (2) increase resilience and prepare for the adverse impacts of climate change, and (3) tackle energy poverty as one key action to ensure a just transition." [2]

The 3 pillars of the Covenant of Mayors signatories' commitments are:

- Reducing GHG emissions by 55% by 2030
- Strengthening resilience
- Alleviating energy poverty

Local authorities joining the Covenant of Mayors for Climate and Energy - Europe initiative commit to submitting an action plan (SECAP) within two years after formally signing up for the initiative. This action plan is a key implementation tool for the Covenant signatories. It defines mitigation target(s) and adaptation goal(s) and is based on a Baseline Emission Inventory and a Risk & Vulnerability Assessment, which provide an analysis of the current situation at a given moment. They serve as a basis for defining a comprehensive set of actions that signatories plan to undertake to reach their targets, including the alleviation of energy poverty.

SECAPs are an important tool for the municipalities to define their energy and climate vision and goals and subsequently list and implement the activities to achieve the set

[1] https://eu-mayors.ec.europa.eu/en/home
[2] https://eu-mayors.ec.europa.eu/en/about/objectives-and-key-pillars

goals. Regular, every two-year monitoring is encouraged to see if the municipality makes steps towards achievement of its goals and vision.
SECAPs provide organisational structure and methodology – how to make the baseline year analysis, invest in the corresponding actions and how to monitor, if the development heads to the achievement of the designated goals.
Therefore, it is of high importance for the POWERPOOR municipalities, using the guidelines from Energy Poverty Guidebook for Energy Planning[3], to define wide and thorough set of measures for support energy poor citizens though SECAPs – so that concrete actions are formulated, included in the planning and subsequently implemented and monitored or further strengthened if necessary.
Working with municipalities to reach the objectives of this task, POWERPOOR partners have used the Energy Poverty Guidebook for Energy Planning and the POWERPOOR Toolkit:

- for identifying energy poor citizens/communities/areas/districts/;
- for using the best practices;
- for using the POWERPOOR toolkit

to define concrete measures in SECAPs for energy poor citizens and alleviation of energy poverty.

In 2022 Covenant of Mayors has also introduced the 3rd pillar - alleviating energy poverty and has included Energy Poverty Assessment in the SECAP template.

The Energy Poverty Assessment assists in defining the state of energy poverty in a local authority. It is an integral part of SECAP. The Energy Poverty Assessment offers to choose from a variety of indicators in several macro areas: climate, facilities/housing, mobility, socio-economic aspects, policy and regulatory framework, and participation/awareness-raising. Each indicator can be further defined by selecting a base year and current level, either at a household or at a person level. Signatories are free to select as many indicators as they like and use them to monitor progress.[4]

As the Covenant of Mayors energy poverty pillar has been launched in 2022, a transition period will apply until the end of 2024. During the transition period reporting on energy poverty in MyCovenant remains optional, however, signatories are highly encouraged to start their assessment and planning on energy poverty.[5]

[3] Energy Poverty Guidebook for Energy Planning: https://powerpoor.eu/library/deliverables
[4] https://eu-mayors.ec.europa.eu/sites/default/files/2022-10/Covenant-reporting-guidelines-energy%20poverty-final.pdf
[5] https://eu-mayors.ec.europa.eu/en/FAQs

3. Approach for incorporating actions in SECAPs

To provide technical assistance in municipalities and enable them to incorporate actions in SECAPs using the POWEPOOR approach certain steps needed to be followed by the partners. Initially a baseline assessment of the current situation of local planning was needed for the interested municipalities, then getting in touch with cities and letting them know about the POWERPOOR approach and how they can benefit, and finally to provide the technical assistance through calls, mails, or meetings. The POWERPOOR project came at a time of gradual to full recognition of energy poverty in an EU and local level during an energy crisis, so setting structures and tools for the alleviation of energy poverty was deemed necessary by municipalities themselves.

3.1 Baseline analysis – identifying current energy poverty alleviation strategies in SECAPs

To do the baseline assessment of the municipalities that were be interested in incorporating energy poverty mitigation actions in their local planning a questionnaire was prepared so that all the partners could have the same starting point. A set of questions were developed by ZREA and discussed with and validated from the whole consortium. The questions that have been selected in the baseline assessment to obtain information, also emphasise the need and the importance of including actions for energy poverty mitigation. The POWERPOOR partners via e-mails, phone conversations, or online/physical meetings communicated with the relevant municipality representatives and posed these questions. The questions are presented in table 1. When the baseline assessment in each country was done then the local partners could formulate and define the way forward in supporting municipalities with their local planning.

Table 1: Questions for the baseline analysis

1	Is there a SECAP (or similar plan, for instance, decarbonisation plan) in force? • Are there actions included for energy poverty mitigaetion? • List the included energy poverty mitigation actions.
2	Is there a SECAP (or similar plan, for instance decarbonisation plan) in elaboration process (YES/NO)? If YES, for what period and what is the timeframe for its approval? • Is it planned to include actions on energy poverty mitigation in SECAP? • List the planned energy poverty mitigation actions.
3	If the city does not have SECAP – does it plan to elaborate on it? When?
4	If non-existent SECAP - what alternative planning document could be used for the incorporation of energy poverty mitigation actions?

3.2 Provision of Technical support

Each partner used a customised approach that fit the special national circumstances when providing technical support. In other countries online help (e.g., mails or phone calls) work better while in others face to face meetings were required. The project partners proceeded with all the needed preparation steps, including setting the proper form of engagement, mapping the stakeholders, drafting the proposed list of actions etc. Then via e-mails, phone conversations or online/physical meetings the communication with the relevant municipality representatives was held to provide insights to the Energy Poverty Guidebook for Energy Planning, discuss the energy poverty mitigation actions, defining them and agreeing of the way of inclusions them in SECAPs or similar strategies. This helped to formulate and define the local interventions as "Local interventions, if well planned, can offer long-term solutions for households dealing with energy poverty"[6]. The steps of technical support are presented in the below Table 2.

Table 2: Technical support steps

1	Preparing the ground for providing technical support – which form of engagement (e-mails, phone calls, meetings, written, etc.) – and timeframe on the proposed energy poverty mitigation strategy will be followed? Is it needed to provide capacity building activities for the municipal personnel? (Is an energy poverty alleviation office already established or planned to be established?)
2	Mapping the stakeholders – Who will be the stakeholders from the pilot city with whom the actions will be discussed.
3	Providing support to target the problem. Will it be necessary to help the pilot city measure/target the problem? If yes, how?
4	Drafting a list of the energy poverty mitigation actions – what will be proposed for the pilot city?
5	Exploring the relative strategy to include energy poverty alleviation actions – In what document (existing/new SECAP or other planning document) the actions will be included?
6	Defining the list of approved actions included in the document or planned to be included – which are the final selection of actions? Which are the respective timeline and targets?

(1) [6] *Pye et al., 2015; Bouzarovski, 2018*

7	Exploring actions already in place (e.g., already an established energy community) implementing energy poverty alleviation actions? If YES, please describe shortly.

Overall, 52 municipalities included the POWERPOOR approach as a way of mitigating energy poverty in their SECAPs or other local energy planning initiatives. In the sections below the details of the technical support provided by partners in selected municipalities is presented.

Table 3: Number of actions included in SECAPs

	BG	HR	EE	GR	HU	LV	PT	ES	EU	Total
#of actions	7/7	4/4	4/4	16/11	5/7	3/3	5/7	8/7	-/10	52/60

4. Inclusion of Energy Poverty mitigation actions in SECAPs – Bulgaria

4.1 Baseline analysis

Being one of the EU countries with the highest rates of energy poverty, Bulgaria needs to pursue a national policy for the reduction of the problem, while aiming to reach the European Green Deal targets. There are already several instruments for tackling energy poverty in place, such as the Targeted social protection program for the heating season of the low-income population[7], for example. Their implementation at local level is carried out by municipalities.

Although many Bulgarian municipalities are Signatories of the Covenant of Mayors, in 2021 not one city in Bulgaria had a SECAP approved and in force. In the last few years, a great number of municipal plans concerning energy had to be written, which made it possible to include in them a chapter about tackling energy poverty and protecting vulnerable citizens at an early stage of their development.
Assisting Sofia Municipality in their sustainable energy policy, SOFENA contributed to the drafting of the SECAP of the capital city. The agency was also invited to incorporate a section on energy poverty for the newly developed SECAP of the city of Burgas, one of the two most important Black Sea ports of Bulgaria.

The long-term vision for sustainable energy development of Sofia Municipality is to reduce the use of fossil fuels and to alleviate the energy burden on the budget of the municipality, and on the citizens. These aims can be achieved by implementing energy efficiency measures and utilising local renewable energy sources. Additional benefits would not only be the mitigation of energy poverty but also improved air quality, protection of the environment, creation of new workplaces on the territory of the municipality for people involved in the operations of local energy sites, ameliorating public transport, etc.

Being one of the busiest ports of the country, Burgas is a city of great importance. Thus, the policy of Burgas Municipality regarding the alleviation of energy poverty can have a positive impact on the whole region. Following SOFENA's recommendations, under Priority 1 'Decarbonisation of the building infrastructure and installations' of the SECAP of Burgas city for the period 2021-2030 one specific objective was added, namely:

[7] The parameters of the current program for the provision of targeted heating aid during the winter season are defined in: Ordinance No. RD-07-5 of 16.05.2008, with later amendments.

