SOCIALWATT

CONNECTING

OBLIGATED PARTIES

TO ADOPT INNOVATIVE SCHEMES TOWARDS

ENERGY POVERTYALLEVIATION

D2.2

Energy poverty action plans

April 2022 (revised)

The SocialWatt project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 845905

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PREFACE

SocialWatt will develop and provide utilities and energy suppliers with appropriate tools for effectively engaging with their customers and working together towards alleviating energy poverty. SocialWatt will also enable obligated parties under Article 7 of the Energy Efficiency Directive across Europe to develop, adopt, test and spread innovative energy poverty schemes.

SocialWatt will contribute to the following three main pillars:

1. Supporting utilities and energy suppliers to contribute to the fight against energy poverty through the use of decision support tools.
2. Bridging the gap between energy companies and social services by promoting collaboration and implementing knowledge transfer and capacity building activities that focus on the development of schemes that invest in renewable energy sources/energy efficiency and alleviate energy poverty.
3. Implementing and replicating innovative schemes to alleviate energy poverty.

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CONSORTIUM

ICCS	INSTITUTE OF COMMUNICATION & COMPUTER SYSTEMS	EL
IEECP	INSTITUTE FOR EUROPEAN ENERGY AND CLIMATE POLICY STICHTING	NL
RAP	REGULATORY ASSISTANCE PROJECT	BE
E7	E7 ENERGIE MARKT ANALYSE	AT
ISPE DC	ISPE PROIECTARE SI CONSULTANTA SA	RO
NATURGY	NATURGY ENERGY GROUP SA	ES
PPC	PUBLIC POWER CORPORATION S.A.	EL
CEZ VANZARE	CEZ VANZARE SA	RO
GREN	GREN JELGAVA (previously FORTUM)	LV
HEP ESCO	HEP - ESCO DOO ZA VODENJE I FINANCIRANJE PROJEKATA ENERGETSKE UCINKOVITOSTI	HR
EVISO	EVISO SRL	IT
CARITAS AUSTRIA	OSTERREICHISCHE CARITASZENTRALE	AT

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CONNECTING OBLIGATED PARTIES TO ADOPT INNOVATIVE SCHEMES TOWARDS ENERGY POVERTY ALLEVIATION

GA#: 845905 **Start Date:** September 2019
Topic: LC-SC3-EC-2-2018 **Duration:** 43 Months
Type of Action: CSA **Coordinator:** ICCS

Deliverable Number	D2.2
Deliverable Title	Energy poverty action plans
Work Package Number	WP2
Task Number	Task 2.2
Date of Delivery	April 2022 (revised)
Dissemination Level	Public
Work Package Leader	ISPE
Lead Beneficiary	RAP
Contributors	Louise Sunderland (Regulatory Assistance Project), Andriana Stavrakaki (ICCS), Konstantinos Koasidis (ICCS), Alisa Vlasa (CEZ Vânzare), Dan Serban (CEZ Vânzare), Vlad Oprea (CEZ Vânzare), Daniele Bergesio (eVISO), Carlo Cigna (eVISO), Valdis Rieksts-Riekstiņš (Gren Jelgava), Gundars Petersons (Gren Jelgava) Solvita Duka (Gren Jelgava), Igor Hegediš (HEP ESCO), Sandra Magajne (HEP ESCO), Camelia Vasile (ISPE), Ion Chițescu (ISPE), Ester Sevilla (Naturgy Foundation), Almudena Laguillo (Naturgy Foundation), Ioanna Giannouli (PPC)

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1 INTRODUCTION

1.1 SOCIALWATT PROJECT

SocialWatt, a project funded by the EU's Horizon 2020 Research and Innovation Programme, aims to enable energy suppliers and utilities to develop, adopt, implement and spread innovative energy poverty schemes across Europe. More specifically, the project aims to enable energy suppliers and utilities to build their capacity and use tools developed within the framework of the project to effectively engage with their customers and implement schemes that alleviate energy poverty.

Three decision-support tools are being developed and tested as part of the project to support utilities to alleviate energy poverty:

- SocialWatt Analyser for identifying energy-poor households among clients, based on utilities' real energy consumption and cost data as well as other readily available data;
- SocialWatt Plan for evaluating the performance of several actions/schemes and selecting the optimal ones (in terms of cost and risk) to implement, in order to elaborate energy poverty action plans; and
- SocialWatt Check for monitoring and assessing the effectiveness of schemes implemented.

The SocialWatt tools are a set of user-friendly decision-support tools, with intelligible features to ensure ease of use. The three tools are designed to be used jointly to support utilities' efforts to alleviate energy poverty in an integrated way. They can also be used independently to meet specific needs. Figure 1 illustrates the interaction of the tools.

Figure 1: The SocialWatt tools

The SocialWatt utility partners have used the SocialWatt Analyser and Plan tools to support their analysis of energy poverty within their customer bases and assess the suitability of schemes and finance mechanisms to alleviate energy poverty. These results have helped to inform the utilities' development of their energy poverty action plans which are presented in this report. The energy poverty action plans will guide the utilities' energy poverty alleviation work for the duration of the project and beyond.

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1.2 INTRODUCTION TO UTILITY PARTNER ENERGY POVERTY ACTION PLANS

Presented in the next chapters are the energy poverty action plans developed by the SocialWatt utility partners (updated in April 2022). These action plans are short summaries of more comprehensive internal plans that are in some cases still undergoing continued development.

The action plans have been developed in challenging contexts for different reasons for each of the utilities. Common to all utilities are the challenges and uncertainty created as a result of the ongoing COVID-19 pandemic and more recently the gas price increases. As households manage the effect of the pandemic and lockdowns on jobs and financial security, utilities are facing increased arrears on bills which can impact the availability of funds for new programmes. Utilities are also negotiating wholesale price rises of both gas and electricity and are playing a part in national policies to cushion the impact of the rises on households. The pandemic and social distancing requirements continue to create new challenges for face-to-face support and in-home services that are part of the energy poverty alleviation schemes developed within the action plans.

In addition to the global nature of the pandemic and the gas price crisis, individual utilities have faced specific challenges in developing long-term plans and dedicating resources. For example, two utilities have, within the life of the project undergone company takeovers, so implementation of the action plans will be subject to the investment decisions of the new owners. In other countries, regulatory uncertainty has made designing energy poverty schemes more difficult. Changes or expected changes to the national energy efficiency obligation scheme (EEOS) framework – for example, which parties are obligated to deliver savings, how energy saving measures will be valued and how energy-poor households are defined – make designing a long-term action plan of schemes that deliver savings within the EEOS challenging.

The action plans and the estimated impacts of the schemes should not be directly compared with each other. Some utilities are developing action plans to deliver savings within the structure of an EEOS, while others have developed their plans either in addition to their EEOS obligations or where there is no national obligation, as part of their corporate social responsibility. The energy and carbon savings that are expected as a result of the schemes have therefore been calculated using different methodologies – either in line with national EEOS official quantification or through other evidence-based approaches.

Table 1: Summary of utility energy poverty schemes to be implemented

Partner	Scheme	Details
HEP ESCO[1]	Energy efficient lighting	〉 Providing three new energy-efficient LED bulbs per household
	Establishment of a programme of customer information	〉 Initially through the distribution of leaflets sharing energy information, in the longer term through energy advice at information centres and via a website

[1] HEP ESCO is an energy service company (not a supplier/utility), although it is part of the biggest national energy company. As such, it will implement the schemes in collaboration with HEP ELEKTRA.

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Partner	Scheme	Details
PPC	Information campaign	〉 Brochure on the competitive advantages of heat pumps as a heating system alternative to oil boilers, distributed via energy bills.
	Online platform providing recommendations on energy efficiency	〉 Interactive platform that collects information on customer demographics, appliances and energy behaviour and provides personalised information on major energy uses and appliances, and recommendations and tips for increasing energy efficiency 〉 Vulnerable households to receive additional support to implement recommendations (e.g. through vouchers to replace a specific appliance)
	Programme on heat pumps	〉 Providing subsidy to PPC customers that invest in heat pumps. A higher level of subsidy available for energy poor and vulnerable customers,
EVISO	CONNECT	〉 Broad communication campaign using videos, social campaigns, web pages and interactions
	EQUIP	〉 Provision of energy training to the staff of social services organisations to enable them to give advice to energy-poor households
	COUNSEL	〉 Trained social services staff will visit households, answer questionnaires, provide energy advice and agree on a possible energy counselling session by energy experts from eVISO
	REPLACE	〉 Replacement of inefficient household appliances
GREN JELGAVA	Information and communication	〉 Informative brochures with energy-saving advice; recipients are prompted to respond to a questionnaire providing access to the Renovate Your Home scheme
	Renovate Your Home	〉 Free set of LED lights to eligible households
	Smart Home	〉 Smart software installation in social housing that automatically optimises energy use in a building based on data from smart sensors within the building and online weather forecasts
CEZ Vânzare	Helping Hand	〉 Grant competition campaign to finance projects that aim to reduce energy poverty, designed in partnership with local charity
	Smarter Home	〉 Thermostats offered to customers who will pay for them at fixed rates without interest (on-bill financing) 〉 Offered to all customers (target: 2,000 households, of which 350 households are expected to be energy poor)
	Renovate Your Home	〉 Provision of energy-saving LED bulbs to energy-poor households

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Partner	Scheme	Details
	Information and communication	〉 Educational campaigns for children, customers and non-customers, on the efficient use of energy
NATURGY	Energy advice	〉 Mailing energy-poor customers with energy efficiency and tariff-switching information, and offer of advice service 〉 One-to-one advice by corporate volunteers, including the identification of intervention needs in homes such as insulation and low-cost efficiency measures
	Videos on energy efficiency	〉 Videos on reducing energy consumption shared with Naturgy's vulnerable customers, vulnerable customers identified by municipalities and clients of social services charities.
	Brochures	〉 Brochures containing tips on energy efficient habits, distributed with the energy bills to customers on the social tariff
	Training energy advisers	〉 Courses for those working with local administrations and NGOs, and those who are unemployed to enable them to give energy advice to clients.
	Photovoltaics	〉 Installation of photovoltaic panels in a social housing apartment block, in which 32 vulnerable families live 〉 Application of an innovation product to window glass to improve its insulation properties
	New kit of energy efficiency	〉 Distribution of a bespoke kit of low-cost energy saving measure working in collaboration with a national social charity.

Amongst these schemes there are some interesting elements of good practice for utility provision of energy poverty support. Several schemes have been developed, and will be delivered, in partnership with NGOs and local authorities. Designing a scheme with an organisation that works with low-income and otherwise vulnerable households can ensure that the support offered, and communication channels and messages used, are appropriate. These organisations are already providing a range of support services to households, so energy poverty alleviation measures can be added to other provision. Households thereby benefit from more complete, rounded services accessed in one place. Meeting households where they are already accessing support is an effective way of reaching energy-poor households. In addition, NGOs are often trusted sources of advice and support, which can improve the effectiveness of the energy poverty outreach and advice services. A number of the SocialWatt utility partners see the potential to build longer-term relationships with charities and other NGOs as a result of the schemes in these action plans.

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Many of the action plans consist of schemes that link together to start to build a framework of support for eligible households. These linked schemes usually have an element of mass communication to raise awareness of the issue of energy poverty and familiarise households with the utility's, often new, role in providing assistance. Typically, these communications are then supported by further bespoke, one-to-one advice and/or energy efficiency measures. Solutions to energy poverty are rarely simple and the action plans that start to build a framework of support recognise and respond to this challenge.

Advice and low-cost measures like low-energy lighting are elements of many of the schemes. But to support more significant energy savings for energy-poor households and provide more robust protection from future price fluctuations will require deeper renovation schemes, including renewable energy and innovative technologies. Amongst the SocialWatt partner action plans are some examples of pilots that explore the use of 'smart' heat and building fabric monitoring and management technologies and the use of photovoltaics and heat pump technologies as energy poverty alleviation tools. The results of these schemes will be valuable to inform the next generation of energy poverty schemes that will need to assist households not only to save energy but to fully decarbonise their homes.

As the utilities deliver the schemes in the action plans, the plans will be adapted and revised based on the experience gained. The SocialWatt project will continue to provide capacity building and focused support, and enable cross-fertilisation of learning between the partner utilities and other projects and initiatives.

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2 HEP ESCO, CROATIA: ENERGY POVERTY ACTION PLAN

2.1 STRATEGY AND VISION

The nature of HEP ESCO as an energy services company, not an energy supplier, and the current structure of the energy efficiency obligation (EEO) in Croatia create important context for the development of this action plan.

HEP ESCO is a company that specialises in financing, development and implementation of energy efficiency and renewable energy projects. It implements such projects in the market but also provides support to companies within the HEP Group in the implementation of energy efficiency and renewable energy projects and programmes. HEP is a state-owned corporation and has four energy supply companies in its portfolio, which are obligated parties to the EEO system.

HEP ESCO is not an energy supplier nor an obligated party under the EEO system. Its priority role is to implement projects that, with the greatest possible positive effect, result in energy savings that can be reported under the EEO system. HEP ESCO also provides support in the development of new initiatives in line with EU directives and helps in developing strategies and programmes related to energy efficiency. HEP ESCO is the appointed coordinator for the EEO system and provides development and administrative support to the supplier companies of the HEP Group and management board.

2.1.1 THE CROATIAN EEO

The Croatian EEO regulations came into force at the end of 2018, and their implementation started in 2019 for the first cumulative period (2014-2020). Since the end of 2018, additional regulatory changes have been made. First, amendments to the new law entered into force in March 2020. In November 2020, a public consultation was opened for new amendments to the law and bylaws. The new law came into force in April 2021 (see below section on Policy Impact). Frequent regulatory changes affect the stability of the environment related to decision-making, and launching and financing new programmes. In such an unstable environment it is difficult to predict the effects and assess the necessary activities and resources.

In Croatia, the achievement of savings in energy-poor households within the EEOS is voluntary at this moment. An administrative uplift to the value of the savings of 10%, 20% or 30%, depending on the status (vulnerable or not) and location of the customer is in place to incentivise suppliers to implement measures and programmes for energy-poor households. Energy-poor households are defined using the definition of vulnerable energy customers determined by social welfare services. Despite this incentive, investments in energy efficiency and renewable energy measures in the business sector are significantly more profitable – delivering more cost-effective savings per kilowatt hour (kWh). The model for delivering savings in the business sector has therefore been developed and adapted to market and internal rules, which is not the case when it comes to the household sector. Plans and decisions are made based on the internal rate of return on investment, so programmes and projects with the greatest positive effects for the company are adopted. All of this means that despite the uplift incentive for savings in energy-poor households, programmes to deliver these savings cannot compete with more profitable investments.

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Currently, energy savings are primarily implemented in power plants, infrastructure and buildings owned by the company. Projects to improve energy efficiency and renewable energy sources in the market are being implemented primarily through ESCO projects in the private sector.

2.1.2 EXISTING ENERGY POVERTY MEASURES

In 2015, the Croatian government adopted a "Regulation on the monthly amount of the fee for the vulnerable energy customer." This regulation obliges household customers to pay a solidarity charge of around EUR 0.004 (HRK 0.03) for each kWh of energy consumed. The money raised is used to cover the electricity costs for vulnerable energy customers. HEP, along with two other supply companies in Croatia, made an agreement with the government to take on the payment of the solidarity charge on behalf of other household consumers proportionally to their market share of customers. From 2016, this obligation has reduced HEP revenues by around €22 million per year. Given that the agreement is still in force and that significant financial resources are reserved for the purpose, this situation can be seen as an opportunity, at least in fiscal terms, to mitigate energy poverty in Croatia.

Since the solidarity charge is exclusively of a fiscal nature – it does not achieve direct energy savings – it could potentially be modified to repurpose these funds and invest part of them in energy efficiency and renewable energy projects. Approximately one third of these funds (EUR 6.54 million) are left unused for this purpose, held within the state budget, on an annual basis.

A significant additional factor affecting the overall situation in the country were the earthquakes that hit Zagreb in March 2020 and the area around Sisak and Petrinja in December of 2020. The earthquakes caused significant damage, particularly in the Petrinja/Sisak region, where HEP has many customers. HEP Group, as a socially responsible company, aims to do as much as possible to help residents affected by the earthquake. One urgent fiscal intervention introduced immediately after the earthquake in Sisak/Petrinja was to allow HEP customers in the area not to pay any of their electricity bills. Within the HEP Group, three energy supply companies reduced their revenue by around EUR 4.25 million (HRK 31.94 million) overall for this purpose (data from the end of May 2021). It is important to note that the Sisak-Moslavina county, according to data from the end of 2019, is the third largest in Croatia (out of 21) in number of users of the minimum guaranteed fee (vulnerable buyers of energy) in the Republic of Croatia. Although this is a fiscal measure in nature and does not imply energy savings, it does alleviate the difficult situation in which all citizens, particularly poor citizens, have found themselves. As earthquakes continue to occur, the situation is unpredictable and delays in the development of new programmes and other investments can realistically be expected.

In addition, the implementation of concrete measures for energy-poor households by HEP is further hindered by the fact that in Croatia there is no definition of energy poverty. Furthermore, there is no systematic and centralised monitoring of customer data to define relevant indicators that would indicate energy-poor households. There is, however, a register of beneficiaries of the social welfare system who are considered vulnerable energy customers. Until additional criteria and indicators are defined and developed, the regulation allows obligated parties to implement energy efficiency and renewable energy projects in these households in order to achieve the social goal within the EEOS. According

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to the latest publicly available official data from March 2018, there were 61,958 households identified as "vulnerable customers." Out of this total, HEP Elektra has the vast majority of these customers in its portfolio, around 50,000. It is important to note that the number of households defined as vulnerable customers changes over time, depending on the status and criteria checked and approved by the social welfare centres.

2.1.3 THE ESCO MODEL

The natural beneficiaries of an ESCO financing model are public and private companies, which can return the investment through part of their energy bill. The basic ESCO principle requires that energy consumption is decreased by a certain percentage after a measure is implemented. The investment is then returned from the reduced cost of energy.

ESCOs make sure that their customers have a stable credit ability. In the case of households, this is not an easy concept to pursue for investments that are returned over a long period, particularly if the customer is an energy-poor household. In Croatia, an energy-poor household would probably not be able to prove its creditworthiness.