'Increasing of energy efficiency and tackling energy poverty', which incorporated measures designed to assist vulnerable citizens and to mitigate energy poverty.

4.2 Technical support process and actions on energy poverty mitigation

Technical Support process

When preparing the SECAPs of Sofia and Burgas Municipalities, SOFENA organised training sessions and consultations on the topic of mitigation of energy poverty. Many of the employees of these municipalities took part in the POWERPOOR training sessions. Some of them became POWERPOOR Energy Mentors and expressed interest to be kept up to date with the development of the project activities, so as to be able to benefit from the POWERPOOR approach and to use the examples of good practices The POWERPOOR Energy Poverty Guidebook for Energy Planning was sent to the municipal offices for further reading.

Assisting the Municipalities of five other, smaller cities, Sitovo, Radnevo, Shabla, Isperih, Valchidol, in the development of their long-term and short-term Plans for energy efficiency and for promoting the use of energy from renewable sources and biofuels, different communication channels were used in order to obtain the relevant information. Thus, SOFENA not only kept an active dialogue with the municipal experts via phone calls, e-mails, on-line meetings, but also organised an Info Day and an Information stand as part of the National Conference on Sustainable financing for projects for energy efficiency and renewable energy sources, held in June 2 – 4, 2022, in Burgas. This provided an opportunity to present the POWERPOOR approach to local municipal experts, house managers, and citizens, who visited the stand and shared their points of view about energy usage and the regional peculiarities of energy poverty.

Involved stakeholders from the city level

Sofia Municipality

Climate, Energy and Air Directorate

Climate and Energy Department

Burgas Municipality

Climate, Energy and Environment, Climate Changes Adaptation Department

Construction, Landscaping and Energy Effectiveness Department

The employees of the corresponding departments responsible for energy and climate issues were involved as stakeholders for the following municipalities:

Sitovo, Radnevo, Shabla, Isperih, Valchidol.

Actions on energy poverty mitigation

The following list of energy poverty mitigation actions was proposed for the municipalities involved:

- Identification and segmentation of vulnerable households in the context of energy poverty.
- Development of a municipal mechanism to support energy-poor households.
- Creation of a single information portal for energy efficiency and renewable energy sources measures in households.
- Carrying out energy audits and implementation of measures for energy efficiency EE and replacement of the fuel-based heating systems of multi-family residential buildings.
- Development of a mechanism for the implementation of renewable energy sources installations to produce electrical energy for own consumption in residential buildings.
- Carrying out campaigns to replace electrical appliances with high energy consumption with energy efficient ones.
- Raising awareness and activating citizens on energy efficiency and renewable energy sources topics.
- Proposing to establish POWERPOOR Energy Poverty alleviation offices within the local municipalities or the local agencies for social assistance.

Actions have been included in:

SECAP of Sofia Municipality 2021 - 2030;
SECAP of Burgas Municipality 2021 - 2030;
Sitovo – Programme for energy efficiency 2021-2027;
Radnevo - Long-term programme for promoting the use of energy from renewable sources and biofuels 2023-2033;
Shabla - Long-term programme for promoting the use of energy from renewable sources and biofuels 2023-2033;
Isperih - Programme for energy efficiency 2023-2027;
Valchidol – Long-term programme for promoting the use of energy from renewable sources and biofuels 2022 – 2032.

List of energy poverty mitigation actions included in the SECAP or other document

The measures included in the SECAP of **Sofia municipality** 2021-2030, which have a positive effect on the alleviation of energy poverty among the population. The measures are as follows:

- Energy-efficient renovation of buildings; installing solar roof-top systems where applicable;
- Replacement of individual low-efficiency heating devices with biomass heating, heat pumps, etc.;

- Switching from fossil fuel to renewable energy or natural gas heating; replacement of old type sub-stations with new ones; switch to greener fuels;
- Enhanced control of the construction of new buildings.

Under Priority 1 'Decarbonization of the building infrastructure and installations' of the SECAP of **Burgas city** for the period 2021-2030 one one specific objective was added, namely: 'Increasing of energy efficiency and tackling energy poverty', which incorporated measures designed to assist vulnerable citizens and to mitigate energy poverty. These measures are as follows:

- Identification and segmentation of vulnerable households in the context of energy poverty;
- Development of a municipal mechanism to support energy-poor households;
- Creation of a single information portal for energy efficiency and renewable energy sources measures in households;
- Carrying out energy audits and implementation of measures for energy efficiency and replacement of the fossil fuel-based heating of multi-family residential buildings;
- Development of a mechanism for the implementation of renewable energy sources installations to produce electrical energy for own consumption in residential buildings;
- Carrying out campaigns to replace electrical appliances with high energy consumption with energy efficient ones;
- Raising awareness and activating citizens on energy efficiency and renewable energy sources topics.

The Programme for energy efficiency of **Sitovo Municipality** 2021-2027 plans the following measures related to the alleviation of energy poverty:

- Sitovo should provide information to citizens on issues related to energy efficiency and the alleviation of energy poverty;
- It will conduct seminars for training users about financing opportunities for energy efficiency projects, renewable energy sources, etc.

In the Long-term programme for promoting the use of energy from renewable sources and biofuels of **Radnevo Municipality** 2023-2033 the following measures are included:

- Direct engagement of local stakeholders with the population through surveys and interviews to identify energy poor households;

- Organization of workshops and joint sessions for energy poor people to raise their awareness to save energy.

In the long-term programme for promoting the use of energy from renewable sources and biofuels of **Shabla Municipality** 2023-2033 the following is included:

- Energy efficiency awareness campaigns targeting vulnerable consumers / energy poor households;
- Cooperation with local stakeholders in relation to the energy poverty.

Programme for energy efficiency of **Isperih Municipality** 2023-2027 includes:

- Initiate social assistance and housing provision with the aim of ensuring healthy and comfortable living conditions for the citizens, and overcoming energy poverty;
- Consultations and trainings to energy poor families to acquire sustainable consumers' habits, as well as to undertake effective interventions to reduce energy costs by improving the energy efficiency of the households.

In the Long-term programme for promoting the use of energy from renewable sources and biofuels of **Valchidol Municipality** for the period 2022-2032 a special chapter was included addressing energy poverty. In this section the following measures were recommended:

- Collecting data from local social assistance offices, as well as engaging local stakeholders who can use different methods such as surveys and interviews in order to identify energy poor households;
- Raising awareness about the problem of energy poverty and the possible means to tackle it through organising seminars, discussions, workshops.
- Popularising the concept of energy community/ cooperation as a possible measure to benefit vulnerable citizens and energy poor households by offering them participation without burdening them with the financial obligations of the other members.

In all strategic documents the POWERPOOR project was given as good practice and the POWERPOOR toolkit was recommended for identification of the vulnerable households in risk of energy poverty. Moreover, the PowerAct was promoted as a tool to assess the energy consumption of households and to provide them with instant advice on energy saving.

5. Inclusion of Energy Poverty mitigation actions in SECAPs – Croatia

5.1 Baseline analysis

As part of the Compete4SECAP (H2020) project DOOR worked on the creation of 4 SECAPs for the cities of Velika Gorica, Rijeka, Zadar and Osijek. But only cities Rijeka, Zadar and Osijek have decided to accept DOOR's proposal (including the POWERPOOR approach to mitigate energy poverty in SECAP) for the inclusion of a measure chapter to combat energy poverty (one chapter on energy poverty was added to SECAP). The mentioned cities did not have SECAPs until the start of the POWERPOOR project, while the city of Zagreb had a SECAP that was adopted in 2019 and was planning to create a new programme (as part of Energy poverty advisory Hub (EPAH) technical assistance for the municipality) that would contain measures to reduce energy poverty, rather than upgrading existing SECAP.

During the implementation period of the POWERPOOR project, DOOR worked on the incorporation of energy poverty mitigation actions in 4 municipalities – city of Zagreb, city of Rijeka, City of Zadar and city of Osijek together comprising a territory of 1 085 800 inhabitants. SECAP of the city of Rijeka 2021 - 2030, has been approved on 01/12/2020, SEACP of the city of Zadar 2021-2030 has been approved on 03/08/2021 and SECAP of the city of Osijek has been approved on 01/10/2021. In March 2023, the city of Zagreb adopted the "Programme to reduce energy poverty in the area of the city of Zagreb for the period until 2030".

All three SECAPs of Rijeka, Zadar and Osijek cities included energy poverty mitigation as part of the activities, as well as several other actions that have positive effect on the reduction of energy poverty, while the city of Zagreb adopted the entire programme of measures which are aimed at reduction of energy poverty – "Programme to reduce energy poverty in the area of the city of Zagreb for the period until 2030".

5.2 Technical support process and actions on energy poverty mitigation

Technical Support process

As part of the Compete4SECAP (H2020) project DOOR worked on the creation of 4 SECAPs but the POWERPOOR approach was only used for 3 cities SECAPs - the cities of Rijeka, Zadar and Osijek and all means of communication were used to obtain the data to create the SECAPs with energy poverty measures in the best way possible (e-mails, phone, discussions, workshops, meetings). Through the process of consultations and discussions, more detailed understanding and more concrete actions have been

formulated for mitigation of energy poverty, using examples of good practice from POWERPOOR project.

Similar activities that were carried out for the creation of SECAP (e-mails, phone, discussions, workshops, meetings) were used in case of city of Zagreb for development of "Programme to reduce energy poverty in the area of the city of Zagreb for the period until 2030" (PAH's technical assistance for the municipality). Also examples of good practices from Energy Poverty Guidebook for Energy Planning were used for proposing measures that could be included in City Program.

The following list of energy poverty mitigation actions was proposed for the pilot municipalities:

- Establishment of a system for collecting and monitoring data on energy poverty;
- Establishment of energy poverty alleviation office; or one stop shop (OSS) for technical, legal and economic support to household owners (also energy poor households) on renewable energy installations and/or energy efficiency investments;
- Small scale energy efficiency measures for vulnerable groups of citizens at risk of energy poverty (Energy boxes);
- Replacement of household appliances;
- Co-financing of energy renovation of family houses for vulnerable groups of citizens at risk of energy poverty;
- Co-financing of energy renovation of multi-apartment buildings for vulnerable groups of citizens at risk of energy poverty;
- Use of the POWERPOOR tools – POWER TARGET, POWER ACT, POWER FUND in tackling energy poverty;
- Construction of a green and integrated housing fund for social housing;
- Distribution of informational/educational materials on behavioural changes, or more substantial measures such as building renovation, upgrading of heating system etc.;
- Workshops for (energy poor) citizens informing them about energy saving measures and financing schemes supporting improvement.

Involved stakeholders from pilot city

City of Rijeka

- Representatives from the Department for Development, Urban Planning, Ecology and Land Management
- DOOR representatives

City of Zadar

- Representatives from the Department for Spatial Planning and Construction
- DOOR representatives

City of Osijek

- Representatives from the Administrative Department for Social Protection, Pensioners and Health
- Representatives from the Administrative Department for Spatial Planning, Construction and Environmental Protection
- DOOR representatives

City of Zagreb

- Representatives from the City Office for Economy, Environmental Sustainability and Strategic Planning
- Representatives from the City Office for Social Protection, Health, Veterans and Persons with Disabilities
- DOOR representatives

Actions on energy poverty mitigation

The following list of energy poverty mitigation actions was proposed for the pilot municipalities:

City of Rijeka, some proposed measures in SECAP which contribute to the reduction of energy poverty:

1. Integral energy renovation of the public, residential and commercial sectors, is planned to increase the introduction of renewable energy sources for the production of electricity, the replacement of existing fossil fuel heating systems with renewable sources, an increase in the efficiency of district heating and a number of non-technical measures of education and promotion;
2. Electrification of public and private transport, use of biofuels, and encouragement of non-motorised transport;
3. Development of "green and blue infrastructure";
4. Raising awareness and sensitizing the public and decision-makers at all levels;
5. Energy poverty measures: Establishment of a centre for energy consulting and assistance to the energy poor;
6. Energy poverty measures: Financing of energy renovation of family houses for vulnerable groups of citizens at risk of energy poverty;
7. Energy poverty measures: small energy efficiency measures for vulnerable groups of citizens at risk of energy poverty.

City of Zadar, some proposed measures in SECAP which contribute to the reduction of energy poverty:

1. Integral energy renovation of the public, residential and commercial sectors, a strong introduction of renewable energy sources for electricity production, replacement of existing fossil fuel heating systems with renewable sources, increasing the efficiency of district heating and a number of non-technical education and promotion measures are planned;
2. Electrification of public and private transport, use of electric or alternative vehicles with zero CO2 emissions, modernization of public transport and encouragement of non-motorised transport;
3. Strengthening the resilience of coastal water-utility infrastructure and coastal water resources;
4. Strengthening the capacity for fire protection;
5. Improving access to green areas and increasing sustainable local food production;
6. Development of "green" and "blue" infrastructure;
7. Ensuring a sustainable long-term water supply on the islands;
8. Replacement of household appliances with energy-efficient ones, energy class A+++;
9. Introduction of energy-saving light bulbs in all households;
10. Energy poverty measures: Financing of energy renovation of family houses for vulnerable groups of citizens at risk of energy poverty;
11. Energy poverty measures: Establishment of a centre for energy consulting and assistance to the energy poor;
12. Energy poverty measures: small energy efficiency measures for vulnerable groups of citizens at risk of energy poverty.

City of Osijek, some proposed measures, included in SECAP:

1. Integral energy renovation of the public, residential and commercial sectors, a strong introduction of renewable energy sources for electricity production, replacement of existing fossil fuel heating systems with renewable sources, increasing the efficiency of district heating and a number of non-technical education and promotion measures are planned;
2. Electrification of public and private transport, use of electric or alternative vehicles with zero CO2 emissions, modernization of public transport and encouragement of non-motorised transport;
3. Continue with the gasification of the City of Osijek;
4. To encourage and expand the use of the centralized thermal heating system;
5. Replacement of household appliances with energy-efficient ones, energy class A+++;
6. Introduction of energy-saving light bulbs in all households;
7. Energy poverty measures: Financing of energy renovation of family houses for vulnerable groups of citizens at risk of energy poverty;

8. Energy poverty measures: Establishment of a centre for energy consulting and assistance to the energy poor;
9. Energy poverty measures: small energy efficiency measures for vulnerable groups of citizens at risk of energy poverty.

City of Zagreb, some proposed measures to reduce energy poverty in the area of the city of Zagreb for the period until 2030

1. Simple energy audits of households in the area of the city of Zagreb at risk of energy poverty;
2. Creation of a brochure on saving energy in the household;
3. Education of employees of the City of Zagreb on simple energy saving measures in public buildings and simple energy audits;
4. Creation of criteria for energy poverty at the level of the City of Zagreb;
5. Creating a questionnaire, creating an analysis of energy poverty in the area of the City of Zagreb;
6. Revision of the SECAP of the City of Zagreb;
7. Preparation of documentation for the tender application for co-financing the energy renovation of family houses and multi-apartment buildings with special emphasis on households at risk of energy poverty;
8. Establishment of a centre for energy consulting and assistance to the energy poor;
9. Monitoring the effect of energy poverty measures;
10. Financing the purchase of energy-efficient household appliances for households at risk of energy poverty according to the "old for new" principle.

Actions have been included in:

SECAP of city of Rijeka 2021-2030[8]
SECAP of city of Zadar 2021-2030[9] SECAP of city of Osijek 2021-2030[10]
Programme to reduce energy poverty in the area of the city of Zagreb for the period until 2030[11]

List of energy poverty mitigation actions included in the SECAP or other document

City of Rijeka energy poverty measures, included in SECAP:

[8] Informacija-o-provedbi-savjetovanja-s-javnošću-o-Nacrtu-prijedloga-akcijskog-plana-održivog-energetskog-razvoja-i-prilagodbe-klimatskim-promjenama-Grada-Rijeke-SECAP.pdf (rijeka.hr)
[9] Nacrt Akcijskog plana energetski i klimatski održivog razvitka Grada Zadra (SECAP) | Grad Zadar - Gradska uprava (grad-zadar.hr)
[10] Microsoft Word - 608_akcijski plan energet odrzivog razvitka.doc (osijek.hr)
Programme to reduce energy poverty in the area of the city of Zagreb for the period until 2030

1. Energy poverty measures: Establishment of a centre for energy consulting and assistance to the energy poor;
2. Energy poverty measures: Co-financing of energy renovation of family houses for vulnerable groups of citizens at risk of energy poverty.

City of Zadar energy poverty measures, included in SECAP:
1. Energy poverty measures: Financing of energy renovation of family houses for vulnerable groups of citizens at risk of energy poverty.

City of Osijek energy poverty measures, included in SECAP:
1. Energy poverty measures: Establishment of a centre for energy consulting and assistance to the energy poor;
2. Energy poverty measures: small energy efficiency measures for vulnerable groups of citizens at risk of energy poverty.

City of Zagreb measures included in Programme to reduce energy poverty in the area of the city of Zagreb for the period until 2030
1. Establishment of a system for collecting and monitoring data on energy poverty;
2. Energy consulting;
3. Energy box;
4. Replacement of household appliances;
5. Energy renovation of multi-apartment buildings;
6. Energy renovation of family houses;
7. Renewable energy sources;
8. Construction of a green and integrated housing fund for social housing.

Some of the proposed measures were implemented before approval the programme, such as:
1. Simple energy audits of households in the area of the city of Zagreb at risk of energy poverty (part of POWERPOOR households visits and EPAH technical assistance);
2. Creation of a brochure on saving energy in the household (DOOR made second edition);
3. Creating a questionnaire, creating an analysis of energy poverty in the area of the City of Zagreb (part of EPAH technical assistance);
4. Establishment of a Centre for Alleviating Energy Poverty (POWERPOOR project).

6. Inclusion of Energy Poverty mitigation actions in SECAPs – Estonia

6.1 Baseline analysis

Within POWERPOOR project EKYL worked with cities of Tallinn, Tartu, Pärnu and Kuressaare, with 575 000 inhabitants in total (highest population in Tallinn with 430 000 inhabitants and lowest population in Kuressaare with 13400 inhabitants) to incorporate energy poverty mitigation actions in these municipalities. These four municipalities did not have SECAPs when the POWERPOOR project started, but in three of them, work on preparing the document was reaching to the final stage.

- Saaremaa County SECAP 2030 (covers the area of the pilot city Kuressaare) was approved at the end of 2020;
- “Tartu Energy 2030. Tartu City Energy and Climate Action Plan” was approved 1.04.2021;
- "Climate-neutral Tallinn. Tallinn Sustainable Energy and Climate Action Plan 2030" was approved 3.06.2021;
- Pärnu City SECAP 2030 was approved 15.09.2022.