As it provides energy efficiency and renewable energy projects for the commercial sector according to energy performance contracting and ESCO models, HEP ESCO has explored whether such models are applicable to energy-poor households. Currently HEP ESCO delivers a profit-making ESCO model by focusing on large energy efficiency or system efficiency programmes in the industrial or commercial sectors. Following investigation and exploration of the experience of other ESCO models in the household sector, HEP has concluded that its model cannot be easily transferred to the household sector, given the current conditions. High transaction costs for ESCOs, long payback periods, relatively smaller and dispersed savings potential in the household sector, and high risks for the ESCO for smaller projected investment returns all stand against this model being transferred.

However, several hybrid models may be considered, one of which could be to utilise part of the "solidarity fund" budget to cover part of the upfront investment. This would, however, require legislative change and careful assessment of the impact of reducing this short-term bill assistance in favour of longer-term investment. This ESCO model would also likely sit outside the EEO framework. HEP ESCO will continue to consider how existing funding models could be adapted to find optimal new models for launching larger-scale programmes for energy-poor households. The assumption is that certain regulatory changes and adjustments will need to be implemented; this will be investigated in detail when the time comes.

At present, grants and subsidies which require no return from the energy-poor households are considered the best option.

2.2 CONTEXT AND PREVIOUS ANALYSIS

As mentioned previously, there is no definition of energy poverty in Croatia and the Croatian EEO regulations use the definition of "vulnerable energy customers" to identify the eligible priority group. The schemes in this action plan will therefore also target vulnerable energy customers identified through the involvement of partners such as social welfare centres and local government.

The SocialWatt Plan tool provided excellent and detailed guidelines on schemes to alleviate

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energy poverty, with recommended financial models. The Plan tool proposed the implementation of three schemes: Renovate Your Home (low budget renovation measures), Smarter Home (smart thermostats) and RES4ALL (renewable energy). In accordance with current possibilities and permitted frameworks, one of the suggested schemes is incorporated into this action plan, along with one additional scheme.

The Renovate Your Home scheme, in the form of the distribution of energy-efficient LED bulbs for energy-poor households, will be elaborated and presented to the HEP management board for approval. In addition to Renovate Your Home, an information and communication scheme is also included in this action plan. A programme of information, communication and energy advice for energy-vulnerable customers through information centres, a website and information leaflets will be elaborated and presented to the HEP management board for approval.

The development and implementation of such programmes is a notable innovation in comparison to the regular business operations of the HEP Group. Legal and administrative aspects of these innovative initiatives will have to be considered before the implementation. HEP Group supplier companies have not delivered energy-saving measures (energy-efficient LED bulbs) to energy-poor households before, nor has there been a campaign to provide advice on energy consumption and energy management to this category of households exclusively. HEP ESCO's role within the group, as an ESCO and not a supplier, allows it to inform, advise and propose programmes to the group's management board. Although HEP ESCO has some influence on their decisions, it is up to the management board to either approve or decline a proposal. Therefore, although HEP ESCO will make great efforts to inform, advise and assist the group and the sister supplier company to develop and implement a programme, it cannot be guaranteed that the decision by the management board will support it.

The potential impacts and evaluation related to the realisation of savings that would occur through the implementation of these two schemes is presented in the table below in accordance with the current Croatian regulations governing the system for monitoring, measuring and verifying energy savings under the EEOS.[2] These regulations allow savings to be calculated using broadly two methods. In the first, the appropriate savings can be found in a catalogue of "deemed" savings credited to a range of simple measures. In the second, a prescribed calculation methodology and guidance on inputs is used for more complex installations. Final numbers of energy savings are shown without the administrative uplift afforded by the currently valid rulebook,[3] which allows energy savings that are achieved among vulnerable energy customers (households) to be elevated.

It is proposed that the programmes are initially implemented for energy-vulnerable customers until other criteria related to energy poverty are developed in Croatia.

The table below illustrates the impact if the measures are implemented with all vulnerable energy customers in the HEP Elektra portfolio.[4] More details on the schemes are described

[2] Rulebook on the system for monitoring, measuring and verifying energy savings (Official Gazette-NN 33/20).
[3] Rulebook on the energy efficiency obligation system (Official Gazette - NN 41/19)
[4] The energy saving impacts shown here will be uplifted when claimed under the EEOS, as energy savings in eligible households receive an uplift of between 10% and 30%.

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in the following sections.

In the next phase of more detailed elaboration of the programme, the legal and market aspects related to access to customers of a specific category will be considered, and after that the exact number of beneficiaries will be determined.

Table 2: Summary of expected impact in Croatia

	Total	LED lighting	Info campaign
Total target beneficiaries	51,290	51,290	51,290
*Energy savings (annual GWh) (in final energy consumption***)*	8.56	6.52	2.04
Cumulative energy savings (GWh) over lifetime of measure	79.44	75.44**	4*
Energy production (GWh)	-	-	-
Total investments/costs (€)	650,809	616,842	33,967
CO_2 emissions savings (tonnes)	1,286	1,037	249
CO_2 emissions cumulative savings (kilo tonnes)	12,483	11,995	488

* lifetime of 2 years, reduced to 1.962 with discount rate applied as per EEOS regulation

** lifetime of 15 years reduced to 11.563 with discount rate applied as per EEOS regulation

*** Calculated in line with the EEOS regulation

2.3 PLANNING AND RESOURCES

In order to implement new programmes it is necessary to go through certain corporate procedures. The procedures are similar for most initiatives that require additional financial and human resources. First, an idea is developed, on the basis of which approval for programme development is obtained. Once the programme has been elaborated in detail and subsequently approved, approval is then sought for the allocation of the necessary funds for its implementation.

Programmes first need to be elaborated in a short document by the initiator at the conceptual phase for presentation to the management board with a short description and effects. This action plan serves as this initial conceptual proposal. After management board consideration, the development of the programmes is approved or rejected. Once the programme development is approved, team members are appointed to create a more extensive document related to the programme realisation. The document will describe and determine the necessary steps for programme implementation, estimate needed financial and human resources, set the timeline and try to predict potential operational issues.

After the completion of the document, in which the sequence of activities for the

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programme implementation is elaborated in detail, it is presented to the management board for approval of realisation, allocation of required funds and use of human resources to implement activities.

2.4 SCHEME 1: ENERGY EFFICIENT LIGHTING FOR VULNERABLE ENERGY CUSTOMERS

The scheme includes the donation of three LED bulbs per household, to those households that have the status of a vulnerable energy customer.

2.4.1 OVERVIEW

The scheme will be aimed exclusively at households in Croatia that have the status of a "vulnerable energy customer" determined by social welfare centres. Vulnerable energy customers receive the "solidarity fee" support so can be easily identified from HEP Elektra data. There are 51,290 beneficiaries (153,870 LED bulbs), which is the approximate number of vulnerable customers from HEP Elektra's portfolio. The final decision regarding the number of households will be defined during the more detailed elaboration of the programme after the management board gives approval for the use of human and financial resources needed for development. It is possible that the bulbs will be distributed in phases, over a period of several years.

This process will involve HEP Elektra, HEP ESCO, equipment suppliers, package distribution associates, vulnerable households and, if needed, social welfare centres and local authorities.

The scheme will achieve savings in energy consumption by replacing old lighting with new energy efficient LED bulbs. According to the official methodology for calculating the energy savings, the replacement of a typical 60W standard bulb with an 8W LED bulb saves 42.4 kWh/year.

The expected effects of implementing this scheme related to energy savings, CO_2 reduction and required financial resources (excluding costs associated with internal human resources) are shown in Table 3.

Table 3: Scheme 1 – expected impacts in Croatia

	Scheme 1
Total target beneficiaries	51,290
Energy savings (annual GWh) (in final energy consumption)	6.524
Cumulative energy savings (GWh)	75.44*
Energy production (GWh)	0
Total investments/costs (€)	616,842
CO_2 emissions savings (tonnes)	1,037
CO_2 emissions cumulative savings (kilo tonnes)	11,995

* lifetime of 15 years reduced to 11.563 with discount rate applied as per EEOS regulations

Once approval for the development of the programme has been obtained, the relevant

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internal departments will be involved in the development team to address the legal, administrative, market, accounting and logistics aspects.

This scheme is an innovation in the regular business operations of the HEP Group in terms of development, identification and approach to customers, the method of distribution, communication and ultimately the attribution of savings achieved within the EEO. To the best of HEP ESCO's knowledge, no similar direct energy efficiency measures have been implemented by HEP or another utility in Croatia for vulnerable households within the EEOS.

2.5 SCHEME 2: ESTABLISHMENT OF A PROGRAMME OF CUSTOMER INFORMATION

The proposal is to develop a programme that will inform customers about efficient energy consumption and the possibilities of applying various activities that result in energy savings.

2.5.1 OVERVIEW

Like the first scheme this programme will be aimed exclusively at households in Croatia that have the status of a vulnerable energy customer determined by social welfare centres.

The programme to be developed will involve providing information, initially through the distribution of leaflets and, in the longer term, through energy advice at information centres and via a website.

There are around 51,290 beneficiaries (51,290 leaflets), which is the approximate number of vulnerable customers from HEP Elektra's portfolio. The final decision regarding the number of households will be defined during the more detailed elaboration of the programme after the management board gives approval for the use of human and financial resources.

This process will involve HEP Elektra, HEP ESCO, leaflet design and production partners, distribution associates, vulnerable households and, if needed, social welfare centres and local authorities. The content of the leaflets will be in part dictated by the rules on the eligibility of information measures in the Croatian EEOS regulations. The rulebook specifies that eligible information measures focus on overall advice on energy consumption reduction, or on information specific to electricity saving, lighting energy use reduction, appliances or heating.[5] HEP ESCO will design information measures that are suitable and streamline messages on these five consumption areas.

The implementation of educational activities raises the level of awareness of end users about the efficient and rational use of energy and energy sources. The application of advice and recommendations from educational leaflets contributes to reducing consumption and to the more efficient use of energy in the long term. In accordance with the national methodology for calculating savings, informing customers on energy efficiency through information materials and advising on reducing total energy consumption in the household (heating, cooling, cooking, lighting, household appliances) saves 39.75 kWh/year.

The expected effects related to energy savings, CO_2 reduction and required financial

[5] Croatian Ministry of Environmental Protection and Energy. (2020). Rulebook on the system for monitoring, measuring and verifying energy savings. https://narodne-novine.nn.hr/clanci/sluzbeni/2020_03_33_723.html

resources (excluding costs associated with internal human resources) are shown in Table 4.

Table 4: Scheme 2 – possible outcomes in Croatia

	Scheme 2
Total target beneficiaries	51,290
Energy savings (annual GWh) (in final energy consumption)	2.04
Cumulative energy savings (GWh)	4*
Total Investments/costs (€)	33,967
CO_2 emissions savings (tonnes)	249
CO_2 emissions cumulative savings (kilo tonnes)	488

* lifetime of 2 years, reduced to 1.962 with discount rate applied as per EEOS regulation

Once approval for the development of the programme has been obtained, the relevant internal departments will be involved in the development team to look at the legal, administrative, market, accounting and bureaucratic aspects.

This scheme is an innovation in the regular business operations of the HEP Group in terms of development, identification and approach to customers, the method of distribution, communication and ultimately the attribution of savings achieved within the EEO. To date, the HEP Group has run a number of information and educational campaigns aimed at customers. None of the previous campaigns, however, has been addressed directly at energy-poor households. The idea is to inform beneficiaries of the problem, in order to empower them to seek information and look for solutions.

Advice through leaflets and brochures will include specific advice on energy savings in households related to overall energy consumption (heating, cooling, lighting, cooking, household appliances, etc.). The materials will also contain information on the strategy for alleviating energy poverty in the EU and Croatia, and will provide a contact point where they can contact for more detailed and more personalized consultation.

2.6 SWOT ANALYSIS OF SCHEMES 1 AND 2

The following analysis of the internal strengths and weaknesses and the external opportunities and threats has been undertaken in relation to both schemes.

	Strengths	Weaknesses
Internal	Knowledge related to the EEOS procedures Experience in development and implementation of programmes and initiatives related to energy efficiency and renewable energy Knowledge and experience in monitoring, measuring and verifying energy savings	Lack of direct final decision-making for programme approval within HEP ESCO Insufficient knowledge related to legal, bureaucratic, accounting aspects of the new and innovative programmes' implementation Unpredictable and unstable working

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	The implementation of EU Directive in Croatian legislation through the programmes developed within the SocialWatt project	environment and conditions due to the COVID-19 pandemic
	Opportunities	**Threats**
External	Supporting and promoting socially responsible business initiatives Achieving energy savings in vulnerable households Meeting the social goal within the EEOS Gaining new experiences and knowledge Opportunities for new collaborations Compliance with the non-mandatory elements of the EEO structure – delivery to low-income households is incentivised but not mandatory Creating positive strategies and policies for reducing energy poverty providing financial incentives and subsidies using EU funding programmes	Implementation of a complex procurement and distribution process Circumstances and uncertainties associated with the pandemic Regulatory challenges regarding frequent changes and ambiguities Lack of awareness and cooperation of third parties/stakeholders

Energy poverty alleviation policies need to be adopted and streamlined so that there is effective coordination at local, national and regional levels. Common problems such as fragmented and overlapping responsibilities among agencies involved in energy poverty projects and a general shortage of institutional capacity to meet the increasing needs in service delivery and resource management could be tackled by strengthening policy frameworks and separate policy, planning and regulatory operational functions at each level of government.

A permanent public funding policy that supports energy poverty reduction measures in the form of grants combined with the financing of energy poverty measures within the EEOS by obligated parties would be a key factor in the widespread adoption and implementation of European energy poverty prevention and mitigation policies.

2.7 RISK ASSESSMENT

There are several possible risks and threats, but the most significant is the rejection of the proposals for the development and implementation of these programmes and the non-approval of financial resources by the management board. HEP ESCO will strive to elaborate the programmes in the most compelling way, appeal to the importance of implementing such socially responsible programmes to the largest supplier in Croatia and make every effort to show and emphasise all the positive effects.

A very significant risk and threat is the current unpredictable situation caused by the global pandemic and its effects, which is outside HEP ESCO's influence. This may affect the timing

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of the delivery of the programmes. However, it may also make household stakeholders more receptive to energy-saving messages, given that more time spent at home, as a result of lockdowns, has increased energy bills for many.

One of the potential risks is the possibility that household members will not install energy-efficient light bulbs after receiving them. Nevertheless, this is likely to occur in only a few cases.

Another threat is frequent regulatory changes related to the energy efficiency and EEO system. The frequency of amendments to the regulations cannot be directly influenced by HEP ESCO. However, the company makes every effort to positively influence changes by giving opinions and recommendations when participating in public consultations before the regulations enter into force.

Finally, HEP is obliged to conduct a public procurement process. These processes can be complex in certain cases, and due to the possibility of appeals or other reasons, this may lead to the repetition of tenders, so the process may be significantly delayed.

2.8 MONITORING AND EVALUATION

Performance monitoring, evaluation and verification of the schemes will be performed in accordance with current regulations in Croatia. As proof of the implementation of the measure, it is necessary to have an invoice for the purchase of equipment or services and a delivery report or handover record. Energy savings will be verified by the *"estimated savings"*` method described above.

The Rulebook on the system for monitoring, measuring and verifying energy savings (Official Gazette - NN 33/20) will be used to calculate savings, and administrative increases of energy saving regarding vulnerable households will be processed in accordance with the *Rulebook on the energy efficiency obligation system (Official Gazette NN 41/19)*.

2.9 INTERACTION BETWEEN SCHEMES IN THE ACTION PLAN

After considering all the necessary aspects, the final details for implementation of the schemes will be determined.

Household identification and delivery of LED bulbs and leaflets present clear opportunities for the schemes to interact. There is a possibility that both schemes are implemented at the same time. If so, the information leaflets for energy consulting can be included with the LED bulbs package and be distributed together. This would make the scheme more cost-effective and easier to deliver.

2.10 POLICY IMPACT

As mentioned above, from 2016 HEP reduced its revenues by around €22 million per year in favour of the solidarity charge. About a third of the solidarity charge funds (EUR 6.54 million) are not used for the intended purpose are left unused, held within the state budget on an annual basis.

Driven by the work that HEP ESCO has been undertaking within the framework of the project and key findings to date, HEP d.d. commissioned a study by the Hrvoje Požar Energy Institute

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to perform an analysis of the solidarity charge. HEP communicated the findings of the study to the Ministry of Economy and Sustainable Development.

Since the solidarity charge is exclusively of a fiscal nature – it does not achieve direct energy savings – it could potentially be modified to repurpose the funds and invest part of them in energy efficiency and renewable energy projects.

Amongst the different aspects of the analysis, the redirection of surplus invested funds was investigated. In particular, one of the ways to protect vulnerable customers could be to implement energy efficiency interventions in these households, through special programs, especially through energy renovation programs for households (family houses and apartment buildings). Given that the Fund for Environmental Protection and Energy Efficiency is the central structure for the implementation and co-financing of such programs, the surplus revenues could be paid from the state budget to the Fund. The Fund's revenues are defined by the Law on the Fund for Environmental Protection and Energy Efficiency. Article 12 of that Act states that the Fund may generate revenues from donations, assistance and other sources in accordance with the law. In that sense, the transfer of funds from the state budget to the Fund, specifically the budget items of the ministry responsible for social welfare for solidarity compensation, could be achieved by amending the Energy Act in such a way as to extend the use of solidarity revenues to energy efficiency measures for households at risk of energy poverty.

In conclusion, the impact of this recommendation would be significant for Croatia. It would encourage and trigger around EUR 6.54 million per year of investments in energy efficiency improvement projects for energy-poor households and social housing. According to previous projections and analyses related to the implemented energy efficiency measures in households, the average cost of 1 kWh of savings is around EUR 0.67 (HRK 5.00). Consequently if this recommendation is taken up, this investment could potentially generate about 10 GWh of new annual savings each year.

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3 PPC, GREECE: ENERGY POVERTY ACTION PLAN

3.1 STRATEGY AND VISION

3.1.1 OBLIGATION SCHEMES IN GREECE: 2021-2030

Energy efficiency obligation schemes in Greece have entered the new period, 2021-2030. In this period there are substantial differences in the way that obligation schemes will be implemented in Greece. The former period, 2017-2020, was to a great extent a period of training and experimentation for energy providers as well as the Greek government.

During 2021-2030, 10% of the national Article 7 target will be implemented through the EEOS, which is a total of 1,460 kt of energy savings. A major difference between the two periods is that within the new period, there is a specific split between three categories of measures that each obligated party should meet. The target assigned to each party should be implemented up to 25% through awareness measures, up to 45% through training/consultation measures and at least 30% through technical measures. Technical measures implemented for energy-poor households will benefit from an uplift to the calculated energy saving value of 40%.