6.2 Technical support process and actions on energy poverty mitigation

Technical Support process

Activity 1

EKYL started the support process on energy poverty mitigation with POWERPOOR Info Days in four pilot municipalities, where the municipality representatives presented the work done for the preparation of the SECAP and discussions between the involved stakeholders were organised by the EKYL POWERPOOR team to help facilitate communication and the exchange of ideas during the preparation of SECAPs.

Activity 2

All four pilot municipalities were invited to become members of POWERPOOR Stakeholder Liaison Group in Estonia, and all municipalities accepted the invitation. The representatives provided updates on the SECAPs' status and had an opportunity to exchange experiences on implementation of their plans at the meetings of the Stakeholder Liaison Group.

Activity 3

One-to-one meetings between EKYL and the pilot municipalities were set up to examine the issue of energy poverty in multi-apartment buildings and to put forward strategies for reducing it through extensive renovation of the housing stock.

Activity 4

Representatives of the pilot municipalities regularly attend events organised by the Energy Poverty Alleviation Office established by EKYL as part of the POWERPOOR project. A collaborative network has been set up between the Energy Poverty Alleviation Office and different stakeholders, which initiates meetings where the experts from the pilot municipalities can meet the representatives of local housing associations to give updates and discuss the implementation plans of their SECAPS.

Involved stakeholders from pilot city

City of Tallinn

Representatives of the Office of Deputy Mayor
Representatives of Tallinn Property Department
Representatives of Fund KredEx
EKYL representatives
Managers of local housing associations

City of Tartu

Deputy Mayor
Representatives of Tartu Regional Energy Agency
EKYL representatives
Managers of local housing associations

City of Pärnu

Deputy Mayor
Representatives of Department of Urban Economy
EKYL representatives
Managers of local housing associations

City of Kuressaare

Representatives of the Office of Mayor
Energy economy adviser of the Saaremaa Municipality
EKYL representatives
Managers of local housing associations

Actions on energy poverty mitigation

The following list of energy poverty mitigation actions were proposed for the pilot municipalities:

- Develop a training programme on energy efficiency and the alleviation of energy poverty for the resident-owners of apartment associations;
- Organize round tables of local stakeholders to discuss challenges with energy poverty and to develop solutions for achieving energy efficiency;
- Provide technical, legal, and economic counselling for apartment associations, homeowners, and residents who are interested in establishing or joining energy communities;
- Create a sustainable housing policy/strategy that integrates the various aspects of energy and social policy related to energy poverty alleviation;
- Encourage the use of new technical and digital renovation solutions, such as building renovation with prefabricated panels;
- Provide financial support measures for energy efficiency solutions;
- Prepare guidelines for housing renovation documentation.

Actions have been included in:

"Climate-neutral Tallinn. Tallinn Sustainable Energy and Climate Action Plan 2030"[12]
"Tartu Energy 2030. Tartu City Energy and Climate Action Plan"[13]
Pärnu City SECAP 2030[14]
Saaremaa County SECAP 2030[15]

List of energy poverty mitigation actions included in the SECAP or other document

In most SECAPS, energy poverty and energy poverty mitigation are mentioned. Several actions, that have positive effect on reduction of energy poverty, are planned in all 4 SECAPS of the pilot municipalities.

City of Tallinn energy poverty measures, included in SECAP:

- Ongoing complete reconstruction of apartment buildings (improving the indoor

[12] https://www.tallinn.ee/et/media/309750

[13] https://www.tallinn.ee/et/media/309750

[14] https://kliimakava.ee/wp-content/uploads/2022/09/Parnu-kliimakava-220830.pdf

[15] https://www.sasak.ee/application/files/7216/1191/5181/SECAP_Saaremaa_saadetud_05.10.pdf

climate and exterior look of buildings) with the support of the city, taking into consideration energy efficiency requirements and opportunities (e.g. in areas of cultural and environmental value);

- Implementation of pilot projects for renewable co-generation of electricity and heat in new and refurbished buildings (e.g. PV + fuel cells);
- Development of guidelines for the renovation and reconstruction of buildings to ensure their climate resilience;
- Supplementation and/or development of support measures;
- Recognition of successful renovation and reconstruction projects.

City of Tartu energy poverty measures, included in SECAP:

- Support the establishment and promotion of renewable energy communities (energy associations);
- Provide technical, legal, and economic counselling;
- Raise awareness and educate the residents on the topics of energy efficiency and energy poverty;
- Establish a working group on renovation capacity;
- Support the preparation of design documentations for renovating apartment buildings.

City of Pärnu energy poverty measures, included in SECAP:

- Counselling for apartment associations and private house owners;
- Systematic activities to raise the awareness of the citizens on energy and climate issues to jointly contribute to the direction of the consumer economy.

City of Kuressaare energy poverty measures, included in SECAP:

- Creation of local energy community (participation in the community is open to the public) with the ability to sell locally produced renewable electricity;
- Raising awareness about energy consumption and sharing information with residents and companies. Community involvement regarding more efficient use of electricity and heat energy (including tips of smart heating and energy use).

7. Inclusion of Energy Poverty mitigation actions in SECAPs – Greece

7.1 Baseline analysis

To comprehensively address the phenomenon of energy poverty, actions with social and environmentally friendly dimensions were proposed to be incorporated in Energy and Climate Plans of a number of Greek Municipalities. This task was mainly taken over by the National Technical University of Athens (NTUA) and Sustainable City, that both are POWERPOOR Greek partners.

NTUA proposed and introduced energy poverty alleviation actions under the H2020 C-TRACK50 project in the Decarbonisation Plans of 11 Greek Municipalities with a combined population of over 300.000 inhabitants:

1. Municipality of Aliartos
2. Municipality of Voula Vari Vouliagmeni
3. Municipality of Chalkida
4. Municipality of Elliniko Argyroupoli
5. Municipality of Eretria
6. Municipality of Faistos
7. Municipality of Farsala
8. Municipality of Ilioupoli
9. Municipality of Loutraki
10. Municipality of Pylos Nestor
11. Municipality of Vrilissia

Sustainable City, as a network of Municipalities, proposed and introduced energy poverty alleviation actions to 5 of its members that were developing their SECAP:

1. Municipality of Aigialeia
2. Municipality of Chalki
3. Municipality of Domokos
4. Municipality of Kalamata
5. Municipality of Tripoli

Some of the above 16 municipalities had a Sustainable Energy (and Climate) Action Plan in place before the POWERPOOR support, but none of these municipalities included specific actions to alleviate energy poverty in their SECAP. Moreover, there were no precise measurements available regarding the number of energy-poor households in these areas, only rough estimations. However, when considering national energy

poverty indicators, it becomes evident that these municipalities have significantly high levels of energy poverty.

7.2 Technical support process and actions on energy poverty mitigation

Technical Support process

The support provided by the CTRACK50 project was about actions on the decarbonisation of the municipalities, with energy poverty alleviation actions included. Sustainable City, as a vibrant network of municipalities, focused on day-to-day support in developing and promoting energy poverty alleviation actions and incorporating them in the municipalities' SECAP when feasible. The support processes followed (by C-TRACK50 and Sustainable City) are the same, meaning bilateral meetings and regular coordination via phone calls and emails between the project team and the municipal staff, ensuring effective communication and collaboration. Additionally, discussions were held with the political representatives of the municipality to outline strategies, desired actions, and suitable methodologies for project implementation. Finally, in municipalities where a Decarbonisation Plan or a SECAP developed with energy poverty alleviation measures included, an open consultation meeting was conducted to gather input and feedback from various stakeholders on the draft plan, fostering inclusivity and ensuring a well-rounded approach to consulting. This comprehensive support framework aimed to facilitate successful project execution and foster active engagement from all relevant parties.

Involved stakeholders from pilot city

In each pilot municipality, during the consultation process, the stakeholders involved in the plan's development were the technical department of the respective local authority, interested groups of the local society (businesses, environmental groups, associations), and individual citizens. In some of the online meetings, mostly focused on financing opportunities for local actions and enhancement of multi-level governance, representatives from the Ministry of Energy, the Deposit of Loans and Funds (banking institution), the regional authority and energy and climate experts took part.

Actions on energy poverty mitigation proposed to pilot municipalities

A wide range of actions were proposed for the pilot municipalities supported by the NTUA (C-TRACK50 H2020 project) and Sustainable City, to increase awareness, educate people, and promote access to energy-saving solutions. One of the key actions is the creation of an energy poverty alleviation office, which would offer support and guidance to vulnerable consumers. Another crucial step is the distribution of information and educational material, such as leaflets, brochures, and presentations, to raise awareness about the issue of energy poverty and propose ways to mitigate it. Additionally, the creation of an online platform would provide a convenient way for people to access information and resources related to energy-saving practices. Finally, organising

informational actions, such as workshops, webinars, and public events, would offer opportunities for people to learn more about energy-saving solutions and connect with experts in the field. More specifically:

Information, awareness, and training activities: The proposed awareness and education actions that target the entire population are horizontal interventions. The contribution of the Municipality, associations, and civil society organisations, which are closer to vulnerable groups and can identify them more directly, is significant. Simple advice and small-scale actions that can be immediately implemented and become part of users' daily routine can be included in the information and education of citizens of all ages and groups. Such solutions include proper ventilation, appropriate shading, turning off lights when leaving a room, regulating temperature, and so on. The actions proposed are:

- **Information and awareness raising campaigns** in schools;
- **Energy supporters** for providing support to energy poor households;
- **Smart meters** installation for customised energy saving tips;
- Establishment of **Energy Poverty Alleviation Offices;**
- Use of **tools** to estimate the number of energy poor;
- **Awareness raising initiatives and events for citizens;**
- Creation of an informative **online platform;**
- Use of relevant **tools (e.g., POWERPOOR Toolkit)** to detect energy poor households;
- Use of the **POWERPOOR Energy Poverty Guidebook** for energy planning.