The target assigned to each party every year is related to its share of the energy market. The targets will be announced every year by a ministerial decree in March. For 2021 the process of assigning targets has been delayed substantially due to both the COVID-19 pandemic and to delays in the process of integrating the regulatory framework of the EEOS for the period 2021-2030 into Greek legislation.

According to the regulatory framework, obligated parties should develop, submit to the ministry and endorse their yearly energy efficiency plans by the end of July every year.

In this action plan, PPC's preliminary plan for the delivery of energy efficiency measures for 2021 is presented in brief, while the measures addressed to energy-poor households are presented in greater detail.

3.1.2 PPC'S PLAN ON ENERGY EFFICIENCY MEASURES FOR 2021

PPC's share in the Greek energy market is approximately 30%, which leads to an energy efficiency target for 2022 of 72ktoe. PPC has approximately 6 million customers of all different categories.

The energy efficiency plan is designed to include measures that will (1) be cost-effective both for PPC and customers in order to create shared value, (2) be streamlined with PPC's strategy and (3) capitalise on and exploit projects, initiatives and opportunities available in each period (i.e. EEOS reference year).

For 2021, PPC has planned measures from all three categories, i.e. awareness, consultation and technical. All are addressed to PPC customers, both residential and business, including energy-poor households. As a result of PPC's participation in SocialWatt, extra dedicated provisions have been considered for energy-poor households in each of the energy efficiency measures. More specifically, for consultation and technical measures addressed to households, there will be special provisions for energy-poor and vulnerable households.

The final energy efficiency plan for the year 2022 will be submitted to the Ministry of Energy

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and Environment by the end of July 2022.

3.2 CONTEXT AND PREVIOUS ANALYSIS

Greece does not currently have a formal definition of energy poverty, but vulnerable consumers are officially defined. The Decision ΥΠΕΝ/ΔΗΕ/78337/224/06.11.2018, defines the criteria, conditions and procedure for including electricity customers in the vulnerable customers registry, which includes customers that benefit from the social residential tariff. More specifically, social residential tariff beneficiaries include:

- Anyone who meets the criteria for the social solidarity payment (those who meet specific maximum income thresholds and maximum asset value thresholds, as well as two key residency criteria, i.e. having a legal and permanent residency status in Greece);
- Anyone with an actual or deemed total annual income below specific thresholds.

Due to the absence of a national energy poverty definition, PPC undertook a detailed analysis of its vulnerable consumers database using the SocialWatt Analyser tool, to assess whether these vulnerable households are likely to also be energy poor. The results of the analysis were variable, with indicators relying on households' income returning low numbers of energy-poor households. On the other hand, when using the SocialWatt indicator, the arrears on utility bills indicator and the low absolute energy expenditure indicator, a considerable number of households were identified as energy poor.[6]

Considering the analysis, but also national regulatory requirements and PPC's business priorities and strategies, the schemes have been designed to support vulnerable consumers, as defined by legislation, to escape energy poverty.

Subsequently, PPC used the SocialWatt Plan tool to identify optimal schemes from cost and risk perspectives to consider, which included:

- Provision of efficient lighting
- Replacement of heating systems with more energy-efficient ones
- Replacement of white appliances with more energy-efficient ones
- Launching an information and communication campaign.

Based on the analysis from the SocialWatt Plan tool, and most importantly after considering business strategies and priorities, budget, risks and constraints, PPC has selected three schemes to implement that address energy-poor households. These primarily relate to replacing (typically oil-fired) heating systems with heat pumps, launching an information campaign and launching a platform providing customised consultation to households on energy efficiency.

[6] Sunderland, L. et al. (2020). Evaluation of schemes to tackle energy poverty. SocialWatt. https://socialwatt.eu/library/publications

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Table 5: Summary of expected impact in Greece

	Total	Brochure	Portal	Subsidy
Total target beneficiaries	430,000	430,000	180,000	150-200**
Energy savings (GWh) (in final energy consumption)	166.8	34*	104.7	28
CO_2 emissions savings (kt)	38	7.75	23.9	6.4***

* Based on an assumption of 30% of households responding to the information.

**Number of energy poor households expected to take up a heat pump per year. The success of the scheme will affect its lifetime, so it's impact may be higher.

*** When estimating energy savings, the implementation of technical measures in vulnerable households are accounted for with an increase factor of 1.4 under the energy efficiency obligation scheme in place.

For the calculation of savings, the Greek Ministry of the Environment and Energy has selected the deemed savings approach and has therefore provided obligated parties with a set of pre-defined equations that correspond to the different types of measures. These have been used to calculate the expected savings presented above.

3.3 SCHEME 1: BROCHURE ON THE SAVINGS ACHIEVED BY HEAT PUMPS

3.3.1 OVERVIEW

Considering the increasing energy cost and the emerging need to electrify energy usages like heating, where in Greece is dominated by oil-fired heating systems, PPC has decided to promote heat pumps as the most appropriate and efficient heating system. Given the fact that PPC will implement a subsidy measure for heat pumps installation it was decided to design a brochure on the competitive advantages of heat pumps as a heating system. The brochure will be distributed with the electricity bill and will reach all PPC's customers including energy-poor and vulnerable households.

The quantified cumulative savings attributed to the measure – i.e. increasing awareness of heat pumps and potential savings from the replacement of existing heating systems with heat pumps – to PPC's 430,000 vulnerable household customers is estimated to be 34 GWh. The method for quantifying these savings has been provided to obliged parties by the Ministry for the Environment and Energy. A flat rate of savings for the awareness-raising measures has been applied to the 430,000 households, in line with the EEOS. The households affected by the campaign is considered to be 30% of the total population addressed according to a survey implemented on 2019 by the Centre of Renewable Energy Sources (CRES). The lifetime of the measure (i.e. the period that savings occur due to the measure) is two years. This is the period considered for all awareness measures.

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3.3.2 SWOT ANALYSIS

	Strengths	Weaknesses
Internal	Easy to design and implement for PPC Due to the large number of customers it is a very high impact measure	It provides cumulative savings only for two years.
	Opportunities	**Threats**
External	To enhance customer awareness and understanding of the benefits of heat pumps for their household and the environment A very wide measure addressed to all customers. It provides substantial savings with a relatively low budget, so is very cost-effective for PPC	There are no threats identified

3.3.3 PLANNING AND RESOURCES

Timeline:

- Brochure design: May-June 2021
- Brochure distribution: February 2022 – March 2022

3.3.4 MONITORING AND EVALUATION

According to the regulatory framework of obligation schemes, energy suppliers should monitor the implementation of each measure in order to validate the results. In accordance with the Regulation, a survey will therefore be carried out with PPC's customers following the campaign. The survey will aim to identify whether customers have received the brochure, if they found it useful, if they have used the information provided when reconsidering their heating system and if they have discussed this information with friends.

Responses to these questions will be used to support the evaluation of the impact of the measure, i.e. the extent to which it affects PPC's customers in their decision-making on retrofitting their heating system.

3.4 SCHEME 2: A PORTAL FOR RESIDENTIAL AND BUSINESS CUSTOMERS PROVIDING INFORMATION AND CONSULTANCY ON ENERGY EFFICIENCY

3.4.1 OVERVIEW

PPC is developing a new service that will be launched by March 2022. This service will be available free of charge to all households and business customers. It is a portal on energy efficiency that will support customers through an exchange of information. It will assist them, firstly to understand the way they consume energy in their households and businesses, secondly to become aware of actions that can be taken to reduce their energy consumption and thirdly through the provision of customised information and advice on how they can increase energy efficiency. The mechanism will provide benchmarking of

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consumption with similar households or businesses, disaggregation of yearly consumption by the different appliances/uses, setting of individual energy targets and monitoring their achievements.

Through this mechanism PPC aims to create shared value with its customers and provide special treatment and support on different categories like prosumers, farmers, very small business and energy-poor households. The portal will be integrated with PPC's loyalty programme portal in order to provide exclusive customised offers to the different customer groups from the network of merchants that supports the portal.

In particular, considering energy-poor and vulnerable households, two additional functionalities are envisaged:

- Through benchmarking of energy consumption with households of similar characteristics in the same geographical area and with other energy-poor households of similar characteristics, the mechanism will guide households to set and monitor progress against targets designed to keep household energy use within the limit of the subsidised energy price, i.e. 2,000 kWh every four months for a four-person household. This functionality supports households to save both energy and money as the price per kWh is higher when consumption is above the 2,000 kWh limit as no subsidy is provided for use above this threshold.
- Based on the information provided by customers on the characteristics of their appliances and the disaggregation of the annual electricity consumption by the major appliances/uses, PPC will provide special offers including subsidies, so that energy-poor customers can replace old, inefficient devices with efficient ones.

The overall project of developing the portal and the mechanism was started in January 2021 and the portal is expected to be available in March 2022 at the latest. The cost for developing the mechanism and running and maintaining the portal is €0.5 million.

Currently the number of PPC's customers that are characterised as energy-poor and vulnerable households is 430,000. PPC intends to sign up all of these customers to the portal and support them to manage their energy consumption.

PPC envisages signing up **180,000 energy-poor households that will make 104.7GWh of energy savings**. It should be noted that these savings are attributed to the training and gamification alone and not from the replacement of appliances.

3.4.2 SWOT ANALYSIS

	Strengths	Weaknesses
Internal	PPC has existing knowledge on developing and supporting a consultation mechanism on energy efficiency A large number of customers can benefit from this scheme (4.5 million households and 1 million small businesses and almost 0.5 million energy-poor households). This can therefore lead to a meaningful impact on energy efficiency	This is a transformation period for PPC (digital transformation) with substantial changes to IT systems that may create delays in development

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	Opportunities	Threats
External	To engage customers and support them to understand their energy consumption and the benefits of energy efficiency measures and ways to save money Gain customer loyalty Reduction of energy debt Differentiation for PPC from competitors High energy savings impact due to the large number of customers. Very cost-effective for PPC	It is a challenge to engage households and keep them engaged, i.e., to continue to use the portal as a monitoring tool for their energy consumption

3.4.3 PLANNING AND RESOURCES

Timeline:

- Development of the portal: February 2022
- Portal launched: March 2022
- Training and gamification: April 2022 – end date depends on the success of the scheme

3.4.4 RISK ASSESSMENT

Delays in launching the portal due to IT problems is a potential risk. More specifically, delays may occur due to difficulties in integrating the portal with PPC's existing customer relationship management system.

As such, the development of the portal has been awarded to an external developer in order to ensure its timely delivery.

To overcome the risk that customers may not be interested or maintain interest in the portal, gaming features have been considered to enhance the customer experience. It is designed to provide a customised experience to users. A network of merchandisers has also been mobilised to provide extra offers and increase the value of the support that will be provided by PPC to households on enhancing the energy efficiency of their homes.

3.4.5 MONITORING AND EVALUATION

The portal has been designed to provide statistics on the demographics of users and the ways in which it can be used by PPC's customers.

A 360° campaign on the portal will take place in April 2022. It will be available to all low-capacity connection customers (households and small businesses). Customised teasers will be sent to customers through e-mails and text messages in order to encourage them to register with the portal.

Within the framework of the EEOS, savings will be measured using the appropriate bottom-up equation. However a very detailed monitoring of the actual savings achieved by customers that have either taken action on the basis of energy efficiency advice or as a

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result of taking up new electrical appliances will be carried out and reported through the portal.

3.5 SCHEME 3: SUBSIDY PROGRAMME FOR HEATING SYSTEM RENOVATION WITH HEAT PUMPS

3.5.1 OVERVIEW

Heat pumps for heating and production of hot water are one of the main pillars of electrification. Heat pumps have a substantial impact on energy consumption, since they consume up to 80% less energy than conventional heating systems in Greece, (i.e. systems based on petroleum) while achieving a superior heating outcome.

PPC therefore considers heat pumps as one of the major technical measures to be implemented during the period 2021-2030. Since the end of 2020, PPC has been in discussions with major heat pump technology providers in order to identify an appropriate business model to work with them.

The plan for the period 2022-2023 is to develop a subsidy programme for PPC's existing and new customers that will provide €500 on the equipment cost, a guaranteed low price as compared to the open market, a guaranteed technically sound and economically appropriate installation, and a financing programme for the matching funds required.

The size of heat pumps market in Greece is 10.000 heat pumps a year. PPC aims to meet a sales volume of 2,000 heat pumps per year. The expected cumulative savings are approximately 207 GWh/year.

It is expected that 7.5% to 10% of the 2,000 customers a year will be energy-poor and vulnerable customers. For these customers, PPC will provide a subsidy of €700. The focus for this scheme will be the installation of heat pumps in homes that have already benefited from insulation measures via other state-funded renovation programmes. The cumulative savings expected due to the implementation of the heat pump investment programme for the period 2021-2030 are estimated to be 28 GWh.

The heat pumps subsidy programme will be launched by end of February 2022. It should be noted that the subsidy programme can be combined with other financial mechanisms available, such as the national programme "Εξοικονομώ" that in 2021 funded up to 75% of the costs of interventions in very low income households.

3.5.2 SWOT ANALYSIS

	Strengths	Weaknesses
Internal	A large network of physical stores that promote heat pumps Substantial technical know-how Reliability in the market Development of new digital channels for sales	No experience in retailing A heavy transformation period for PPC

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	Opportunities	Threats
External	Strategic partnership with the heat pump Industry New electrification targets Several energy renovation initiatives in the market Differentiation from competition	Expensive technology High installation cost Difficulties to develop and monitor a network of installers Challenges to engaging households

3.5.3 PLANNING AND RESOURCES

Timeline:

- Scheme design finalised: end of February 2022
- Scheme launched: by February 2022
- Scheme duration: February 2022 – May 2023 (depending on the success of the scheme this may be extended)

3.5.4 RISK ASSESSMENT

The major risk is to engage households. Due to the high cost of the technology and the fact that there is still a lack of awareness of the capacities and characteristics of heat pumps as a technology for heating, people are sceptical.

PPC aims to organise an awareness campaign on the benefits of heat pumps as a heating technology and on the meaningful contribution they provide to energy savings and the reduction of CO_2 emissions.

To further mitigate the risks of low uptake, PPC will consider enhancing the percentage of subsidy to specific groups, provide the option for households to pay back installation costs through on-bill instalments, secure funding from private banks for the matching funds, and explore capacity to use PPC's programme jointly with other funding programmes.

3.5.5 MONITORING AND EVALUATION

PPC will subsidise heat pumps so there will be a mechanism where all information required on the household and equipment installed will be recorded. There will therefore be a complete track record of the action, its size and expected savings.

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4 EVISO, ITALY: ENERGY POVERTY ACTION PLAN

4.1 STRATEGY AND VISION

eVISO provides electricity to small and medium-sized enterprises, farm businesses, shops and restaurants. Since 2018, eVISO has served households as well. This service covers the whole of Italy, but it is focused on the north-west, particularly in Piemonte, which is eVISO's main market and location of the headquarters. Expansion of the new household customer base beyond Piemonte will require knowledge of the market outside the region, particularly as new customers are preferably taken on through referral by an existing customer. Knowledge of the household market is one of the reasons for eVISO's involvement in the SocialWatt project. The project also supports the fulfilment of eVISO's motto which is "*having a positive impact on the world.*"

Since 2019, eVISO has collaborated with several electricity retailers (called resellers) – for which eVISO behaves as an energy wholesaler. These resellers have customers all over Italy and through these collaborations, eVISO can reach more households and learn about different market areas. eVISO and its resellers have distinctive approaches – in particular regarding how customers are screened – which resulted in very different energy poverty levels found from the SocialWatt analysis. Accordingly, it is essential for eVISO to learn this distinction and grow.

The Italian legislation[7] implementing Article 7 of the Energy Efficiency Directive (EED) determines that electricity and gas distributors are the obligated parties, not retailers. As an energy retailer, eVISO is therefore not an obligated party so the company's investments in energy poverty alleviation are not driven by this obligation.

4.2 CONTEXT AND PREVIOUS ANALYSIS

From the SocialWatt Analyser tool, eVISO found 308 energy-poor households (4.4%) among its direct customers, and 1,215 from the customers of eVISO's resellers (17.3%). In a few Italian regions, the percentage of household customers that are energy poor is almost 50%, while in others it does not go beyond 20%. On average, 21.7% of household customers are energy poor in Italy. This analysis could not strongly correlate regional incomes with energy poverty indices, but provided eVISO with a list of potential energy-poor households.

eVISO has developed four schemes to alleviate energy poverty in Italy, summarised as follows:

- CONNECT: eVISO will produce a broad communication campaign using videos, social media campaigns and web pages to inform energy-poor households about energy use and potentially engage them.
- EQUIP: eVISO will train external partner organisations from the social services sector on energy use, to enable them to give advice to energy-poor households.
- COUNSEL: eVISO will map energy poverty together with external partner organisations from the social services sector. Staff of these partner organisations will engage with households to give first-stage advice and assess their needs and

[7] DMRT/EFC/01/2020, https://www.arera.it/allegati/docs/20/001-20dmrt.pdf

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situation via questionnaires (gathering information on energy usage and waste, social condition, incomes and expenditure, etc). If necessary, an energy counsellor will go to people's homes and give further bespoke advice and, if relevant, suggest changing inefficient household appliances. After receiving this advice, beneficiaries will be reached again, up to one year later, to assess the usefulness of the advice.

- REPLACE: eVISO will collaborate with partner organisations from the social services sector and an appliance retailer, to replace inefficient household appliances.

These four schemes are highly interlinked: CONNECT and EQUIP will be delivered in parallel and will feed into COUNSEL and REPLACE. Moreover, COUNSEL can also feed into REPLACE. Finally, monitoring of COUNSEL and REPLACE will illustrate the effectiveness of the energy poverty alleviation measures and have the potential to convince more stakeholders to join the SocialWatt activities, triggering more interventions. These are therefore four schemes, but their impact will combine into fighting energy poverty as one complete scheme.

These schemes are built around the partnerships developed by eVISO with social security organisations and working with these partners will greatly increase the project added value. One of these partners is Caritas Saluzzo. Caritas is a network of international humanitarian aid and social services organisations. Caritas Austria is a SocialWatt consortium member that has developed an energy poverty alleviation methodology and has 10 years of experience in delivering energy poverty alleviation services. The model to be adopted by eVISO is based on the Caritas Austria model.

COUNSEL and REPLACE will address the problem of energy poverty in a solutions-oriented way. Social services partners will enrich their background knowledge on energy and households will be enabled to address the problem and try to solve it with practical advice.

These schemes are innovative for Italy, as it is a country with no energy poverty definition or history of energy poverty policy. Moreover, even social services organisations are insufficiently aware of energy poverty. CONNECT, through broad communications, and EQUIP, through working with stakeholders, could therefore improve general awareness of energy poverty and its consequences on welfare and climate change.

At the time of writing, a few European projects are trying to fight energy poverty or assess the variables, and new projects are envisaged. Unfortunately, Italy comes to this problem late compared to other European countries, and there are no structured norms nor institutions to alleviate the problem (apart from electricity, gas and water bonuses, which are inadequate).

The four schemes are therefore intended to be a complete pilot case study. The scalability of this project is conditional on several elements: funding support, project spread, help from stakeholders, general acceptance. If all these are satisfied then this pilot case will turn into something more structural. Energy poverty awareness is something Italy has to develop, and this is the main intention for eVISO.

These schemes in the first iteration will engage at a minimum 460 households, in line with the SocialWatt project targets: 400 households through CONNECT, EQUIP and COUNSEL and a further 60 through REPLACE. Over and above the project targets, eVISO expects these four

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schemes could influence and impact many more households, as shown in the table below.

Table 6: Summary of expected impact in Italy

	Total	Scheme 1: CONNECT	Scheme 2: EQUIP	Scheme 3: COUNSEL	Scheme 4: REPLACE
Number of expected beneficiaries	1500-2000[a)b)]	1000-5000[c)]	1000[d)]	1000	65
Energy savings (GWh) (in final energy consumption)	0.615	-[e)]	-[e)]	0.6[f)]	0.015[g)]
Total investments/costs (€)	30,000[b)h)]	4,000	4,300	3,000	20,000[i)]
CO_2 emissions savings (kt)	0.44[f)j)]	-[e)]	-[e)]	0.430[f)j)]	0.011[f)j)]

a) This estimation varies due to potential beneficiaries among followers on social media (see scheme 1 for more details). eVISO hopes to reach at least 1,600 households in Piemonte and advise 1,000 beneficiaries with these schemes, including 65 for scheme 4.

b) Considering these four schemes as one complete pilot case study.

c) This wide range is due to social media pages and reflects the minimum and maximum possible energy-poor households this scheme could reach and, possibly, engage. Considering a user base of 200,000 people in Piemonte, so around 100,000 families, between 1% and 5% could interact with scheme 1.

d) This estimation comes from the number of potential beneficiaries each social service organisation staff member can reach times the number of staff.

e) These schemes' purposes are to increase self-awareness about recognising energy poverty and how to alleviate it.

f) Assumption from Caritas Austria's experience. Italy 2018 average electrical consumption per dwelling was 2623 kWh/year, while for Austria this was 4403 kWh/year (so +168%).[8] Caritas Austria was able to save 1406 kWh/year per household, that is 31.9% of energy consumption. Using the same percentage, Italian dwellings could positively save 838 kWh/year and 0.59 t CO_2-eq/MWh per household.

g) Estimation from comparing best energy class selected with the reference class.

h) Total investments, considering management, direct funding.

i) Based on average cost for each replacement.

j) Estimated using the LCA emission factor for Italy (0.708 t CO_2-eq/MWh).[9]

As these schemes will focus strongly on awareness, the energy savings, energy efficiency investments and CO_2 savings impacts are hard to forecast. The most robust energy and bill savings will be from replacing appliances, as shown for Scheme 4.

4.3 SCHEME 1: CONNECT – SENSIBILIZZA

Within CONNECT, eVISO will establish a communication campaign consisting of videos explaining how to manage energy and decrease consumption and waste, together with web pages, leaflets and social campaigns. The expected result is to increase awareness of

[8] Odysee-Mure Project, https://www.odyssee-mure.eu/publications/efficiency-by-sector/households/electricity-consumption-dwelling.html

[9] Covenant of Mayors, *The emission factors*, https://www.covenantofmayors.eu/IMG/pdf/technical_annex_en.pdf

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the problem, interact with potential energy-poor households and provide further possible confirmation of the appropriateness of energy poverty indicators in Italy. This scheme will allow the engagement of energy-poor households thanks to direct contact on each element of implementation.

4.3.1 OVERVIEW

Given the web-based nature of many of the communication mediums, CONNECT will have a broad audience of all households. An initial stage will focus on the region of Piemonte. Subsequent iterations could widen the scheme's influence and impact all over Italy if the pilot is successful.

This scheme is highly connected with schemes 2 and 3: all together, they will engage at least 400 households. However, considering a total range of 200,000 followers in Piemonte (from eVISO's and partner's social pages), of which 20% could be energy-poor (considering the results of the SocialWatt Analyser), eVISO expects this scheme could involve between 1,000 and 5,000 energy-poor households (3%-13% of potential energy-poor followers – considering that one follower could represent a family and a dwelling).

With this scheme, possible energy-poor households may be identified and engaged directly via web-based channels: there will be a reference in each video/article/social campaign through which interested people may contact for further details. The general audience – from eVISO and partners' web pages and social media – will be encouraged to watch videos and read web pages, comment and share posts, or possibly interact.

This scheme will be led by eVISO, with materials and the overall initiative developed by the marketing department. eVISO will analyse the data and choose the most valuable results for the development of new web pages, videos and social campaigns, and identify households to be referred into the energy poverty alleviation programme.

Given that sensitive personal information may be gathered via the surveys, General Data Protection Regulation (GDPR) will be dealt with by eVISO's internal experts, and data will be appropriately separated and safeguarded.

eVISO will produce communication materials, explaining how to save energy and decrease consumption and waste. The materials will present energy-saving tips and suggestions, advice and case studies. The web material will be uploaded onto eVISO's website and partner organisations' social media pages, to engage more people and advertise the SocialWatt project itself.

The use of social media – Facebook, LinkedIn, Instagram and Twitter – will enable energy-poor households to be more actively engaged and encouraged to post impressions and share posts. Additionally, eVISO will produce surveys to be shared on these platforms to gather much-needed information on energy poverty which will help increase the understanding of energy poverty and identify energy-poor households.

To produce the communication materials, the time and the investment for the production of materials is estimated to cost around €3,500. This includes at least five videos, five articles in newspapers and on web pages and five surveys, all with related social campaigns. This material will be produced and delivered in one year from the beginning of the delivery of this action plan.

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This scheme is innovative as all the features it develops are new for Italy. There is no evidence, at the time of this report, of such elements combined together to study energy poverty in Italy.

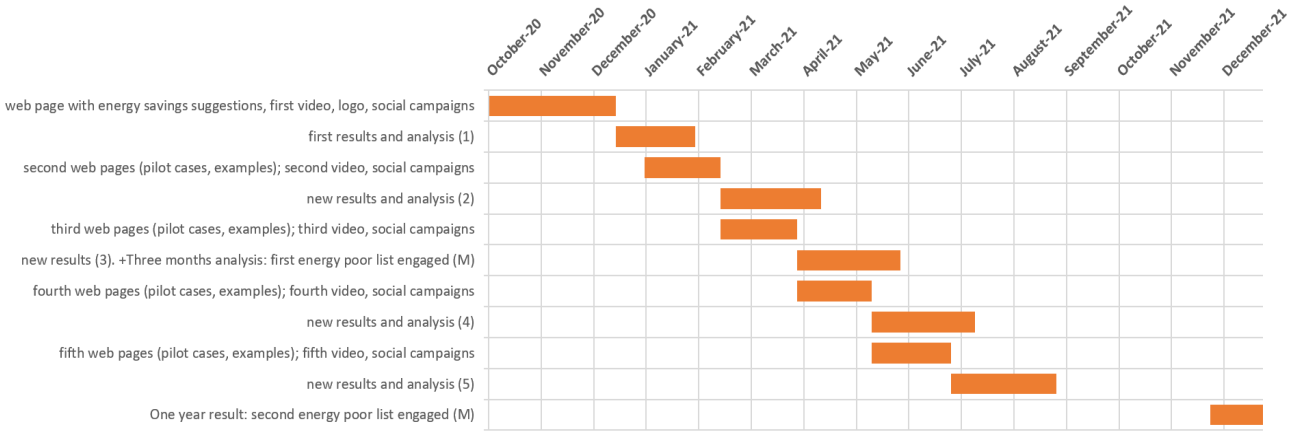
4.3.2 SWOT ANALYSIS

	Strengths	Weaknesses
Internal	All types of output (videos, web pages, leaflets, questionnaires, etc.) are already being produced by eVISO within the framework of SocialWatt Marketing and data analysis teams	eVISO customers are mainly electricity consumers: gas consumption is not considered
	Opportunities	**Threats**
External	To engage energy-poor households To improve eVISO's visibility To differentiate from competitors eVISO started this project to benefit customers: eVISO will be ready in case the authorities change national regulations related to the implementation of Article 7 of the EED eVISO can offer the project approach to its resellers	Insufficient number of households engage with the communication materials Insufficient number of households complete surveys to enable meaningful data to be captured GDPR issues while handling sensitive data

4.3.3 PLANNING AND RESOURCES

The timeline is shown in the Figure below. After a first pilot, the video/articles production will be followed by data analysis, e.g. recording how many visitors/readers/watchers and the interactions made.

Figure 2: Timeline for scheme 1 in Italy



4.3.4 RISK ASSESSMENT

The main risk to the CONNECT scheme is lack of engagement from households. The solution proposed to mitigate this risk is extending the scheme to a wider group of households

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through partnering with external stakeholders and sharing resources on their communication platforms (connecting with Scheme 3).

In addition, each phase of communication will be adapted and improved to be more successful in engaging households. Each stage of communication will be reviewed in terms of the level of consumer interaction and impact, and later iterations will build on the learnings.

4.3.5 MONITORING AND EVALUATION

From web pages, videos, social campaigns and interactions via web-based media, eVISO will obtain information on the number of households that are interested in energy poverty to help structure relevant support.

Web pages can be queried with tools like Google Analytics to assess a number of aspects of a visit – for example location, device, sometimes age and gender. From this analysis, one can derive much information about an individual's level of interest in each topic. Video platforms can provide similar data. User responses to social media posts are also a useful source of feedback. Moreover, interactions with web-based media can determine new features to add to future initiatives, and inform methods for mapping energy poverty.

Interaction is a key measure of success for the scheme, so the number of interactions will be evaluated in an ongoing manner and the interactions will be investigated. The usefulness of the data and insights captured from the monitoring of the communication campaign is also a key indicator of its success.

If eVISO is able to engage at least 400 people with scheme 2 and 3, then CONNECT will be considered a success. Based on the level of success, eVISO could improve the scheme, and continue creating similar materials in the coming years after the pilot stage.

4.4 SCHEME 2: EQUIP – PREPARA

The scheme EQUIP will deliver energy training courses to the staff of two social services partner organisations. eVISO will organise the trainings and develop educational videos.

4.4.1 OVERVIEW

eVISO is establishing partnerships with not-for-profit organisations in the social services sector. These partners provide services and support to households in individual cities and have established relationships with households and the wider community.

The scope of the scheme is to train the staff who provide direct advice and services to households to enable them to speak about sustainable energy consumption and wasting energy with confidence, providing them with relevant knowledge, concepts and terminology. Each staff member has a portfolio of households and can then identify individuals who would benefit from energy advice.

Caritas-Saluzzo (in Saluzzo city) is part of the international network of relief, development and social services organisations. Monviso Solidale (www.monviso.it) is part of the *Consorzio Socio Assistenziale Piemontese* (literally the Social and Welfare Aid Consortium in Piedmont), as organised in Piemonte; in other regions, municipalities provide this kind of support. Both these organisations are involved and will choose collaborators to join this programme.

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The training will be held online via webinars due to the COVID-19 pandemic restrictions. It will offer video content, divided into sections after which the user will take a test. eVISO will analyse the results.

eVISO will design the content, identify and secure energy experts to provide input, and directly fund the course production. Content will cover how to read energy bills, how to identify inefficient use of energy and inefficient appliances and how to identify energy leaks, mould etc. in the dwelling fabric. Videos will be published online on eVISO's website and shared with partner organisations and their staff.

At the time of writing, EQUIP is innovative as there are no other proper courses (from institutions or other companies) specifically addressing energy savings and energy inefficiency to follow and learn from. This scheme will develop knowledge and share this with the staff of social services who do not currently know about energy management and services, as well as a broader general audience.

Connected with scheme 1 and 3, these schemes will engage at least 400 households. EQUIP will be delivered also to anyone who wants to learn more about energy. Viewers of these videos could be either partners' staff or a general audience. At the beginning of the complete course, a short test will be offered to determine user background (for instance, if the user is part of a social organisation or is just an interested household) and to evaluate pre-course energy and consumer knowledge. This information will be compared with the final test at the end.

Considering an average of 10 households per social service staff member, this leads to an estimation of 1,000–1,500 households potentially involved, to whom social services staff could deliver the energy advice from scheme 3.

This course will be constantly available to anyone wishing to learn about energy, from launch. Moreover, it could be improved and optimised months or years after the launch, depending on users' expectancy, knowledge and general awareness.

4.4.2 SWOT ANALYSIS

	Strengths	**Weaknesses**
Internal	eVISO is training and education oriented: at eVISO, employees are encouraged to follow courses, read specific articles and books to improve. eVISO is currently trying to spread this attitude among other companies. Strong internal marketing team with capacity to take the lead	Potentially limited number of energy-poor households in external collaborators' household client list Lack of direct experience in providing specific energy poverty advice and training
	Opportunities	**Threats**
External	To engage customers indirectly and help with free advice To differentiate eVISO from competitors	Success is reliant on external collaborators' ongoing willingness to cooperate Challenges to engaging households Challenges concerning privacy (GDPR)

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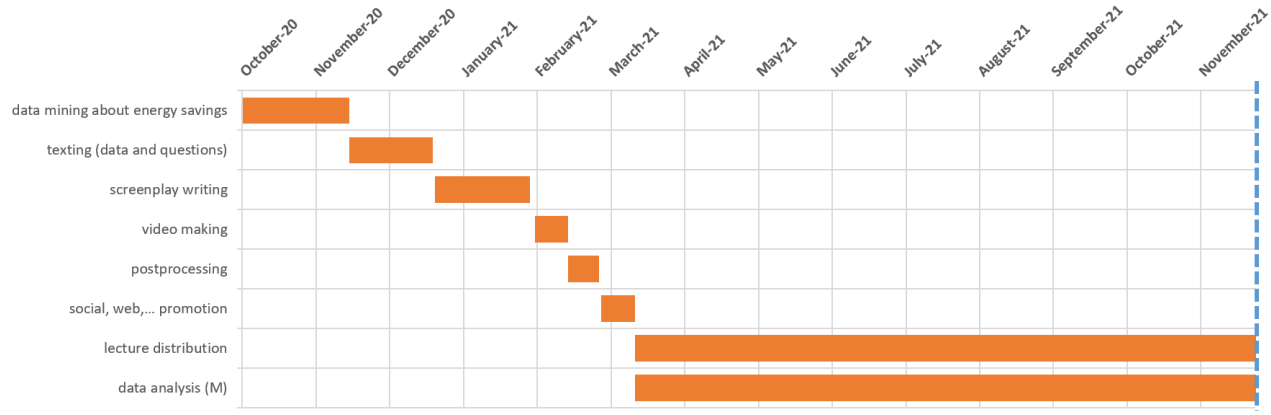
4.4.3 PLANNING AND RESOURCES

The figure below shows the timeline for scheme 2. The course will continue to be available beyond this period.

Figure 3: Timeline for scheme 2 in Italy



* In a dashed blue line, a milestone (M)

eVISO will take advantage of the internal marketing team and will consider energy experts to teach partner organisations about energy. The initial investment is estimated to be around €2,500. Subsequent iterations could lead to different investments that will be made depending on the success of the scheme.

4.4.4 RISK ASSESSMENT

The main risk to the scheme is that staff of social services may be reluctant to attend the course or may not deal with enough households that face energy poverty problems. From an initial evaluation, Caritas-Saluzzo has staff and volunteers who are interested in the training sessions, and they are actively concerned about households with energy poverty problems, so this risk is low. Monviso-Solidale works in a similar way.

4.4.5 MONITORING AND EVALUATION

The number of social services staff in each training and the number of households assisted by each of these external collaborators will be monitored.

There are two measures of success for this scheme. The first is the number of partner organisation staff members that attend the training course. The second relates to the number of households that have been engaged and completed the monitoring questionnaire described in scheme 3.

The number of people attending the training course and the data collected by scheme 3 – COUNSEL, will provide eVISO with data that will be analysed and stored. From this analysis, the scheme's success will be determined.

4.5 SCHEME 3: COUNSEL – CONSIGLIA

COUNSEL is the most articulated scheme among those presented in this chapter. eVISO, with the collaboration of Caritas-Saluzzo and Monviso-Solidale staff will meet households,

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complete questionnaires (as agreed with the social services partners), provide energy advice and agree on a possible energy counselling session, given by energy experts from eVISO.

4.5.1 OVERVIEW

COUNSEL is connected with scheme 1 and 2, and together these schemes will engage a minimum of 400 households. eVISO expects that the potential audience for this scheme is 1,000 energy-poor households.

Beneficiaries of this scheme will be households in absolute poverty (determined by Italy's Institute of Statistics, ISTAT (www.istat.it), every year, for each geographic area), or relative poverty (similarly determined by ISTAT) where at least one family member relies on lifesaving medical equipment or has a severe handicap or is in receipt of electricity or gas bonuses. Households will be identified by partner organisations and through schemes 1 and 2. Social services will determine the anonymised list of potential energy poor households and share it with eVISO, and together will define target beneficiaries.

COUNSEL has been designed based on a best practice model in Austria developed and successfully delivered by SocialWatt partner Caritas Austria, in collaboration with a utility.

Partner organisations' staff and energy experts will assess each client's need for either energy advice or more involved intervention, for instance an appliance replacement. Up to one year after, the staff will visit households again and collect data about the effectiveness of the advice and its efficacy in alleviating energy poverty.

Partnerships have been formed with Caritas-Saluzzo and Monviso Solidale. Other stakeholders, such as a saving foundation institution, are being approached as potential sources of further funds.

This scheme will primarily focus on advice on household energy consumption and might also include household appliance replacements for more efficient ones (with scheme 4).