Increasing the Energy Efficiency of Buildings: Addressing the low energy efficiency of residential buildings is a matter of strategic importance in combating energy poverty and is aligned with the goals of the Energy Efficiency Directive for reducing energy waste, lowering expenses for energy needs, and achieving other benefits. It is worth noting that the majority of the C-Track50 pilot municipalities' housing stock was constructed prior to 1980, the year when the building insulation regulations were implemented. As a result, these buildings lack thermal protection and therefore offer significant potential for energy savings through interventions at the level of the building envelope and systems. The actions proposed are:

- Further utilisation of **Energy Performance Contracts** for energy upgrade projects,
- Application of the most **efficient energy-saving measures as a priority**, such as the wall and roof insulation, air sealing, double glazing, and the systematic

maintenance of heating systems;

- Promotion of **collective schemes for energy upgrade projects** in homes (building blocks or at neighbourhood level) to achieve economies of scale;
- Application of the **Directive on the Energy Performance of Buildings** in new and renovated buildings.

Renewable Energy Sources penetration: The use of renewable energy sources can contribute significantly to alleviate energy poverty by providing stable and economically affordable energy to the citizens of the Greek pilot Municipalities. This can be supported and accelerated by the citizens' active engagement in the energy system and assuming the dual role of consumer and producer (prosumer) through (virtual) net-metering schemes. Collective renewable energy projects and support by municipalities, can further enable energy poor households to cut their bills. The actions proposed are:

- Enhancement of **energy self-consumption (net-metering schemes) in households** with provision of incentives and financial subsidies;
- Establishment of **Energy Communities**, by the citizens or/and the municipalities to support households affected by energy poverty;
- Energy supply from RES to the grid at improved prices, **"Energy Contract".**

Actions have been included in:

Decarbonisation plans to 2050 that are compliant with CoM guidelines and valid to be submitted as SECAPs in CoM platform:

- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Aliartos;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Voula Vari Vouliagmeni;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Chalkida;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Elliniko Argyroupoli;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Eretria;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Faistos;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Farsala;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Ilioupoli;

- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Loutraki;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Pylos Nestor;
- Long term energy plan for energy and climate towards carbon neutrality (Decarbonisation plan 2050) of Municipality of Vrilissia.

Sustainable Energy and Climate Plans

- Sustainable Energy and Climate Plan of Municipality of Aigialeia;
- Sustainable Energy and Climate Plan of Municipality of Chalki;
- Sustainable Energy and Climate Plan of Municipality of Domokos;
- Sustainable Energy and Climate Plan of Municipality of Kalamata;
- Sustainable Energy and Climate Plan of Municipality of Tripoli.

List of energy poverty mitigation actions included in the SECAP or other document

The actions included in the Decarbonisation Plans supported by the H2020 C-TRACK50 project in the 11 greek municipalities (Aliartos, Voula Vari Vouliagmeni, Chalkida, Elliniko Argyroupoli, Eretria ,Faistos, Farsala, Ilioupoli, Loutraki, Pylos Nestor, Vrilissia) were the following:

- Information and awareness raising campaigns in schools;
- Energy supporters and mentors as consultants;
- Smart meters installation;
- Establishment of Energy Poverty Alleviation Offices;
- Use of tools (POWERPOOR toolkit) to estimate the number of energy poor;
- Awareness raising initiatives and events for citizens;
- Further utilisation of Energy Performance Contracts for energy upgrade projects;
- Application of the most efficient energy-saving measures as a priority;
- Promotion of collective schemes for energy upgrade projects in homes;
- Enhancement of energy self-consumption (net-metering schemes) in households;
- Establishment of Energy Communities or Cooperatives;
- Energy supply from RES to the grid at improved prices, "Energy Contract".

The actions included in the Sustainable Energy and Climate Action Plans supported by the Sustainable City in the 5 supported municipalities (Aigialeia, Chalki, Domokos, Kalamata, Tripoli) are:

- Seminars – workshops for citizens aiming at informing them about energy poverty, measures, and financing schemes to adopt innovations to face it;
- Establishment of a municipal energy poverty alleviation office;
- Adoption of tools (POWERPOOR toolkit) for identifying energy poor citizens;
- Establishment of an Energy Community;
- Awareness raising actions for citizens (cycle of seminars, distribution of information/educational material);
- Creation of online platform for municipalities to exchange information;
- Participation in European or national funding programmes;
- Application of the Directive on the Energy Performance of Buildings in new and renovated buildings;
- Actions for increasing the Energy Efficiency of Buildings.

8. Inclusion of Energy Poverty mitigation actions in SECAPs – Hungary

8.1 Baseline analysis

Within the POWERPOOR project, Hungary identified and received support letter from 5 municipalities:

Hungarian pilot municipalities

- Józsefváros (8th district of Budapest), 76 811 inhabitants, joined CoM in 30/11/2020;
- Ferencváros (9th district of Budapest), 59 056 inhabitants;
- Terézváros (6th district of Budapest) 37 586 inhabitants, joined CoM in 27/2/2020;
- Bükkszentkereszt, 1 257 inhabitants, joined CoM in 15/11/2012;
- Nyíregyháza (capital of Szabolcs-Szatmár-Bereg county), 117 487 inhabitants, joined CoM in 28/4/2016

The municipalities together count 288 198 inhabitants, the lowest population in Bükkszentkereszt and the highest in Nyíregyháza. All municipalities are affected by different dimensions of energy poverty. Józsefváros is a district of the capital city, Budapest, where inhabitants mostly live in apartments in old, historical buildings. B̨ükkszentkereszt is a smaller settlement with family houses and gardens in Borsod-Abaúj-Zemplén county, one of the most deprived regions of Hungary.

Currently 3 from the 5 pilot cities have a SECAP approved and in force: Józsefváros, Terézváros and Nyíregyháza. Ferencváros has its' climate strategy (based on similar methodology as the SECAP of Covenant of Mayors), where it states the plan to join Covenant of Mayors by 2024 and to prepare a SECAP subsequently. Bükkszentkereszt has joined Covenant of Mayors in 2012 and has issued its SEAP (Sustainable Energy Action Plan) in 2013, which was reviewed in 2019.

8.2 Technical support process and actions on energy poverty mitigation

Technical Support process

During the project, 3 workshops were organised for the pilot municipalities, discussing the progress of the project, agreeing on further collaboration and tasks. The workshops were organised online and PowerPoint presentations were used.

A general meeting and discussion had been organised with the pilot municipalities in February 2023. The participants had the opportunity to share experience with the POWERPOOR toolkit and methodology. They also shared achievements and challenges of the household visits and running the Energy Poverty Alleviation Office.

Energiaklub outlined opportunities for further collaboration and encouraged participants to take further actions and include energy poverty alleviation into their

strategy planning. A good example of ongoing collaboration with Józsefváros and Energy Poverty Advisory Hub (EPAH) was presented. Energiaklub described the process of providing technical assistance to Józsefváros in mitigating and measuring energy poverty, which will result in the re-evaluation of Józsefváros's SECAP and inclusion of more targeted measures alleviating energy poverty. The pilot municipalities were encouraged to consider application for the next opening call of EPAH and use this opportunity to include energy poverty measures into their strategies.
It was a challenge to reach the pilot municipalities who turned out to be less respondent. The workshops were held with relatively high participation, even with more representant from one municipality. However, only representants from Nyíregyháza and Józsefváros joined the discussion meeting in February 2023. All notes and the presentation, including information on the EPAH opening call, were sent to the pilot municipalities via email.
The Energy Poverty Guidebook for Energy Planning and the EPAH assistance was further disseminated via social media platforms.

Involved stakeholders from pilot city

Józsefváros

- Department of District Management
- Office of Urban Management and Green Programmes
- Mayor's office – Deputy of Mayor
- Mayor's office – representant of Communications Department

Terézváros

- Green Office representant

Ferencváros

- Environmental protection officer
- Tender team leader

Nyíregyháza

- Project assistant
- Project manager
- Head of Institution
- Team leader of Social Department

Bükkszentkereszt

- Mayor

Actions on energy poverty mitigation

Energiaklub organised 3 workshops and 1 informal discussion meeting with the pilot municipalities. The following measures were proposed to alleviate energy poverty:

1. Consider opening energy poverty alleviation office;
2. Establish a network of Energy Supporters and Mentors who are in direct contact with vulnerable households and can perform energy efficiency advisory;

3. Train social workers who are in daily contact with vulnerable households to be able to perform energy poverty evaluation and provide low-cost measure advice;
4. Utilise POWERPOOR toolkit to identify vulnerable households;
5. Apply for EPAH's opening call of proposals in collaboration with an expert organisation;
6. Utilise energy poverty studies and information available on EPAH's website;
7. Raise awareness among citizens about energy poverty and its alleviation options.