COUNSEL is partly financed by the partner organisations themselves as their staff will fill the questionnaires, contact households and give the initial energy advice. In cases where further energy expertise is needed, eVISO will provide this.

Similar to the CONNECT scheme, COUNSEL might encounter issues around privacy and data sensitivity. A strong GDPR data flow has therefore been produced. The partner organisation will take care of collecting data but will anonymise this before sending to eVISO. eVISO will then analyse the data and cooperate with the partner organisation to define the energy advice the partner will deliver.

The full process is GDPR compliant and the social service organisations will use their data protection officer to handle privacy.

Scheme 3 is quite innovative. The partner organisations are already addressing energy poverty partially in some of their services, for example by providing funds to households with arrears on bills, but this addresses the consequences of energy poverty, not the causes. If households are able to better understand why their energy consumption is too high, and be more energy efficient, then energy poverty would be alleviated more successfully.

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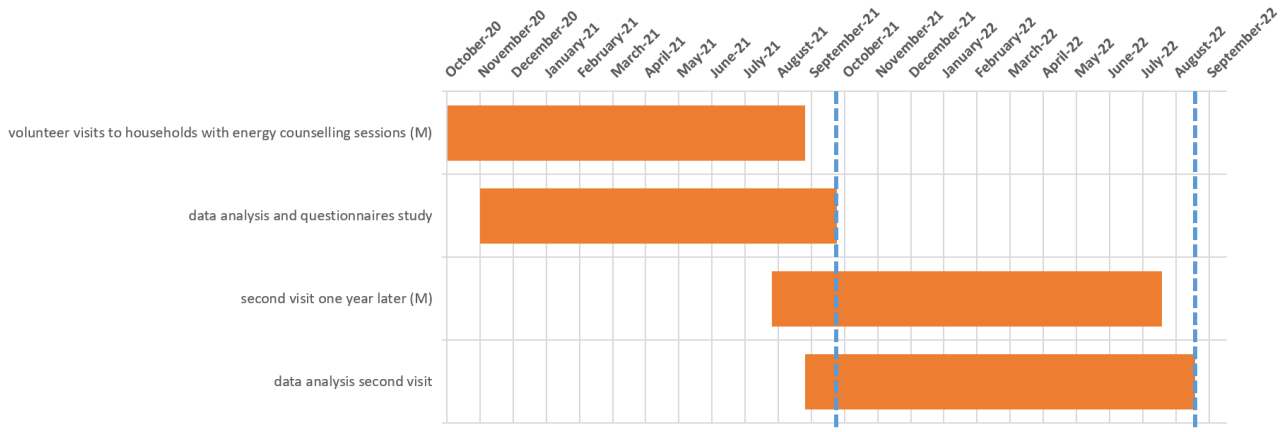
4.5.2 SWOT ANALYSIS

	Strengths	Weaknesses
Internal	eVISO can handle data and profit from deep data analysis	eVISO cannot meet social services' household clients directly and needs external collaborators to help with data collection and the delivery of advice Energy advice is not the core business for eVISO
	Opportunities	**Threats**
External	To increase knowledge about households near eVISO's geographical area of interest and increase awareness about new situations eVISO has not considered yet To increase understanding through data analysis within new environments, and within new partnerships.	Challenges in engaging households Challenges or uncertainties in external resources (financing, partners etc.) GDPR compliance Challenge to visit households due to COVID-19 restrictions If both social services fail to directly engage households, then questionnaires may be useless and the scheme may not work.

4.5.3 PLANNING AND RESOURCES

The timeline for COUNSEL is illustrated in the figure below. In one year from October 2020, households will be visited or contacted and advised. Up to one year after, they will be visited again for feedback.

Figure 4: Timeline for scheme 3 in Italy



* In a dashed blue line, the two milestones (M)

The first iteration of this scheme as described here could be scaled up if deemed a success, especially with the contribution of external funds. This will lead to a broader implementation in other Italian regions and, hopefully, in the whole of Italy.

Stakeholders will fund their collaborators to visit dwellings and eVISO will provide energy expert counselling. The estimated costs for the first iteration are around €2,500.

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4.5.4 RISK ASSESSMENT

Partners' help is crucial for meeting and getting in touch with households. eVISO does not have the same experience as social services. In addition, energy experts could be needed to provide energy counselling sessions for households who might have more complex energy advice needs.

Delivering energy counselling sessions could be another threat. The final goal is to provide social services with enough tools to advise directly with no further help, but this is complicated, especially at the beginning.

4.5.5 MONITORING AND EVALUATION

During meetings with households, social services partner organisations will complete questionnaires where data, particularly linked to identifying energy poverty and on energy consumption, will be collected. This data will then be analysed by eVISO.

A second visit up to 12 months later will be an opportunity to collect more data about the impact of the advice provided, and how it helped decrease energy consumption.

The number of households engaged will be monitored, and the ratio between general advice and appliance replacement will be analysed.

The analysis up to 12 months later will determine the success of the scheme. If at least 50% of questionnaires lead to energy advice, then a first milestone will be accomplished. In addition, if household consumption has decreased, then the advice provided will be considered successful.

Analysis of the data collected over time can be used to assess the effectiveness of these advice measures to alleviate energy poverty.

Reaching at least 1,000 households and providing 500 energy advice sessions (together with previous schemes' actions) will be considered a successful outcome.

4.6 SCHEME 4: REPLACE - SOSTITUISCI

REPLACE promotes the replacement of appliances with more efficient ones.

This scheme is strongly connected with COUNSEL, as the energy advice is the route for households to access support for appliance replacement.

4.6.1 OVERVIEW

This scheme will support at least 60 households to replace appliances with more efficient ones. Eligible households will be in absolute or relative poverty and have appliances with an energy label of A or B or lower.

This scheme aims to replace a range of household appliances – e.g., air conditioning systems,[10] refrigerators, washing machines, heaters for hot water – with more efficient and affordable ones.

[10] Charlton, E. (2020, June 6). *Air conditioners contribute to energy poverty, new study finds*. EcoWatch. https://www.ecowatch.com/air-conditioner-2646349178.html

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The replacement appliances will be selected in retail stores around eVISO's location. eVISO aims to form partnerships with retailers to achieve reduced retail prices. For the retailer, this might lead to increased visibility and improved customer perception. The social services partners will pass vouchers for chosen appliances in each case to eligible households who can redeem these with the retailer or select a different model and pay the price difference.

The appliances' cost varies between €100 and €450, so around €18,000-20,000 will be necessary to cover the full cost of replacement of appliances for at least 60 households. The social services, with eVISO's help, have applied for funds from a foundation to cover the investments and this saving foundation granted the project €5,000 for the first year.

Securing funding from this foundation may in turn trigger a positive response from other foundations within the network. If eVISO is able to widen its influence to other stakeholders, then this scheme to alleviate energy poverty will be renewed and expanded.

The same issue of data privacy, as described for other schemes, will affect scheme 4. The appliance retailer will be named as the data processor and asked to sign the responsibility document (GDPR compliant).

REPLACE is innovative in Italy for two main reasons. First, it will enable appliances to be replaced with more efficient ones for energy-poor households. This will save energy, lower households bills and reduce CO_2 emissions. Replacement programmes are not widespread nor well supported in Italy. Second, although social services organisations currently help households to pay their bills, with this scheme they decrease the bill long term, resulting in fewer issues with paying bills and lower arrears. These multiple impacts could be convincing for involving other potential stakeholders, funders and partners.

There is potential for this scheme to spread all over Italy and trigger a more structured approach to energy efficiency as a solution to energy poverty. If successful, this scheme could be appealing to other organisations with a social welfare objective, which could join in the further expansion and replication of the SocialWatt project.

4.6.2 SWOT ANALYSIS

	Strengths	**Weaknesses**
Internal	eVISO has skills and capabilities to undertake the necessary data analysis and study the advantages of the appliance replacement (energy consumption decrease) The retailer has been contacted and eVISO has secured a discount for the appliances	If external funding is not secured, this will reduce the available budget for other schemes A retailer might not offer significant discounts for appliance costs
	Opportunities	**Threats**
External	To establish new partnerships and find new stakeholders To trigger new interventions, as this scheme's effectiveness will be evidenced	Challenges associated with engaging households and meeting their needs and expectations The COVID-19 pandemic limits face-to-face contact for assessment and

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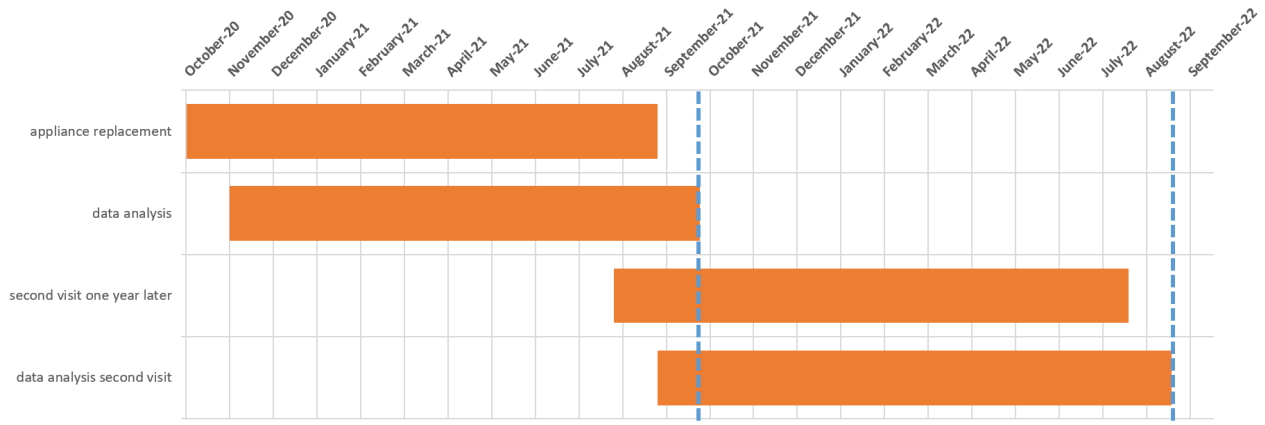
		installation Challenges or uncertainties in external resources (financing, partners) GDPR compliance

4.6.3 PLANNING AND RESOURCES

The figure below illustrates the timeline for the REPLACE scheme.

Figure 5: Timeline for scheme 4 in Italy



* In a dashed blue line, the two milestones (M)

Investments are needed to cover €18,500-20,000 for at least 60 appliances (refrigerator, boiler, washing machines and air conditioning systems). Costs for running the scheme are included in the administration cost for scheme 3. Similarly to other schemes, this is the initial investment for implementing the scheme as described. Subsequent iterations will be dependent on the success of the scheme.

4.6.4 RISK ASSESSMENT

Choosing the right replacement appliance could be tricky. Due to the COVID-19 pandemic, it is not advisable to visit households' dwellings. To avoid choosing the wrong appliance to replace, eVISO will ask the partners' staff to include pictures of each appliance – taken by households themselves – and attach them to the questionnaires. From the pictures, eVISO will decide whether that specific appliance should be replaced or not (this might partly avoid fraudulent replacements, too).

4.6.5 MONITORING AND EVALUATION

The energy consumption will be recorded before and after the replacement. The number of beneficiaries will be monitored and all the data from dwellings will be studied to map energy poverty. The questionnaire completed by households will be used to analyse the results. Appliance parameters and consumption will also be obtained before and after the replacement.

If households, after a second social services meeting, are satisfied and the energy consumption has decreased since the replacement, then the scheme for these households will be considered successful. The scheme will also be considered a success if at least 60

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households are supported.

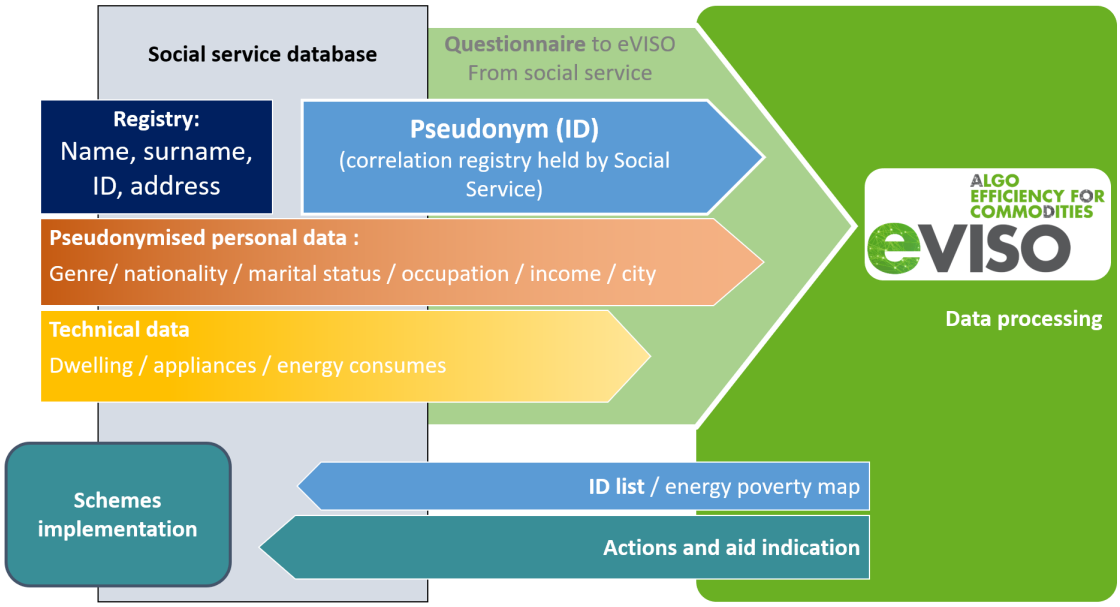
4.7 INTERACTION BETWEEN SCHEMES IN THE ACTION PLAN

All four schemes are strongly correlated. The success of one or two could determine the success of all. For instance, if the targeting and outreach in CONNECT, EQUIP and COUNSEL is successful, then the correct advice will be provided and there will be enough households helped for scheme REPLACE.

Videos, web pages and social campaigns, created by eVISO and shared by social services partners, will engage some households who might need advice for handling bills and decreasing energy consumption. Then staff of partner organisations will enrich their background with energy knowledge and provide this awareness to households during their visits. If this support is not sufficient, then energy counselling will be provided and households may improve their conditions with better guidance. If appliance replacement is recommended, then the last scheme will be applicable for these households and the replacement of energy consuming appliances will be supported.

Synergies and links in ensuring compliance with GDPR will be pursued among schemes. As is clear from Figure 6, the GDPR flow starts from the social services partners who will talk directly with households and complete the questionnaires with technical and personal data, but this data will be anonymised. This data will be sent to eVISO for analysis and help with energy advice and then back to the social services partner, which will enable implementation of schemes 3 and 4.

Figure 6. GDPR flow from social services to eVISO and back.



These schemes will constantly share resources: from engagement with energy-poor households to energy poverty characteristics.

If the schemes involve the same household, then support will not be double-counted. In general, the schemes together should help alleviate energy poverty for at least 460 households, by decreasing their energy consumption.

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4.8 EXPANSION OF THE PILOT STAGE PLANS

The expected impacts shown in Table 6 represent a baseline scenario. An improvement within the four schemes would raise the impacts, considering second level developments.

During the stakeholder analysis, a saving foundation was contacted, as described in Section 4.6.1. The social services organisations together applied for funds to a saving foundation in Saluzzo, where eVISO and Caritas Saluzzo have their headquarters. The application illustrated the potential of SocialWatt to the foundation and presented the project over several years. The main focus was to apply for grants to cover scheme four, REPLACE.

This foundation puts its interest into two main topics, called "relevant" and regarding art, culture, education, social development, healthcare, etc., with maximum budget of €550,000 (in 2021). And another called "not relevant" about volunteering, philanthropy, sport, etc., with €150,000 budget (2021). This application falls within the second topic and received a grant of €5,000 for 2021-2022, since they understood that energy poverty has an important role in determining poverty.

In addition, this savings foundation (which on average have a budget between €0.8m and €1m) is member of an association which includes 11 foundations just in Piemonte (more than 100 in the whole of Italy). Considering only the medium-small ones (eight of 11, which have comparable budgets – as the larger ones have different application rules for which one should instead respond to a call for tenders) eVISO plans to apply for funds to two other foundations in 2022 and adding two more each year so that in 2024 they could almost all be involved (seven or eight of 11). This way the project could collect more than €100,000 in four years.

eVISO will promote the project success to the savings foundations association board and applications will be made to spread SocialWatt in other regions. Moreover, during the next years, the foundations association board (which counts more than 100 members) will be contacted to promote the project and to involve other members from other region to be part of the project.

Along with the funds possibly granted, the number of beneficiaries could rise, in four years, to 4-5,000, with 300 white appliances changed (for instance and if scheme REPLACE is not improved as it is described in its section). To reach more households, during the next years, eVISO will get in touch with other social services and organizations. This will help to spread the project across north of Italy and find more potential beneficiaries.

Meanwhile, eVISO will contact other stakeholders which have emerged in energy poverty alleviation starting from 2020-2021. For instance, consumer associations, which have detected energy poverty as one of the major social issues: these could help mapping energy poverty more. And other foundations to help households fighting energy poverty which could grant other resources at national level.

These second iteration actions are summarized in Table 7.

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Table 7: Raise schemes ambition in Italy

Year	Required targets	Resources [€]	Households involved
2021-2022	1) Map energy poverty around Saluzzo (Piemonte) with social services 2) Implement scheme REPLACE for selected households 3) Contact and apply for funds to savings foundation and others in Piemonte	20,000[(0)a)]	460
2022-2023	1) Create a shared database among stakeholders to better map energy poverty and advice 2) Contact and apply for funds to another two foundations to better spread the SocialWatt project in Piemonte 3) Open call for social services to become part of the project	20,000	800
2023-2024	1) Reach other foundations in Piemonte	25,000	1,400
2024-2025	2) Spread the schemes in all other interested regions with other stakeholders	35,000	2,300
	Total	100,000	5,000

(i)This grant puts together both eVISO's investment and the saving foundation fund

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5 GREN JELGAVA, LATVIA: ENERGY POVERTY ACTION PLAN

5.1 STRATEGY AND VISION

In Latvia the national implementation of the EED through an energy efficiency obligation scheme obligates retailers of electricity that sell at least 10 GWh per year. Potentially the government can also include other industries – for example district heating, natural gas and transport – but no decisions have been made to date. As a district heating company, Gren Jelgava is not currently obligated, but the government has begun discussions with the industry body so in the near future the district heating industry may be included in the EEOS.