Actions have been included in:

Józsefváros's SECAP (2022): contains specific measures targeting energy poor households. This municipality even advanced further in alleviating energy poverty – in collaboration with Energiaklub and EPAH there is an ongoing effort to implement energy poverty monitoring in social worker's daily tasks. These workers are in daily contact with vulnerable households and have a great experience from the field. They will facilitate gathering further data from energy poor households. The data will be processed and Józsefváros's SECAP will be re-evaluated based on the results. Thanks to this process, measures tackling energy poverty can be further specified and a long-term monitoring can be established.

Other pilot municipalities haven't specified energy poverty mitigation actions in their SECAP or Climate Strategy, however, many of them can have an indirect positive impact on vulnerable households. These measures are described more in detail in the next chapter.

List of energy poverty mitigation actions included in the SECAP or other documents

Józsefváros municipality's measures in SECAP:

Józsefváros is ahead of the other pilot municipalities in terms of reflecting energy poverty measures in their SECAP. There is an ongoing collaboration with Energy Poverty Advisory Hub (EPAH) and Energiaklub to review and develop targeted measures to alleviate energy poverty.

Current measures:

1. Mapping energy poverty in the municipality;
- Launching a comprehensive and structured home visit programme, carried out by trained professionals;
- Integrating home visits and energy efficiency evaluating questionnaire into daily work of social workers who are in regular contact with vulnerable households;
- Re-evaluating vulnerable households every 1-2 years

2. Interest-free credit subsidies to support the replacement of large household appliances
- Replacement of old refrigerator in 90% of households by 2030;

3. Applying low-cost measures

- Performing awareness-raising programmes;
  - Distributing leaflets, brochures and flyers;
- Continuing to run the energy poverty alleviation office and expanding the range of services;
  - Establish long-term collaboration with universities and involve university students through internship programmes;

4. Upgrading energy efficiency of 20% of family houses and 35% of condominiums by 2030.

Terézváros municipality's measures in SECAP:

The SECAP proposes 53 measures under the themes of mitigation and adaptation, grouped according to the SECAP's sectoral categories, and explained in detail. There are no measures specified for vulnerable households, however, many have an indirect positive impact on energy poverty, such as:

1. Climate Office - residential "climate and energy advice point";
2. Partial renovation of apartment buildings to increase energy efficiency and reduce vulnerability;
3. Modernisation of heating system of apartment buildings;
4. Household appliance replacement programme;
5. Energy saving advisory for vulnerable households.

Nyíregyháza city's measures in SECAP:

Nyíregyháza's SECAP doesn't mention energy poverty, although some of the goals and measures contributes to its' alleviation. The SECAP sets out a vision for Nyíregyháza to become a liveable, energy efficient and environmentally conscious green city in the medium term. The overall objectives are to be met through reducing the use of fossil fuels, increasing the share of renewable energy, creating a smart city, raising environmental awareness, and protecting the environment from the impacts of climate change.

The SECAP specifies city areas and identifies, which apartment building will be insulated, which will have deep energy efficiency renovation or have solar PV system installed.

Measures of the Climate Strategy of Ferencváros:

The Ferencváros Climate Action Plan sets out a number of mitigation, adaptation, and awareness-raising objectives. It does not specifically address energy poverty, but certain measures will have an indirect positive impact on alleviating energy poverty.

The Climate Repository establishment is one of the proposed actions, being an online public knowledge platform which gives particular attention to vulnerable households. The Climate Strategy suggests setting a Climate Platform, a community forum improving

synergies between climate actions, providing collective or individual assistance or raising awareness.
The Action Plan states that the municipality will prepare for joining the Covenant of Mayors by 2024 and prepare its own SECAP.

Bükkszentkereszt municipality's measures in SEAP:
The measures are not specifically targeted to vulnerable households, however, they are indirectly impacted by many proposed actions. The SEAP details several installations in the residential sector increasing energy efficiency, such as roof and wall insulations, adjustable heating installations or replacement of doors and windows. The SEAP aims to provide hot water to 10% of the municipality's population from solar collectors by 2020.
The 2019 SEAP review proposes establishment of Energy advisory office, offering free consulting to the public with aim to reduce household energy consumption. The topics covered by the advisory office would be energy efficiency renovations, solar panel installations, possibility of using heat pumps in residential buildings, promoting energy saving and information on financing and subsidies.

9. Inclusion of Energy Poverty mitigation actions in SECAPs – Latvia

9.1 Baseline analysis

Within POWERPOOR project working on incorporation of actions of energy poor citizens in SECAPs, ZREA worked with 3 municipalities - Jelgava city, Jekabpils county and Dobele county, together comprising territory of 134 504 inhabitants. SECAP of Jelgava City 2021 - 2030, has been approved on 29/10/2020, SECAP of Jekabpils City 2021 - 2030, has been approved in June 2021. There is also SECAP 2021-2030 for Auce county, approved in 2021, but due to administrative reform in summer 2021 Auce has been merged in bigger – Dobele county for which the SECAP is planned to be elaborated in the coming years. Jelgava city and Jekabpils county are signatories of Covenant of Mayors, Dobele is not signatory of Covenant of Mayors.

Both Jelgava city and Jekabpils county SECAPs had included energy poverty mitigation as part of the activities, as well as several other actions having positive effect on reduction of energy poverty, whereas through the process of POWERPOOR consultations and discussions more detailed understanding and more concrete actions have been formulated for mitigation of energy poverty.

Jelgava city measures, included in the current SECAP in force:

1. Increasing the energy efficiency of residential buildings, installation of RES technologies for energy self-consumption, if technically and economically justified;
2. Promotion of energy self-generation for self-consumption;
3. Energy poverty mitigation;
4. Encouraging consumers to control their energy consumption and expenditure through smart meters;
5. Informative events on energy saving and increase of energy efficiency, information on daily energy consumption habits/use of energy equipment.

Jekabpils county SECAP measures, included in the current SECAP in force:

1. Encourage the creation of pre-conditions to enable citizens to produce electricity for their own consumption using double-side metering with the grid;
2. Increase of energy efficiency of multi-residential buildings;
3. Promotion of energy self-generation for self-consumption;
4. Energy poverty mitigation.

Auce/Dobele SECAP measures, included in the current SECAP in force:

1. Promotion of energy efficiency measures in multi residential buildings;
2. Information on energy bills about energy efficiency measures, about possibilities to reduce energy consumption;

3. Informative events on energy efficiency.

9.2 Technical support process and actions on energy poverty mitigation

Technical Support process

Using the Energy Poverty Guidebook for Energy Planning ZREA provided technical support to formulate the set of actions for mitigating energy poverty.

Firstly, the relevant stakeholders were approached via e-mail and phone, Energy Poverty Guidebook for Energy Planning was sent via e-mail for getting familiar with it and then the online meeting set up to brainstorm and compare the existing energy poverty measures with the approach defined in Energy Poverty Guidebook for Energy Planning and discuss whether further developments would be needed and any actions added. Also, the measure samples of other partner SECAPs have been introduced.

The following list of energy poverty mitigation actions were proposed for the pilot municipalities:

- Adopting the tools for identifying energy poor citizens;
- Tool for monitoring households' energy consumption to be used for providing individual assistance to save energy and to define public policies;
- Workshops for (energy poor) citizens informing them about energy saving measures and financing schemes supporting improvement;
- Supporting the preparation of project documentation for the renovation of apartment buildings;
- Encouraging the use of energy poverty alleviation office;
- Use of the POWERPOOR tools – POWER TARGET, POWER ACT, POWER FUND in tackling energy poverty;
- Distribution of informational/educational materials on behavioural changes, or more substantial measures such as building renovation, upgrading of heating system etc.;
- Facilitation of joint energy initiatives, assistance in the formation and promotion of renewable energy communities (join a community, create a community, operate a community);
- Study for the feasibility of Renewable Energy Communities;
- Technical, legal and economic advice on energy poverty;
- Informative support to household owners on renewable energy installations and/or energy efficiency investments;
- Education and dissemination of information about energy efficiency and energy poverty to the general public and especially to the relevant authorities;

- Train social workers who are in daily contact with vulnerable households to be able to perform energy poverty evaluation and provide low-cost measure advice.

Involved stakeholders from the pilot city

Jelgava city

- Representatives from the Development and City Planning Department
- Representatives from the Social Department
- Representatives of house maintenance company
- Energy manager of the city
- District heating provider of the city
- ZREA representatives

Jekabpils county

- Representatives from the Development Department
- Representatives from the Social Department
- Representatives of house maintenance company
- Energy manager of the city
- ZREA representatives

Auce/Dobele county

- Representatives from the Development Department
- Representatives from the Social Department
- Representatives of house maintenance company
- ZREA representatives

Actions have been included in:

SECAP of Jelgava city 2021 – 2030[16] ;
SECAP of Jekabpils city 2021 – 2030[17];
Prepared proposals for SECAP of Dobele county 2023 – 2030.