An official definition of energy poverty in Latvia was introduced on 16 February 2021:

> "Energy poverty: difficulties or inability to maintain an adequate temperature in the dwelling due to low energy efficiency or inability to use or pay for the services provided by the energy supply merchant due to low income or high costs of energy supply services."

The following qualifying criteria are planned to identify households as energy poor:

> "An energy affected household is a household in which a family or person meets at least one of the following criteria:
>
> 1) is recognised as a family, or a person living separately, with the status of a poor or low-income family (person) in accordance with the laws and regulations and, at the same time, receives a housing benefit in accordance with the laws and regulations regarding the provision of social assistance;
>
> 2) is provided with a residence in a social apartment in accordance with the laws and regulations regarding the recognition of a person as entitled to rent a social apartment."

5.2 CONTEXT AND PREVIOUS ANALYSIS

Gren Jelgava will focus on households according to the national criteria for energy poverty, in line with the new official definition, and will work in close cooperation with local municipalities and social institutions. To expand the range of potentially energy-poor households, Gren Jelgava will target households that have received social benefit to cover heating costs at least for one month within the last 12 month period.

An assessment of potential schemes to fight energy poverty was undertaken using the SocialWatt Plan tool and several options were reviewed. Chosen as most appropriate and realistic to implement and include in the action plan are the Renovate Your Home scheme, focusing on efficient lighting, the information and communication scheme and, subject to further negotiations with the municipality, a trial Smart Home project in a social housing apartment block. The Smart Home solution would be considered for the building as a whole, rather than for each apartment. Smart sensors and a self-learning cloud-based solution (AI) will improve the efficiency and performance of the heating substation, using data from sensors placed in parts of the building and using an online weather forecast.

In summary, at this stage Gren Jelgava has selected the three following schemes:

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- Information and communication (focused energy advice for energy-poor households)
- Renovate Your Home (efficient lighting)
- Smart Home (smart sensors to improve performance of heating substations)

Table 8: Summary of expected impact in Latvia

	Total	Info & communication	Renovate Your Home	Smart Home
Number of expected beneficiaries	1,390	1,035 (of whom 300 are expected to make energy savings)	300	355
Energy savings (MWh) (in final energy consumption)	284	106	66*	112MWh per Year
Energy production (MWh)	-	-	-	-
Total investments/costs (€)	~18,400	~5,920 – 6,880	~6,000	~6,000 +monthly service fee
CO_2 emissions savings (tonnes)	31.7[11]	12.5	6.0	13.2

* Assumed lifetime of LED bulb 3 years

5.3 SCHEME 1: INFORMATION AND COMMUNICATION

Energy saving advice focuses on and targets only energy-poor households.

5.3.1 OVERVIEW

Gren Jelgava historically has distributed educational materials about energy saving to customers, printing this information on selected energy bills. Upgrading the methods of presenting this information and the interactive involvement of the target audience would be a significant change to how Gren's energy advice work is organised.

Gren Jelgava is planning to target 1,035 low-income households that receive social benefit from the municipality at least for one month within last 12-month period to cover part of their heating costs.

These households will be sent informative brochures with energy-saving advice focusing on

[11] CO_2 emission factor values used in the calculation are from Jelgava city SECAP plan https://zrea.lv/upload/attach/Jelgavas_energetikas_un_klimata_plans.pdf.. For heat the average value is 0.117 t/MWh which has been applied to the information & communication and Smart Home schemes and for electricity 0.091t/MWh applied to the Renovate Your Home lighting scheme. According to Gren internal data, the real emission factors for heat is much higher - i.e., 0,7t/MWh for sold MWh compared to the average of Jelgava city in 2018. As schemes can be scaled at city level the average city emission factor values were applied.

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more efficient consumption of heat and hot water at flat and whole building level. To motivate households to read and understand the advice a questionnaire will be included. Submitting answers to Gren Jelgava before a specific date will give the household the opportunity to participate in Scheme 2 — free low-energy lighting — thereby receiving benefits from the utility that will help reduce their energy consumption. The questionnaire will include questions about household energy-saving habits and specific questions about how to save energy. The questionnaire will be directly related to the information in the brochures. Respondents will have the opportunity to submit questionnaires digitally, but most are expected to submit this in written form, so pre-paid envelopes will be included to encourage the submission of answers.

Gren Jelgava has started discussions with another Horizon 2020 project, PowerPoor,[12] about potential synergy between SocialWatt and PowerPoor. For the PowerPoor project one of the key activities is the use of "energy supporters" who will engage citizens suffering from energy poverty, provide advice and enable them to plan, secure funding and implement energy efficiency interventions. The SocialWatt project can provide data on energy-poor households that are willing to receive extra face to face support. In the questionnaire Gren Jelgava is planning to specifically ask if households are interested in receiving personalised advice. If they confirm interest Gren Jelgava will forward the data of those households to the PowerPoor project team that can then provide detailed and individualised energy-saving advice.

Total costs are expected to be about €6-9 per household, which includes development, printing and distribution of informative materials and questionnaires, and the costs of collecting and processing the responses.

For this scheme, compliance with GDPR requirements will require specific attention.

5.3.2 SWOT ANALYSIS

	Strengths	**Weaknesses**
Internal	Clear database of target audience – Gren Jelgava receives monthly data on households that receive social benefits Easy to implement	Despite offering two routes to return questionnaires, it is not guaranteed that households will return them
	Opportunities	**Threats**
External	Engage customers to adopt energy saving advice with motivational bonuses Positive public relations	Challenges to engage households Risk that some ineligible households may complain that they are not included in the scheme GDPR sensitivities

[12] https://powerpoor.eu. The main aim of PowerPoor is to support programmes/schemes for energy-poor citizens and encourage the use of alternative financing schemes (e.g. establishing energy communities/cooperatives, crowd funding). The project covers 11 European countries (Belgium, Bulgaria, Croatia, Estonia, Germany, Greece, Hungary, Latvia, Luxembourg, Portugal and Spain)

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5.3.3 PLANNING AND RESOURCES

The first activities are planned in February 2022. The process and materials will be developed internally by the Gren team.

The process will involve customer care, legal, marketing and public relations departments. The municipality and social department will support the process.

Decisions about potential continuation of the scheme will depend on several factors. If the EEOS becomes binding for the district heating industry and if the implementation of this scheme is evaluated as successful then there is high potential to continue it in future.

5.3.4 RISK ASSESSMENT

The main risks are related to the correct implementation of the GDPR. The legal department will therefore be strongly involved.

Strong cooperation with the municipality and internal marketing, legal and public relations departments will minimise the risk of bad publicity or low interest from the target audience. The municipality's social department will support the activities with the necessary information to successfully identify the target audience.

5.3.5 MONITORING AND EVALUATION

Gren Jelgava will monitor the ratio between households who receive advisory materials and those who submitted answers to the questionnaire and are referred to Scheme 2.

Energy savings will be calculated according to the official EEOS methodology set by the Ministry of Economics. The official catalogue of energy savings for the EEOS credits awareness-raising activities providing general tips with information on the company's website, individual events and printed materials with energy savings of about 2.5%. Energy savings will be estimated using this assumption and the actual consumption of flats included in scheme.

Gren Jelgava expects that at least 30% of the target audience will apply to participate in Scheme 2 to reduce its energy consumption with energy-saving LED lights.

5.4 SCHEME 2: RENOVATE YOUR HOME

Households targeted during Scheme 1 will have the option to apply for Scheme 2 to receive support from the utility to improve the energy efficiency of the lighting in their home.

5.4.1 OVERVIEW

The energy-poor households that receive energy-saving advice materials during Scheme1 will also receive a questionnaire about energy savings. Those who submit their answers before the deadline, with the necessary percentage of correct answers, will receive a set of LED lights free of charge.[13] This will motivate households to fully engage with the informative materials and implement the advice in their daily life.

Gren Jelgava expects to deliver sets to households using courier services. Costs per

[13] Analysis of the appropriate number of bulbs and engagement of a supplier is ongoing.

household are expected to be about €20, including delivery expenses.

Depending on the level of interest from households, Gren Jelgava expects to implement the scheme in 300 households.

This combination of schemes is an easy way to motivate energy-poor households to focus on changes to their daily habits to decrease energy consumption.

5.4.2 SWOT ANALYSIS

Internal	**Strengths**	**Weaknesses**
	At this scale, the project can be managed by internal resources	Limited possibilities to allocate funding
External	**Opportunities**	**Threats**
	To engage customers with attractive offers and reduce energy consumption Positive public relations	Low participation from households Other households can find this support unfair GDPR compliance

5.4.3 PLANNING AND RESOURCES

Implementation of Scheme 2 is expected to start 1-2 months after Scheme 1 has been launched. The customer care, legal, marketing and public relations departments will be strongly involved in the process, alongside an external partner that can potentially support the scheme, i.e. a supplier of LED bulbs. If the EEOS becomes binding for the district heating industry in the future, and the implementation of this scheme is considered successful, then there is potential to continue it in future.

5.4.4 RISK ASSESSMENT

Main risks are related to the correct implementation of the GDPR. The legal department will therefore be strongly involved.

5.4.5 MONITORING AND EVALUATION

Gren Jelgava expects to involve 300 households.

Gren Jelgava will calculate energy savings according to the methodology set by the Ministry of Economics. The difference between the energy use of LED lights and regular light bulbs – assumed to be 60W – will be multiplied by 1,460 hours to calculate total annual energy savings.

5.5 SCHEME 3: SMART HOME

Social housing will be upgraded with a self-learning, cloud-based software solution (AI) that automatically visualises and optimises energy use in a building based on data from smart sensors within the building and online weather forecasts.

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5.5.1 OVERVIEW

Installing such a solution in social housing allows the scheme to reach low-income households that, according to the legislation from February 2021, are considered to be energy poor. The activities will therefore benefit energy-poor households only.

Better saving results are reached in buildings with poor energy efficiency. We are discussing with 2 municipalities about 4 buildings to include in pilot project.

Gren Jelgava will work with the city municipality, the social department and a housing company owned by the municipality to implement this scheme. The supplier of the smart technology (eGain) is also an important technical partner.

AI and software using real-time data optimises the performance of the heating substation, giving two benefits to heat users. Firstly, it improves the level of comfort as the temperature in the heating substation is adjusted, based on temperature data from sensors inside the building and short-term weather forecasts. The second benefit is a reduction of heating costs due to a more accurate regulation of the heating substation. Up to a 20% reduction of heat consumption is expected.

This scheme requires investment in sensors and a monthly fee for the use of the system and specialised software.

If implementation of this scheme is successful, not only will it improve comfort and reduce costs for energy-poor households, but it can also be replicated in other social housing units or offered to regular multi-apartment houses to ease the burden of high energy costs for a larger number of households.

5.5.2 SWOT ANALYSIS

	Strengths	**Weaknesses**
Internal	Gren Jelgava has experience with similar technologies in other countries Experience with partners in other projects	No internal experience with this technology with this building type
	Opportunities	**Threats**
External	To test new innovative technology To expand business offerings to other households With a small investment many energy-poor households can benefit	Real savings will be lower than claimed Sensors can be damaged or stolen

5.5.3 PLANNING AND RESOURCES

The first step, together with the municipality, social department and housing company, is to agree on the specific social housing building, then to agree the practical details on how the implementation will be organised. Information and communication support will be supplied from municipal organisations, and the social department's social workers will communicate directly with households explaining the potential benefits of the project and organising the installation schedule, as some sensors will be installed inside the flats. The

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municipal housing company will support the technical installation process and will be involved in planning the optimal placement of sensors. Financing of the system running costs is under discussion with the municipality.

Gren's internal department of heating substation technical services will undertake the physical installations and the programming of the system with the support of the technology provider. An assessment of the real energy savings achieved within this scheme is crucial to plan future activities. This pilot project will provide valuable information about the smoothness of the process, actual energy saving results, and increased comfort levels (inside temperature). Potential technical and practical problems can be identified. Analysis of costs and benefits and overall system efficiency will give the necessary information to make decisions on whether this technology will be scaled up to other buildings connected to the district heating network.

5.5.4 RISK ASSESSMENT

Careful planning of the installation and programming the system following the guidelines from the manufacturer will reduce the risk of potential damage to equipment and will allow the optimal use of the system. A well-planned installation and setup process and regular monitoring of the system performance will mitigate potential threats and risks of poor system performance and will allow rapid identification of permitted actions.

5.5.5 MONITORING AND EVALUATION

Results of actual savings can be monitored by the system.

Gren Jelgava expects that the system will save 10% compared to historical heat consumption (excluding consumption of hot water). This is a conservative/realistic estimate, based on the optimal system savings of 20% but taking into consideration real world variables, including building conditions, existing behaviours and spending habits, and the existing system efficiency. Depending on the building selected, energy savings may differ. If the project is implemented in the four social housing buildings that are shortlisted, with annual total heat consumption of 1,120MWh, Gren Jelgava expects to reduce consumption by 112MWh. The buildings are located in Ogre city and in region at Lielauce. Most of inhabitants are receiving social benefits but still have to cover most of their heating costs.

5.6 INTERACTION BETWEEN SCHEMES IN THE ACTION PLAN

The first two schemes are very strongly integrated. They will be delivered as one project to optimise the resources involved and to deliver a more successful implementation of both schemes. These two schemes focus on energy-poor households that receive social benefits to help them pay heating bills. The third scheme focuses on energy-poor households that live in social housing.

The first two schemes can be applied also to households living in social housing. The third scheme, Smart Home, could, if successful, be applied to other multi-apartment buildings outside the social housing sector. The key difference with its application to broader housing will be the financing of the initial system costs and regular running costs.

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6 CEZ VÂNZARE, ROMANIA: ENERGY POVERTY ACTION PLAN

6.1 STRATEGY AND VISION

When the SpcialWatt project was launched, Romania did not have a clear definition of energy poverty or an energy efficiency obligation scheme under Article 7 of the EED. Subsequently, in light of the recent rise of energy prices the Romanian Government decided to adopt a social protection law dedicated to the vulnerable energy consumers.

In September 2021, a dedicated Law (226/2021) regarding social protection measures for vulnerable energy customers was published. This new Law gives a more complete definition of energy poverty (that was first defined in Law 196/2016 regarding the minimum income for inclusion): the impossibility of the vulnerable energy consumer to cover its minimum energy needs where:

- vulnerable energy consumer - a single person/family who, due to health, age, insufficient income or isolation from energy sources, needs social protection measures and additional services to ensure at least their minimum energy needs;
- minimum energy needs - the minimum energy consumption of an individual/family for lighting, optimal home cooling and heating, cooking and hot water preparation, for using communication means that need to be plugged-in or for powering medical devices used for life support or for improving people's health.

Under the provisions of Law 226/2021, in order to be eligible for the aid provided for, vulnerable consumers must apply for aid if they are in one of the following situations: they have low income, old age, health problems or they are isolated from the grid.

The new law came into force in November 2021.

CEZ Vânzare's strategic positioning is as a strong, reputable and reliable partner and a smart, efficient, safe, green and digital company. CEZ Vânzare's vision is to become a sustainable energy services provider, address the climate crisis and support economic development. CEZ Vânzare has a solid tradition in corporate social responsibility activities, confirmed by various awards, and aims to achieve long-term results and involvement in the community on health and wellbeing, environmental protection, education and regional development issues. In the last 15 years, projects have been established on the real development needs of communities, in close collaboration with stakeholders (employees, local authorities, educational institution, NGOs, etc.).

During the project, CEZ Vânzare, part of CEZ Group in Romania, was acquired by funds managed by Macquarie Infrastructure and Real Assets (MIRA), part of the Group Macquarie from Australia. New investments will be on hold and gaps may occur. This action plan has therefore been developed in line with this limitation on longer-term planning. Despite this disruption, CEZ Vânzare will continue to innovate and seek solutions in order to have the best approach and results when implementing the SocialWatt project.

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6.2 CONTEXT AND PREVIOUS ANALYSIS

Romania did not have a clear definition of energy poverty or an energy efficiency obligation scheme under Article 7 of the EED, when the project was launched. In order to better address and identify energy-poor citizens, five indicators incorporated in the SocialWatt Analyser tool were considered (10% approach, low-income high cost [LIHC], high share of energy expenditure [2M], SocialWatt indicator and arrears on utility bills) and the results compared.

The data analysed by the SocialWatt Analyser tool included 1,039,080 records from the CEZ Vânzare customer database (including customers on regulated prices). Considering the assessment and analysis carried out using the SocialWatt Analyser tool, CEZ Vânzare aims to target energy poverty in the schemes that are developed for Romania by focusing on:

- 24,189 energy-poor households which were identified as energy poor by all six indicators analysed using the SocialWatt Analyser,[14] if compliance with the GDPR can be ensured;
- Top five cities, with an emphasis on the poorest (Craiova and Drobeta-Turnu Severin).

Nevertheless, the chosen schemes will not be limited to the above target groups.

Considering business strategy and priorities, budget, risks and constraints defined, CEZ Vânzare has developed and begun to implement four schemes within the framework of SocialWatt. Two of the four schemes involve new concepts (a new Helping Hand approach and energy-saving LED bulbs concept), defined below. The schemes will have the following estimated impact:

- **Helping Hand**: Grant competition campaign aimed to finance projects to reduce energy poverty:
  - €60,000 total CEZ Vânzare cost
  - Implementation start: 2020 – campaign already launched. Implementation deadline: 2021
  - 147 tablets for children; 2,173,792 expected reach with media campaigns; Further expected beneficiaries will result after grant competition winning projects are established. Over 35 new efficiency appliances acquired for 15 social dwellings (mono-parental families) involved in the programme. Small reparations will be made in order to improve the quality of life (polystyrene, double glazed door, window, wall repairs).
- **Smarter Home**: thermostats will be offered to customers who will pay for them at fixed rates without interest. The thermostat can be linked to apartment/house heating (powered with electricity or gas) and to air conditioning. The scheme is available to all customers. The following outputs and impacts are expected:
  - €450,000 total CEZ Vânzare cost

[14] Sunderland, L. et al. (2020). Evaluation of *schemes* to tackle energy poverty. SocialWatt, https://socialwatt.eu/library/publications

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- Implementation start: 2020 - thermostat product already launched. Implementation deadline: 2021
- 2,000 households and 6,000 expected beneficiaries, of which 350 households are expected to be energy poor[15]
- 7.7 GWh total energy savings (two-year estimation), of which 1.34 GWh is expected to be delivered in the energy-poor household subset
- 1.5 kt CO_2 emissions savings, of which 0.3 kt is expected in the homes of the energy poor

› **Renovate Your Home**: energy-saving LED bulbs will be provided to energy-poor households to reduce their electricity consumption. The bulbs will be offered to energy-poor customers for free. The estimated impact is as follows:

- €20,000 total CEZ Vânzare cost
- Implementation start: 2021. Implementation deadline: 2022
- 11,000 households and 33,000 expected beneficiaries
- 7 GWh energy savings (six-year estimation for the duration of a lightbulb lifespan)
- 2.2 kt electricity CO_2 emissions savings

› **Information and communication**: The focus will be on information and education campaigns for children, customers and non-customers, to reach and better address each target age group, in order to improve and educate people and promote energy-efficient behaviour. The estimated impact is:

- €204,437 in 2020 and €103,190 in 2021 total CEZ Vânzare cost
- Implementation start: 2020 – campaign already launched. Implementation deadline: 2022
- 3,374,062 expected reach through media campaign (based on reach of previous campaigns), around 20% of which is estimated to be energy poor – 674,812 customers.
- 5.3 GWh electricity energy savings in energy-poor households
- 1.6 kt of CO_2 emissions savings

In conclusion, the estimated overall impact of the four CEZ Vânzare schemes to be implemented, three of which are innovative, will be:

› €837,537 total CEZ Vânzare cost, of which €191,000 is specifically focussed on energy-poor households

› Over 6 million overall expected reach and impressions, and more than 686,400 energy poor direct beneficiaries (i.e. households).