List of energy poverty mitigation actions included in the SECAP or other document

All three municipalities - Jelgava city, Jekabpils county, Dobele county have agreed that more detailed measures for alleviation of energy poverty would be necessary and the proposed list and discussions on energy poverty could serve as good basis for more detailed measures for SECAPs. All three municipalities have agreed to add proposed detailed measures on energy poverty as annex to SECAP for information, for inclusion when the review of SECAP will be done. The currently included measures comprise:

Jelgava city SECAP:

[16] Actions added as annex
[17] Actions added as annex

1. Increasing the energy efficiency of residential buildings, installation of RES technologies for energy self-consumption, if technically and economically justified;
2. Promotion of energy self-generation for self-consumption;
3. Energy poverty mitigation;
4.Encouraging consumers to control their energy consumption and expenditure through smart meters;
5. Informative events on energy saving and increase of energy efficiency, information on daily energy consumption habits/use of energy equipment.

Jekabpils county SECAP:

1. Encourage the creation of pre-conditions to enable citizens to produce electricity for their own consumption using double side metering with the grid;
2. Increase of energy efficiency of multi-residential buildings;
3. Promotion of energy self-generation for self-consumption;
4. Energy poverty mitigation.

Dobele county SECAP:

1. Promotion of energy efficiency measures in multi residential buildings;
2. Information on energy bills about energy efficiency measures, about possibilities to reduce energy consumption.

10. Inclusion of Energy Poverty mitigation actions in SECAPs – Portugal

10.1 Baseline analysis

The Portuguese pilot cities are Figueira da Foz, Alcochete, Barreiro, Moita and Montijo. With the Municipality of Figueira da Foz, Coopérnico has been working directly with Catarina Sousa and João Martins, responsible to draw up the Sustainable Energy and Climate Action Plan, and a protocol was signed between Coopérnico and the President of City Hall formalising in this way our collaboration. The work carried out with Alcochete, Barreiro, Moita and Montijo municipalities has been done through S.Energia, a POWERPOOR SLG member, the Regional Energy Agency for these four municipalities.

The City of Figueira da Foz is a signatory of the Covenant of Mayors since 2019 and has been drawing its SECAP and the Municipal Climate Action Plan also, both will integrate actions to alleviate energy poverty.

The Cities of Alcochete, Barreiro and Moita are signatories of the Covenant of Mayors since 2013, 2011 and 2014, respectively and their SEAPS did not include any actions to alleviate energy poverty. The Alcochete Plan was in force during the period 2017-2020, the Barreiro Plan from 2012-2020 and the Moita Plan from 2016-2020. All these Cities intend to elaborate their SECAP in the near future but at the moment they are focused on their Municipal Climate Action Plans design.

From this group of Cities, the one that has its SECAP drawn up, awaiting Municipal Assembly approval is Montijo, where actions to tackle energy poverty have been integrated.

10.2 Technical support process and actions on energy poverty mitigation

Support process

The technical support provided by Coopérnico to both City of Figueira da Foz and S.Energia was through ZOOM working sessions and electronic mail. When the POWERPOOR Guide became ready, it was sent to both institutions, as well as when the Portuguese version was translated.

Involved stakeholders from pilot city

The City of Figueira da Foz points out in its SECAP as stakeholders the Council Parishes. In the last working session, Figueira da Foz was told that it is fundamental to involve the Social Action Departments of both municipality and private institutions in order to reach the most vulnerable citizens, since social technicians already do regular home visits. As

well as Municipal Police agents set an interesting stakeholder to account within rural areas, for instance.
In one of the SECAP actions described as promoting the implementation of projects for the use of renewable energy crediting surpluses for vulnerable citizens, Coopérnico is appointed as a stakeholder since it will also be the investor.
S.Energia lists as stakeholders in Montijo's SECAP CENSE (a POWERPOOR SLG member and EPAH's expert institution), FCT-NOVA, Coopérnico and ADENE (National Energy Agency).

Actions on energy poverty mitigation

The following list of energy poverty mitigation actions were proposed for the pilot municipalities:

- Training social and energy technicians to deliver to energy poverty households advice and information to consume energy better and also to implement low-cost efficiency energy measures;
- Involvement of primary and secondary schools to disseminate good practices in the use of energy. This initiative can result in the transmission of knowledge to their families too;
- Involvement of local universities which teach courses related to social area, energy, or renewable energies whose students may do home visits;
- Involvement of citizens benefiting support from mitigation energy poverty programmes in public initiatives where they can share the implemented actions and the impacts they brought to their lives;
- Inclusion of energy literacy in an existing or future one-stop-shop/local office;
- Organisation of regular Info Days on work developed in the municipality to tackle energy poverty, involving local public and private institutions and also households benefiting from support programmes;
- Distribution of Energy Box to the most vulnerable citizens (S.Energia is already implementing this action as part of its involvement in the CEES project).

Actions have been included in:

SECAP of Montijo;

City of Figueira da Foz is developing 2 documents: the Municipal Climate Action Plan (MCAP) and the Sustainable Energy and Climate Action Plan (SECAP). MCAP is expected to be completed in April 2023, to be submitted for Public Consultation in May 2023, and the SECAP is expected to be completed in September 2023.
However, these 2 Plans have not yet been approved.

List of energy poverty mitigation actions included in the SECAP or other document

In the SECAP of Montijo drawn up by S.Energia, not in force yet - waiting for approval, the actions included are:

- Territorial mapping based on data and Energy poverty vulnerability index developed by CENSE (Gouveia et al, 2019);
- New or reinforcing existing specific support structure to tackle energy poverty (e.g., one-stop-shop/local energy poverty office);
- Training municipal and local authorities' technicians as well as other key actors (e.g., social services) on good practices of energy consumption and energy efficiency of buildings;
- Studies on energy renovation of buildings;
- Study for the feasibility of Renewable Energy Communities;
- Rehabilitation, improvement, and energy renovation support;
- Involvement in national and European projects related to energy poverty.

As mentioned before, City of Figueira da Foz is writing 2 documents: the Municipal Climate Action Plan (MCAP) and the Sustainable Energy and Climate Action Plan (SECAP). MCAP is expected to be completed in April 2023, to be submitted for Public Consultation in May, and the SECAP is expected to be completed in September 2023.

Both MCAP and SECAP will include the following actions:

- Creation of a municipal Energy Working Group managed by a municipal Energy Coordinator;
- Creation of a Mobile Office to give support to Mitigation of Energy Poverty actions (powered by electricity), decentralised, which will move around Council parishes, to help raising awareness of energy poverty;
- Establishment of a local office (one-stop-shop) to give citizens support, on advice and implementation of energy efficiency measures and energy production from renewable sources (this action will include training actions for technicians);
- Implementation of a Municipal PV Plant, which surpluses will be in favour to vulnerable households;
- Creation of Renewable Energy Communities (namely in schools, condominiums, etc);
- Promotion of a communication campaign to raise up awareness on Energy, namely energy poverty, in partnership with local schools to carry out awareness

actions and informational sessions, involving target-groups, local key agents and communities focusing energy literacy.

However, these 2 Plans have not yet been approved.

11. Inclusion of Energy Poverty mitigation actions in SECAPs – Spain

11.1 Baseline analysis

Energy poverty alleviation is a relatively new issue in most of the municipalities addressed by the POWERPOOR project in Spain. Similarly, in many of the municipalities the SECAPs are not adopted yet and some of them have recently started to work on the plans. However, it is to mention that in some of the cases regional development agencies have started to work on addressing energy poverty before the municipalities themselves, and that is specially in the case of the regions that are formed by small municipalities. For that reason, POWERPOOR has directly supported municipalities in some of the cases, and the regional development agencies in other cases. The municipalities that have been supported directly are Iruñea-Pamplona (203.000 inhabitants), Vitoria-Gasteiz (253.000 inhabitants), Hernani (20.000 inhabitants), and Valencia (792.000 inhabitants). The regional development agencies that have received direct support are Oarsoaldea (4 municipalities, 70.000 inhabitants), Goierri (19 municipalities, 45.000 inhabitants), Tolosaldea (28 municipalities, 48.000 inhabitants) and Debabarrena (8 municipalities, 72.000 inhabitants).
Regarding the energy and climate plans, 5 of the above-mentioned municipalities had SECAPs in force at the beginning of the project: Iruñea-Pamplona, Vitoria-Gasteiz, Errenteria (Oarsoaldea region), Hernani and Valencia. Only the last two municipalities had concrete actions to alleviate energy poverty on their plans.

11.2 Technical support process and actions on energy poverty mitigation

Technical Support process

The support has been provided both bilaterally and collectively to the different municipalities. In all the cases there has been communication through phone calls and emails, providing information and assistance about project-related aspects as well as other relevant aspects such as the EPAH calls. Also, the POWERPOOR online trainings have been relevant when providing with technical assistance to the municipalities and regional development agencies, and at least one representative per each organisation has participated in the trainings. Besides the mentioned organisations, representatives of other municipalities and regional development agencies have participated in the trainings: Bergara, Balmaseda, Andoain, Irun, Tierra Estella region, Urola Kosta region, Urola Erdia region, Zona Media de Navarra region and Orexa. In the trainings, technical assistance has been provided transversally through all the modules, but with special attention to Module 4.

In addition, face-to-face meetings and other relevant events have served to support the municipalities in tackling energy poverty. The most relevant ones have been, in one hand, the Stakeholder Liaison Group online meetings, and in the other, the Info Days organised in September 2022 in the municipality of Hernani. In parallel, the Energy Poverty Guidebook for Energy Planning has been shared with all the pilot municipalities and regional development agencies, and the translated version has also been shared lately.