[15] This figure is based on 17.5% of the customer base estimated to be energy poor. This percentage is the finding of the analysis undertaken and presented in Sunderland, L. et al. (2020).

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- Over 12 GWh energy savings in energy poor households
- Over 3.8kt CO_2 emissions savings in energy poor households

Table 9: Summary of expected impact in Romania

	Total	Helping Hand	Smart Home	Renovate Your Home	Information & communication
Number of expected reach and beneficiaries	Over 684,000 energy poor (plus direct beneficiaries from Helping Hand tbc)	3,211,190 (impression) 138,220 (video views) 15 single parent families	350 (energy poor) 2,000 (total)	11,000	672,993 (energy poor) 3,364,965 (total)
Energy savings (GWh) (in final energy consumption)	Over 12 (plus energy savings generate by Helping Hand tbc)	Dependent on successful projects	1.34 GWh (energy poor) 7.7 GWh (total)	7.09	5.26[16]
Total investments (€)	191,000 837,537 (Total)	~ 30,000 grants and promotion 30,000 tablets campaign in 2020	78,750 (for energy poor) 450,000 (Total)	20,000	61,525 (20% of total budget in proportion to energy-poor population) Total budget: 2020: 204,437 2021: 103,190
CO_2 emissions savings (kt)	Over 3.8	Will depend on successful projects	0.3 (energy poor) 1.5 (total)	2.2	1.6

In order to increase our ambitions, for 2022 CEZ Vânzare plans to extend both Helping Hand and the Information and communication schemes, based on lessons learned in the implementation period (current experience, know-how and actual results). Further estimations and concrete actions will be detailed and described after internal CEZ Vânzare Business Plan development has been completed and will be harmonized with new shareholders and business strategy, priorities, risks and market evolution. Further estimations and concrete actions can be detailed and described after internal CEZ Vânzare Business Plan development that will be in place in December 2021, and will be harmonised with the business strategy, priorities, risks and market evolution. All communication channels will be

[16] Estimated based on 10% of the energy poor households taking energy saving action as a result of the scheme, 2.5% of savings for those that take action, and an average consumption per household of 3,116kWh.

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used in order to better address the energy efficiency to our customers, as described in sections 6.6 and 6.7.

6.3 SCHEME 1: HELPING HAND

A grant competition campaign aimed to finance energy poverty alleviation projects.

6.3.1 OVERVIEW

CEZ Vânzare aims to reach energy-poor households and alleviate energy poverty by providing communities with financing to adopt the best solutions and raising awareness of energy poverty in society. The scheme will provide around €10,000 grant funding to one or multiple projects to contribute to project costs through a competition.

CEZ Vânzare has developed this scheme in consultation with NGO stakeholders and the competition will be organised in partnership with a host NGO. This will ensure that the necessary documentation is prepared (regulations, participant guide, selection of projects, etc.) and enable follow-up of the implementation of the winning projects. The competition will target regions with high levels of energy poverty.

NGOs, public institutions, local public authorities or educational institutions from the state system in the specified localities will be eligible to take part in the competition. This scheme will target energy-poor households, not directly through CEZ Vânzare's customer database, but through working with organisations embedded in the community that know the community's conditions and needs. By working with organisations based in regions that CEZ Vânzare supplies energy, and in which the utility serves the vast majority of households, the scheme can effectively target its energy-poor customers. The beneficiaries will be CEZ Vânzare clients from vulnerable/socially disadvantaged groups from its operational area: the elderly, people with disabilities, people from rural areas, single people, single-parent families, etc.

The proposed €30,000 budget (both grant and promotion) is entirely from CEZ internal resources.

In its first edition (piloting phase), the competition will seek ideas for innovative social projects. These must have a medium- and long-term impact and improve comfort inside the home (by increasing energy efficiency, energy renovation, supporting the payment of bills for limited periods, smart meters, connection aid, green energy promotion, etc.). As is usual practice within CEZ Vânzare, the first phase of this scheme will be reviewed in December 2021. Historically, successful schemes have been continued, repeated or scaled up. However, current uncertainty on the new ownership of the company and the priorities in future years mean that no commitment can be made until later in the takeover process.

Through this competition CEZ Vânzare aims to support UN Sustainable Development Goal 7: Clean and affordable energy.

Timeline:

- February – April 2021: establishing guest NGO partnership, preparing competition documentation
- May: Registration and internal/external communication

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- June: Judging and announcing the winners
- July: Grant allocation
- July – November: Project implementation
- December 2021: Evaluation

A total of 2,173,792 people will be reached by awareness-raising campaigns achieved through providing NGOs or local administration with grants to finance projects. Specific beneficiaries will be identified when the winning projects are established. The first stage of the scheme – which involves informing and raising awareness – began in 2020 (Scheme 4).

In terms of previous beneficiaries, in 2020, 147 children benefited from computer tablets and advice in order to educate them and better address energy issues. The concept in 2020 was developed in partnership with Save the Children Romania, an international NGO, which used its internal data to identify beneficiary children. The investment in the tablets in 2020 has been estimated at €30,000. Further costs to launch and support this scheme, which cover marketing, a campaign to raise awareness, system development, donations and grant management, are further described in Scheme 4.

The innovation of this scheme comes from the fact that no other grant contest on energy poverty alleviation is organised by utilities in Romania at this moment.

6.3.2 SWOT ANALYSIS

	Strengths	**Weaknesses**
Internal	Electricity and gas provider with access to more than 1,300,000 household customers Strong brand that can offer people a safe way to help others A reliable partner for the local community A partner in continuous open dialogue with its stakeholders (e.g. stakeholder engagement for the sustainability report) and close to customers	No internal evidence of energy-poor households' needs Lack of previous experience in running a competition like this
	Opportunities	**Threats**
External	Raise awareness of energy poverty Engage customers in a socially responsible way Develop a long-term relationship with the local partners and identify new opportunities for communities Build a sustainable brand.	The scheme is reliant on the quality of the applicant projects Lack of engagement of households The uncertainty generated by the COVID-19 pandemic and the possible restrictions

6.3.3 PLANNING AND RESOURCES

Timeline:

- Green promise campaign and tablets donation: Q3 2020

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- Grant competition management: Q2 2021
- Grant contest: Q3 2021
- Launch of competition: Q4 2021
- Evaluation: December 2021 and subsequent decision on the replication or continuation of the scheme

Internal resources:

- Information on customers and potential energy-poor households
- Funding in order to market the competition and get partners on board, as well as funding for the final projects
- Human capital in order to build the concept and manage the process

External resources:

- Human capital from partners in order to identify beneficiaries and implement projects
- Online platform for grant management

6.3.4 RISK ASSESSMENT

Possible risks and threats:

- Quickly changing legislation: medium risk. Will be mitigated by partnering with other stakeholders and splitting the risk.
- Other social issues drawing attention away from energy poverty: Low risk. Will be mitigated through focusing on corporate social responsibility efforts.

6.3.5 MONITORING AND EVALUATION

CEZ Vânzare will monitor how many energy-poor households receive help and how many beneficiaries are able to overcome energy poverty. This will be mainly achieved through internal company reports as well as reports provided by partners. The success of the scheme will be evaluated through quantitative measures, such as number of beneficiaries, and through qualitative indicators that assess how CEZ Vânzare has made a difference for beneficiaries. Details captured will include the project submission, type of project, project details, final beneficiaries, local community impact. New ideas emerging from the community and opportunities for further competitions will also be captured.

6.4 SCHEME 2: SMART HOME

CEZ Vânzare will aim to provide affordable energy management technology (thermostats) to its customers, paid for through monthly instalments free of interest. This scheme is open to all customers but has been designed to be suitable for energy-poor customers.

6.4.1 OVERVIEW

CEZ Vânzare aims to reach 2,000 households (6,000 beneficiaries) that will install thermostats, in order to decrease energy consumption used for heating through smart management,

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and by actively promoting and educating people about smart energy management at home.

The overall uptake of the action is estimated to be 2,000 households. From these 17.5% are assumed to be energy poor (in line with the results obtained when using the SocialWatt indicator in SocialWatt Analyser). The action is therefore estimated to reach approximately 350 energy-poor households.

The investment has been estimated at €450,000, which covers marketing, procurement, distribution and installation of the technology. The legal considerations are covered by national legislation that clearly specifies the terms and conditions for thermostat installation inside households for heating systems (for example, only authorised installers are permitted to undertake the works).

The thermostats are offered at no upfront cost to the customer. The technology cost is paid back through an addition made to the energy bill at zero interest. These financial mechanisms make the thermostat offering suitable for low-income households who very often cannot afford the cost of energy-saving investments.

The innovation of this scheme comes from the fact that the technology used is unique in the Romanian market, the thermostat is able to control both the heating system and air conditioning (both regular and smart) through a wireless unit.

6.4.2 SWOT ANALYSIS

	Strengths	Weaknesses
Internal	Electricity and gas provider with access to more than 1,300,000 household customers Strong brand that can help others improve behaviour regarding energy consumption Digital company, able to provide good expertise	CEZ Vânzare is not a technology company; customers will need to be introduced to the new offering and the fact that this is a tangible product CEZ Vânzare is only able to sell the product to customers with an energy or gas contract
	Opportunities	**Threats**
External	To raise awareness of energy efficiency To provide customers with tools to reduce large bills and complaints	Rapidly evolving technology as opposed to slow changes in consumer behaviour Despite the favourable financial options, there is a risk of lack of take up by energy-poor households

6.4.3 PLANNING AND RESOURCES

Timeline:

- Building the concept: Q1 2020
- Developing the financial and legal aspects of the project: Q1 2020
- Consolidating workflow and procedures: Q2 2020

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- Contracting suppliers: Q3 2020
- Go live: September 1, 2020
- Expected duration: 2 years (at which point the scheme will be reviewed and potentially relaunched)

Internal resources:

- Funding in order to acquire the technology and coordinate its installation
- Platform in order to manage demand for the technology and track the payment of instalments

External resources:

- Know-how regarding the technology and installation provided by suppliers
- System developments in CEZ Vânzare's enterprise resource planning platform in order to allow it to invoice instalments and track payments

6.4.4 RISK ASSESSMENT

Possible risks and threats:

- New technology not being embraced quickly by customers
- Lack of households with compatible heating and cooling systems

6.4.5 MONITORING AND EVALUATION

CEZ Vânzare will monitor the number of households that install thermostats, along with changes in the consumption of these households. This will be monitored using a dashboard provided by the technology supplier that allows CEZ Vânzare to see all installed thermostats and monitor working conditions. The target for a successful project is to help 6,000 people (2,000 households) to benefit from energy efficiency, better heating and energy savings. The success of the scheme will be evaluated through quantitative measures, such as number of beneficiaries, and behaviour change impact on consumption.

CEZ Vânzare will monitor the impacts of this pilot to assess what proportion of the participants in the scheme are from the energy-poor group of customers identified in the analysis. The results of the SocialWatt Analyser will be used to identify if households that respond to the Smart Home scheme are energy poor. For these households, in addition to monitoring the consumption as described above, CEZ Vânzare will also assess changes on arrears on bills using CEZ Vânzare internal data.

6.5 SCHEME 3: RENOVATE YOUR HOME – REPLACING OLD LIGHT BULBS WITH EFFICIENT ONES

This scheme will reduce the electricity consumption and energy costs of energy-poor households by replacing old, inefficient lighting with higher-class, energy-efficient light sources. This scheme is innovative in the Romanian context as the provision of low-energy lighting has not to date been used as a technique to alleviate energy poverty.

6.5.1 OVERVIEW

The scope of the scheme is to provide free highly efficient LED light bulbs to 11,000

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households. These households are CEZ Vânzare customers who have been identified as energy poor, using the combined results of the six indicators assessed in the SocialWatt Analyser. Considering that an average household is made up of three people, this scheme will reach about 33,000 beneficiaries.

The estimated cost is €20,000 which includes acquisition, delivery and marketing costs. All light bulbs will be of high quality and will include the manufacturer's warranty. The targeted households will be monitored for the lifetime of the bulbs (six years) in order to analyse the scheme's impact in terms of consumption.

The effects on consumption of the new lighting technology are undeniable and the scope of the action is to facilitate the implementation of this technology to poor and/or remote households. From a legal point of view, the bulbs will be handed freely to the selected households (largely via regional customer care centres) on the basis of a receipt of goods.

This action plan covers an initial implementation period of one year. The scheme will be evaluated at the end of the year and, subject to the investment priorities of the new owner, the scheme may be continued.

6.5.2 SWOT ANALYSIS

	Strengths	**Weaknesses**
Internal	Experience from past similar programmes The company has the ability to monitor energy-poor households and the effects of the scheme The company is involved in many CSR actions, earning recognition from authorities and independent monitors	Requires logistical works for distribution that may be disrupted or threatened by the ongoing COVID-19 situation May be hard to reach the initial targeted households
	Opportunities	**Threats**
External	Campaign adding visibility for the supplier Simple scheme with high carbon-saving and energy-saving results	Lack of engagement from households and lack of interest in receiving and installing light bulbs People may receive the bulbs but not use them, or sell them

6.5.3 PLANNING AND RESOURCES

Timeline:

- Determination of the participating households Q1 2021
- Finalising the purchasing process Q2 2021
- Starting distribution through own customer care offices Q3 2021
- Finalising distribution by redistributing the remaining stocks Q1 2022
- Start monitoring the changes in consumption of beneficiaries: from Q2 2020 - ongoing

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Internal resources:

- Funding in order to purchase 11,000 highly efficient light bulbs
- Information on customer base for selecting the participants
- Human resources for logistics and distribution
- Funding for promotion and awareness
- Human resources for analysing the scheme's impact for the duration of the bulbs' lifetime, estimated at six years/10,000 hours of operation

External resources:

- External partners, depending on the specific distribution strategy

6.5.4 RISK ASSESSMENT

Risks analysed include:

- The bulbs cannot be supplied to all households from the initial list
- People will not install/use the bulbs
- Although in theory the carbon reduction is significant, the ex-post analysis may not show energy savings. This is due to the fact that monitoring will be of the entire bill, without isolating lighting consumption.

6.5.5 MONITORING AND EVALUATION

CEZ Vânzare will monitor the monthly billed consumption for the entire list of households that have received an energy-efficient light bulb. The monitoring will be kept monthly by extracting the data from its internal billing software. Periodically the consumption trend will be highlighted in order to see the effects of the scheme. The measure of success will be a consumption reduction as calculated in the initial plan for at least the warranty time of the light bulbs. The impact on arrears on energy bills will also be assessed to establish any reduction in energy debt.

Also, there will be periodic surveys in order to find out if the bulbs were received and installed, and whether they cover household needs (light level, light colour, economy in energy bill etc.). In parallel, given this opportunity, other information will be collected in order to find out more about energy-poor customers and their needs, and inform future projects.

6.6 SCHEME 4: INFORMATION AND COMMUNICATION

This scheme aims to inform the community, by providing energy efficiency tips that can reduce energy consumption and alleviate energy poverty.

6.6.1 OVERVIEW

The audience of the information campaign is national, but CEZ Vânzare will also use the contact details of clients for whom it has a marketing agreement to direct the message to them (e.g. through newsletters). The reach of this campaign is estimated at about 3,375,000 individuals.

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The aim of the campaign is to educate and inform people to be energy efficient, using clear messages and advice suitable for energy-poor households. The campaign will specifically signpost and encourage the take-up of the energy poverty schemes, for example encouraging the take-up of the LED offering. This scheme supports all other schemes. CEZ Vânzare will use the internal data obtained from the SocialWatt study on the status quo of energy poverty and its mitigation in the EU[17] and geographical criteria to direct the message of the campaign to households directly interested. The campaign will be implemented with internal support (project team, product development department, marketing department) and external partners (public relations agency, NGOs). The online information campaign will include an energy efficiency questionnaire, radio and Facebook contests, an e-book on energy efficiency, a radio campaign, social media posts and a digital campaign.

The first phase of the campaign started with online energy efficiency workshops for children (October to December 2020). The information campaign was launched using digital, TV and radio communications as well as printed materials. In 2021, CEZ Vânzare intends to continue with a YouTube campaign by promoting videos/podcasts about practical energy efficiency measures. Also, CEZ Vânzare will continue webinars for children on energy efficiency.

The estimated investment is €103,190 and will be covered from CEZ Vânzare budget in 2021. This is in addition to the €204,347 invested in 2020 to launch the campaign.

The activities described here cover the period from 2020 to 2022. The impact of the communication campaign will be evaluated in Q2 of 2021 and, subject to the success of the campaign and the investment priorities of the new owner, the scheme may be continued and updated.