Involved stakeholders from pilot city

Iruñea-Pamplona:

- Manager of the Municipal Energy Agency
- Technician of the Municipal Energy Agency

Vitoria-Gasteiz:

- General coordinator of the Social Policies Department
- Technician of the Social Policies Department
- Responsible of the Sustainability, Climate and Energy service
- Technician of the Sustainability, Climate and Energy service
- Technician of the Sustainability, Climate and Energy service

Hernani:

- Technician of the Social Services Department
- Member of the local Renewable Energy Community
- Major of the municipality

Valencia:

- Technician of the Municipal Energy Office
- Technician of the Climate and Energy service
- Technician of the Energy Service

Oarsoaldea region:

- Responsible of the Urban Regeneration and Mobility Area
- Technician of Economic and Territorial Development Strategy
- Technician of the Regional Energy Office
- Technician of Urban Rehabilitation
- Representatives of Municipal Social Services
- Municipal energy technician

Goierri region:

- General manager of the Regional Development Agency
- Project coordinator and Entrepreneurship Service
- Representatives of the municipalities

Tolosaldea region:

- Technician of Municipal Department and Sustainable Development

- Representatives of Municipal Social Services

Debabarrena region:

- Technician of Sustainable Development.
- Environmental technician of the municipality of Eibar
- Representative of the municipality of Eibar

Actions on energy poverty mitigation

The following list of energy poverty mitigation actions were proposed for the pilot municipalities:

- To support the creation of Renewable Energy Communities;
- Inclusion of energy poverty in the Energy Communities support programmes, including the POWER-FUND tool;
- Training for the municipal Social Services and relevant associations;
- Training workshops for citizens about the energy use and consumption;
- Dissemination activities to raise awareness about energy poverty;
- To support residential renovations, with special attention in vulnerable collectives;
- Establishment of energy offices;
- Inclusion of energy poverty in the existing energy offices;
- To improve the communication and coordination of the municipal and regional Social Services;
- Measurement of the municipal/regional energy poverty incidence;
- Identification of vulnerable citizens through the use of POWER-TARGET tool;
- Simple energy audits, including the use of the POWER-ACT tool;
- Inclusion of the POWERPOOR training material for the internal capacity building of the municipality;
- Optimisation of the energy contracts of vulnerable citizens.

Actions have been included in:

Sustainable Energy and Climate Action Plans:

- Integrated Energy Transition Action Plan, as part of the SECAP 2030 (Vitoria-Gasteiz);
- Sustainable Energy and Climate Action Plan of Eibar 2022-2030. (Part of Debabarrena region);
- Sustainable Energy and Climate Action Plan of Errenteria 2020-2030 (Part of Oarsoaldea region);

Other planning documents:

- Vulnerability and energy poverty in Oarsoaldea region: diagnosis and action plan;

- Energy poverty - A first diagnosis in Goierri region;
- Energy poverty in Tolosaldea region - Diagnosis and action plan;
- 2030 Energy Transition and Climate Change Strategy of Pamplona.

List of energy poverty mitigation actions included in the SECAP or other document

Iruñea-Pamplona:

- Municipal plan to fight energy poverty, including: a diagnosis of the current situation, establishment of protocols, definition of monitoring indicators, evaluation of the current measures, energy renovations, public transport and dissemination mechanisms;

Vitoria-Gasteiz:

- Support for the urban rehabilitation, including energy poverty indicators;
- Creation of local energy communities;

Oarsoaldea region:

- Service specialised in energy poverty;
- Technical coordination network to alleviate energy poverty;
- Communication and awareness campaigns;
- Training for professionals;
- Promoting alliances with private actors;
- Carrying out interventions in homes using micro-efficiency kits;
- Social integration plans for energy operators;
- Mapping the distribution and impact of energy poverty in the region;

Errenteria (part of Oarsoaldea region):

- Empowering energy poor citizens through collective energy initiatives;
- Feasibility study to purchase green energy from the electricity pool and create a public energy retailer;
- Implementation of specific measures against energy poverty;
- Encouraging the audit and intervention programme of energy poor households;
- Carrying out a periodic study on energy poverty and develop a protocol for action;

Goierri region:

- Training for municipal social technicians and associations;
- Workshops for citizens on the use and consumption of energy;
- Raising awareness about energy poverty at a municipal and regional level;
- Promoting housing renovations;
- Promoting energy communities;
- Creation of the energy office;
- Consolidation of the Social Council;

Tolosaldea region:

- Integrating energy poverty management into the virtual energy office;
- Assistance to the vulnerable citizens and training for the social service professionals;
- Creation of identification and derivation protocols;
- Organising communication and awareness campaigns;
- Creation of energy poverty coordination network;
- Encouraging employment plans in the energy and energy poverty sector;

Eibar (part of Debabarrena region):

- Promote awareness and training programmes for professionals who work with vulnerable groups;
- Carry out visits and energy interventions in vulnerable homes to improve their energy efficiency;
- Promote the creation of energy communities.

12. Inclusion of energy poverty mitigation actions in SECAPs – EU level

ICLEI EURO, has promoted the integration of energy poverty mitigation measures into SECAPs in general throughout the course of POWERPOOR. As part of the overall capacity building material created under WP3, especially Module 4 has been dedicated on explaining the benefits of considering energy poverty mitigation within the framework of municipal climate & energy planning and specifically SECAPs. The module also explains how to incorporate energy poverty mitigation actions into the monitoring & evaluation cycle of municipal climate planning by making use of the Covenant of Mayors reporting framework and, specifically the energy poverty indicators. Five of these trainings have been carried out on the EU level. Following up on this, and to increase the number of EU-level municipalities receiving support by POWERPOOR (in countries not covered by the project), a series of dedicated trainings only for municipal staff is currently being prepared. This will be done in collaboration with the SUN4All capacity building programme as part of its community of practice. This is a promising synergy due to the inherent focus of SUN4ALL project on mitigating energy poverty via energy communities and utility-based assistance programmes. The aim is to present the POWERPOOR tools and approach in conjunction with the models developed by the 4 SUN4ALL pilots (Barcelona, Rome, Almada, Coer de Savoie) to convey an understanding of the benefits of joint energy initiatives (incl. Energy communities) in order to lower citizen's electricity costs. In addition, synergies are being sought with the Net ZeroCities project to integrate the POWERPOOR approach into the modules offered by NetZeroCities to its participating municipalities. In addition to wanting to reach a wider audience of municipalities, the exact training activities, which are currently being defined, will frame energy poverty mitigation and the POWERPOOR approach in relation to overall city ambitions for climate neutrality. It is expected that training activities will commence in June 2023 and will run until the end of the POWERPOOR project. A report on the exact content of experiences of the carried-out trainings, as well as how the municipalities benefited from them, can be submitted as an annex to this deliverable.

Conclusions

As part of POWERPOOR project the partners provided technical support to several municipalities to add actions that tackle energy poverty in their energy and climate plans. Using the Energy Poverty Guidebook for Energy Planning partners have provided technical support online or face to face to participating cities enabling them to formulate and include a set of actions/measures for mitigating energy poverty in their local energy planning. Municipalities that had a SECAP, or a SECAP under development or other similar document could decide whether to incorporate these actions.

Also, synergies with other projects were sought, such as use of C-TRACK 50 legacy (a Horizon 2020 funded project, coordinated by NTUA) and activation of the synergy between these two projects. Another synergy maintained was with Compete4SECAP (H2020) project, where the Croatian partner DOOR worked on the creation of 4 SECAPs for the cities of Velika Gorica, Rijeka, Zadar and Osijek and three of them - Rijeka, Zadar and Osijek decided to accept DOOR's proposal to include the POWERPOOR approach as a means to alleviate energy poverty in their SECAP. Also, synergies with the SUN4ALL and NetZeroCities projects have been employed especially in an EU level.

At least 60 municipalities had to be engaged by POWERPOOR partners: 7 in Bulgaria, 4 in Croatia, 4 in Estonia, 11 in Greece, 7 in Hungary, 3 in Latvia, 7 in Portugal, 7 in Spain, and 10 in an EU level.

All of the partners have managed to provide technical support to municipalities, overcoming challenges such as how responsive and willing to collaborate and improve measures to tackle energy poverty the municipalities were, if they were actually in the process of energy planning and were willing to incorporate the energy poverty mitigation actions, and potential changes in offices with upcoming elections.

The municipalities to which the technical support has been provided is in Bulgaria 7 (Sofia, Burgas, Sitovo, Radnevo, Shabla, Isperih, Valchidol), Croatia 4 (Velika Gorica, Rijeka, Zadar, Osijek), Estonia 4 (Tallinn, Tartu, Pärnu, Kuressaare), Greece 16 (Aliartos, Voula Vari Vouliagmeni, Chalkida, Elliniko Argyroupoli, Eretria, Faistos, Farsala, Ilioupoli, Loutraki, Pylou Nestoros, Vrilissia, Aigialeia, Chalki, Domokos, Kalamata, Tripoli), Hungary 5 (Józsefváros, Ferencváros, Terézváros, Bükkszentkereszt, Nyíregyháza), Latvia 3 (Jelgava, Jekabpils, Dobele) Portugal 5 (Figueira da Foz, Alcochete, Barreiro, Moita, Montijo), Spain more than 8 (Iruñea-Pamplona, Vitoria-Gasteiz, Hernani, Valencia, Oarsoaldea (4 municipalities), Goierri (19 municipalities), Tolosaldea (28 municipalities), Debabarrena (8 municipalities). While the support of municipalities in an EU level is ongoing.