6.6.2 SWOT ANALYSIS

	Strengths	**Weaknesses**
Internal	The power of the CEZ Vânzare brand, recognised in studies as a trusted brand by customers Trusted and lasting partnerships with external collaborators Internal financial resources allocated Recommendations/advice on energy efficiency offered free of charge to customers and nationally, without any effort on their part	Lack of studies to provide statistics on the direct link between providing information and customer energy savings from such campaigns Promotion costs Exact tracking of indicators (the results of the energy efficiency questionnaire)

[17] SocialWatt. (2019). Report on the status quo of energy poverty and its mitigation in the EU. https://socialwatt.eu/sites/default/files/2020-01/D1.1%20Status%20Quo%20of%20Energy%20Poverty.pdf

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	Opportunities	Threats
External	Customers' interest in finding out tips for reducing electricity consumption and bills paid Sustaining the company's reputation – involved in caring for customers Carrying out the campaign in the online and radio environment which allows for real-time optimisation based on market feedback and results	Difficulty in changing consumption habits Adaptation to the new reality during and after the COVID-19 pandemic (replacement of workshops with webinars) Competition – possible campaigns developed by other suppliers or third parties which may confuse the message Social media algorithms may change due to new rules, affecting results

6.6.3 PLANNING AND RESOURCES

Timeline:

- Proposed actions e-book, flyers, articles, social media posts: Q2 2020
- Realisation of the concept promisiuneaverde.ro (the green promise): Q3 2020
- Sending briefs and establishing final deliverables – communication strategy and tactics: Q3 2020
- Conducting the online and offline campaign: Q4 2020
- Feedback on the implementation of the campaign: Q4 2020
- Evaluation of the online and offline campaign results: from Q4 2020
- Preparation of the 2021 energy efficiency campaign: Q1 2021
- Implementation of the energy efficiency campaign: Q1 2021
- Evaluation of the online campaign results: Q2 2021
- Communication actions, continuation and project conclusions: 2022

The financial resources used are internal ones, the know-how and the implementation are both in-house and with the support of external partners.

6.6.4 RISK ASSESSMENT

The main risk is that although the message reaches interested people, they do not act, and the recommendations do not have a direct impact in reducing consumption. To mitigate this risk, CEZ Vânzare will emphasise the benefits of following the recommendations and include a call to action in advice to maximise the impact of the communication.

6.6.5 MONITORING AND EVALUATION

CEZ Vânzare will measure the results of the campaign, in terms of the reach it had, how many times the online campaign message was viewed (social media, Facebook and Google Ads posts), number of e-book downloads, newsletter opening rate, page views, advertorials and estimate the radio audience. The results will be monitored using online platforms and provider tools that help implement the campaign, with internal and external support. The measure of success is reaching the audience and conveying a clear message,

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concrete actions and practical advice that can be implemented by clients. The evaluation will be performed by comparing key performance indicators with obtained results.

6.7 INTERACTION BETWEEN SCHEMES IN THE ACTION PLAN

Strategically, the information and communication scheme interacts with all schemes in order to promote both overall actions implemented and energy efficiency measures.

Despite the fact that the information and communication scheme has a national audience, and is not only targeting energy-poor people, it has three main advantages:

- CEZ Vânzare tackles energy poverty by **preventing it,** promoting clear advice on energy efficiency
- CEZ Vânzare offers simple but **helpful advice** to energy-poor households so that they can use less energy for the same service (e.g. replacement of all bulbs with LEDs, turning off the water while brushing teeth, etc.)
- Targeted communication, community involvement, and the SocialWatt project promotion.

All schemes have in common the support of "green" customer behaviour, which is part of the company strategy: from the use of green energy to promoting responsible energy use. In order to have a cost-effective approach, CEZ Vânzare intends to share knowledge, internal human resources, external partners and information and communication campaigns.

Although some schemes might target the same households, this is not considered problematic, as all schemes proposed complement each other. If some households benefit from more than one scheme, this is considered an added value, resulting in CO_2 savings, the alleviation of energy poverty and also increasing knowledge and awareness regarding the efficient use of energy.

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7 NATURGY, SPAIN: ENERGY POVERTY ACTION PLAN

7.1 STRATEGY AND VISION

Naturgy Energy Group is committed to the alleviation of energy poverty. Since 2017, Naturgy has had a vulnerable energy plan that is implemented through the Naturgy Foundation and its vulnerable customer department. Naturgy has helped around 100,000 people per year with its programmes.

The Naturgy Energy Group, the beneficiary of the SocialWatt project, is the main company in a holding group; Naturgy Iberia, Comercializadora regulada Gas&Power and Naturgy Foundation belong to the group. Naturgy Iberia and Comercializadora Regulada Gas&Power are supply companies that sell energy and have the relationship with customers, and Naturgy Foundation undertakes social projects. Although the vulnerability plan actions are designed by the Naturgy Foundation, the three entities collaborate in the development and implementation of this action plan. Where its customers are involved directly in projects within the action plan, Naturgy Iberia and/or Comercializadora Regulada Gas&Power has participated more in the development and, in the rest of the actions, Naturgy Foundation is the leader organisation.

Naturgy understands that energy is a right and, as an energy company, feels responsible to contribute to tackle energy poverty.

Traditionally, the causes of energy poverty are understood as low income, high energy prices and inefficient buildings. Nevertheless, the lack of education and knowledge on the energy use (efficiency and bills), which results in inefficient habits, also contributes to the problem. Naturgy's vulnerable energy plan focuses on these causes.

In Spain, Article 7 of the EED was transposed creating a system of obligations on energy suppliers. These obligations are fulfilled through the creation of the National Energy Efficiency Fund (FNEE) into which the obligated parties contribute with the amount designated by the ministry. The Institute for Diversification and Energy Savings (IDAE), which is attached to the Ministry for Ecological Transition, designs energy efficiency measures and plans to be funded through the National Energy Efficiency Fund and funds from other sources such as the European Regional Development Fund. Naturgy, as all obligated parties, fulfils its obligations under Article 7 by contributing to this fund. The activities within SocialWatt project are therefore designed in line with the organisation's own desire to alleviate energy poverty and its commitment to corporate social responsibility. They are over and above Naturgy's obligations under Article 7 of the EED.

Moreover, the Ministry is developing new legislation to regulate fulfilment of Article 7 for the 2022 – 2030 period. This new regulation could double the contribution from obligated parties and seems that not only the National Energy Fund but also Energy Efficiency Obligation Schemes (EEOS) would be mandatory for obligated parties. Naturgy is designing its' SocialWatt energy poverty action plan with many uncertainties regarding what schemes would be eligible for the EEOS.

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7.2 CONTEXT AND PREVIOUS ANALYSIS

Spain's national strategy against energy poverty (2019–2024)[18] defined energy poverty as:

> "the situation in which a household finds itself in which the basic needs of energy supplies can't be met, as a consequence of an insufficient income level and that, in this case, it can be aggravated by having energy inefficient housing."

Naturgy has customers that are identified as energy poor either because they are recipients of the social tariff or because they have been identified by social services. There are other energy-poor customers but they are not yet identified for various reasons.

Naturgy Group tested and used the main energy poverty indicators from the SocialWatt Analyser tool to identify the customers that are not yet detected as energy poor. As discussed in the report on the energy poverty analysis,[19] the results were not entirely reliable for all indicators because the household income data used was not accurate enough and also because, in many cases, Naturgy isn't the only supplier of the customer.

For all the reasons explained above and on the aforementioned report, the actions undertaken in this action plan will target customers eligible for the social tariff or identified as energy poor by social services or NGOs.

Naturgy's plan will start with the following actions:

- Energy advice: Sending a communication to 45,000 energy-poor customers already identified as beneficiaries of the social electricity tariff (but for whom it is about to expire). Naturgy will communicate (by email or letter) efficient consumption habits and remind customers that their social tariff is going to expire and that they can reapply to renew it. The communication will inform them about the different channels available to renew access to the tariff and offer the possibility of having a volunteer employee to accompany them in their efforts and advise them. The advice is offered by corporate volunteers and includes the identification of intervention needs in their home such as insulation and fabric efficiency measures or low-cost renovation measures such as low-energy lighting. Volunteers report internally on the needs detected in a home. Naturgy Foundation and Naturgy Iberia proceed to assess this need through an installation and maintenance company and carry out the intervention. Naturgy Iberia has many contracts with installation and maintenance companies that provide service in the maintenance of gas and light installations, appliances, etc to Naturgy customers. This network will be used to help energy poor customers.
- Videos: Campaign consisting of training energy poor customers and other vulnerable people that are not customers and are Social Services or Third sector entities' users through three or four short videos aimed at improving people's

[18] National strategy against energy poverty. https://www.energypoverty.eu/publication/national-strategy-against-energy-poverty-2019-2024

[19] Sunderland, L. et al. (2020). Evaluation of schemes to tackle energy poverty. SocialWatt. https://socialwatt.eu/library/publications

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consumption habits.

- Campaign to send brochures to vulnerable customers on the social tariff to raise awareness of efficient consumption habits.
- Courses to train professionals as energy advisors that afterwards may work in the local Administration or in social entities to help people in energy poverty to understand a bill, learn about aid for energy poverty and improve consumption habits.
- RES4ALL: Self-consumption will be promoted with installations of photovoltaic panels and reflective glass in various buildings for vulnerable people such as Sant Eloi and Casa Bloc and others that are buildings that house vulnerable people.
- EEKIT: Energy efficiency kits composed of low-cost items that will be adapted to the needs of each family or person in energy poverty.

Table 10: Summary of expected impact from behavioural measures in Spain

	Subtotal Behaviour (1 year)	Subtotal Behaviour (3 years)	Energy advice	Videos	Brochure in invoice	Energy advisor courses
Target number	345,090	345,180	45,000	150,000	150,000	90
Number of expected beneficiaries	10,800	14,400	1,800	4,500	900	3,600
Energy savings (GWh) in final energy consumption	6.24	19.01	1.61	2.36	0.47	1.89
Total investments (millions €)			0.013	0.030	0.009	0.094
CO_2 emissions savings (kt)	1.7	5.8	0.44	0.65	0.13	0.52

Table 11: Summary of expected impact from energy efficiency and renewable energy measures in Spain

	Subtotal EE/RES (1 year)	Subtotal EE/RES (10 years)	PV installations	Sant Eloi glass	Energy advice (retrofitting)	New energy efficiency kit
Target number			85	32	45,000	1,900
Number of expected beneficiaries	4,970		2,906	128	36	1,900
Energy savings (GWh) in final energy consumption	3.36	33.57		0,013	0.062	3.282

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	Subtotal EE/RES (1 year)	Subtotal EE/RES (10 years)	PV installations	Sant Eloi glass	Energy advice (retrofitting)	New energy efficiency kit
Energy production (GWh)	0.13	1.32	0.132			
Total investments triggered (millions €)	0.87		0.557	0.014	0.002	0.300
Direct investment	0.48		0.177	0.014	0.002	0.300
Investment mobilised	0.38		0.380			
CO_2 emissions savings (kt)	0.96	9.64	0.039	0.040	0.019	0.900

Table 12: Summary of impacts in Spain

	Subtotal Behaviour (3 years)	Subtotal EE/RES (10 years)	Total schemes
Total target beneficiaries			19,370
Energy savings (GWh) in final energy consumption	19.01	33.57	52.57
Energy production (GWh)		1.32	1.32
Total investments triggered (millions €)			0.87
Direct investment			0.49
Investment mobilised			0.38
CO_2 emissions savings (kt)	5.8	9.64	15

Table 13: Table of assumptions

General assumptions	
Annual average consumption power and gas (kWh/year) (Source: Eurostat)	10,500
Annual average consumption power (Source: Internal)	2,400
Weight of electricity in total annual energy consumption*	23%
Average installed power kW	4.4
Energy savings from training and non-personalised advice (Source: IDAE)	5%
Energy savings from energy advice scheme (kWh/yr) (Source: SocialWatt Grant Agreement)	895
Electricity CO_2 emission factor (t/MWh) (Source CoM, 2017)	0.297
Natural gas CO_2 emission factor (t/MWh) (Source CoM, 2017)	0.202

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General assumptions	
Weighted average of electricity and natural gas emission factor (t/MWh)	0.275
Weight of heating in total annual energy consumption (Source: IDAE)	47%

* As a percentage of consumption for customers who use gas and electricity

The energy savings that result from the energy advice action have been calculated as 895 kWh per household per year for the energy advice action. This is a higher saving than for other behavioural actions because of the nature of the personalised advice and follow up from volunteers which Naturgy Foundation consider will be more likely to lead to changes in behaviour. For the rest of the behavioural actions energy savings are calculated on an assumption of 5% savings (525kWh) of average final energy consumption of gas and electricity in Spain which is 10,500 kWh,[20] for each household taking action.

Energy savings for PV installations have been calculating taking into account that all energy production foreseen on the installation projects are energy savings.

Energy savings that result from the glass treatment in the Sant Eloi building, retrofits as a result of energy advice and energy efficiency kits are calculated as the 35% of the part of total energy use dedicated to heating, which is 47% according to the institute for the diversification and energy savings (IDAE).

7.3 SCHEME 1: ADVICE TO CUSTOMERS AND RETROFITTING MEASURES

7.3.1 OVERVIEW

This initiative consists of sending a communication to all customers whose social tariff is about to expire (around 2.000 people every month). These customers number around 45,000 in two years.

Customers will be reminded and informed of this situation and will be offered different channels to reapply for the social tariff.

The communication will remind them of ways to use energy more efficiently.

Finally, these customers can request a volunteer to accompany them in carrying out the necessary steps to request the social tariff or making changes to their bills. Volunteers will identify if there is any need for interventions in their houses, such as insulation and fabric efficiency measure and low cost renovation measures such a LED lighting. To do this, the volunteers will collect information on the type of energy used by the customer in the home, the electrical appliances used, the state of the electrical and gas installation and other elements in the home such as windows, insulation, etc. Based on the responses, the volunteer will assess the need to intervene.

The process is:

1. Naturgy generates the list of energy-poor customers and sends a letter or email.
2. Customers can use different channels to reapply for the social tariff and can ask for

[20] Eurostat

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a volunteer to help them.

3. Naturgy manages the request for a social tariff or other changes in bills.
4. Naturgy Foundation assigns a volunteer to a customer.
5. Volunteers receive three hours of training in technical and social aspects related to energy use. They come to understand the process of providing the advice, ways to start the conversation with customers and messages to convey, how to manage changes in customers contracts and bills etc. One of the added values of the action is that volunteers can make the changes customers need directly in the customer management system.
6. After the training, volunteers are ready to start calling the customers and give them advice. Usually the process needs a number of calls over a few days to be completed.

Naturgy has around 400 volunteers, this action will need 50 volunteers every month taking into account that everyone would advise three customers each. If customers ask for a volunteer, Naturgy will assign one who then will attend to the customer in a certain period of time, for example 1 month. She/he will contact them by telephone or WhatsApp. It is helpful for the volunteer to have the bill of the customer so they can share a copy of the bill through WhatsApp. This improves customer trust and helps the volunteer and customer to work together on it.

Naturgy assigns 12 hours to each employee so that they can carry out volunteering organised by the Naturgy Foundation. If they need more time, they will use their free time. During the phone call, volunteers review the bills and make suggestions to the customers and if they agree, they can ask internally a specific back office to implement the necessary changes in the customer contract. The advice is therefore not only centred around recommendations, but can help implement changes immediately in the contract.

Finally, volunteers should advise customers about good habits in energy consumption, so they should lead the conversation, asking questions and making suggestions on the more rational use of energy and how to save money through changing behaviours. Volunteers will complete a questionnaire with the customer to consider if there is a need for renovation in the dwelling. If this is the case they will inform Naturgy Foundation, which will assess this need and if necessary send a professional to make the specific renovations.

These professionals are from companies that have an agreement with Naturgy to carry out interventions at customer's home related to the maintenance of gas and power installations. The interventions can be: review of gas and electricity installations; changes of boilers and electrical appliances; changes of windows and glass; and ventilation, among others. The interventions have an average cost of €2,000.

Naturgy Foundation estimates that 2% out of the 5% of customers that will receive advice will as a result implement a renovation in their homes.

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7.3.2 SWOT ANALYSIS

	Strengths	Weaknesses
Internal	Information and regular communication with customers Experience in energy poverty schemes (energy advice, etc.) Regular dialogue with social services Volunteer corporate team Professionals that can implement the renovation	Distrust of vulnerable customers in the advice that comes from an energy company Operational capacity of volunteers is limited
	Opportunities	**Threats**
External	To engage customers with attractive offers and reduce energy debt To be a leader in the energy sector in terms of social commitment and in the fight against energy poverty To ease compliance with the regulatory framework	Schemes don't count under Article 7 of the EED, because in Spain this is done with contributions to the National Energy Efficiency Fund

7.3.3 PLANNING AND RESOURCES

Activity	Date	Departments involved
Communication campaign to engage volunteers	January 2022	Naturgy Foundation/ Naturgy Iberia
Volunteers training	January 2022	Naturgy Foundation/ Naturgy Iberia
Mail and email to customers	From January 2022, every month	Naturgy Iberia
Phone calls to customers	From February 2022, every month	Naturgy Foundation/ Naturgy Iberia

7.3.4 RISK ASSESSMENT

Description of risk	%	Consequences	Mitigation
Distrust of customers	60%	Unwillingness to engage with advice and follow the recommendations of volunteers	Sharing good practices among volunteers until they have the skills to better engage customers
Disappointment of	50%		Support the volunteer to

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Description of risk	%	Consequences	Mitigation
volunteers due to the distrust of customers			upskill

7.3.5 MONITORING AND EVALUATION

Main key performance indicators:

- Total number of customers reached
- Number of customers per volunteer
- Number of volunteers
- Savings per customer
- Energy savings
- CO_2 emissions savings
- Social tariff recovered
- Number of renovation measures

Naturgy has the baseline of every customer's energy use through the bill and with changes made in contracts Naturgy will calculate the bill saving impact in a theoretical way.

Success will be if a high percentage of customers (80%) save at least €200-300 per year on their bill as a result of tariff changes.

The savings have been calculated based on an average annual electricity consumption of 2,400 kWh. One kilowatt hour costs €0.13 in the free market and €0.06 during the cheapest hours. Customers also pay some charges based on the capacity of their power connections. Many customers have a higher capacity power connection than necessary for their level of use. Naturgy has estimated that most customers could reduce their connection capacity by 1kW. Savings can therefore derive from the reduction in power capacity, the adoption or recovery of the social tariff and more efficient consumption habits.

Table 14: Bill savings from Scheme 1 in Spain

Savings	€/year
Power reduction	45
Hourly consumption	84
Social tariff 25% / 40%	57 / 91
Efficient consumption	86

Naturgy estimates that 5% of customers will ask for advice and 80% of those that receive advice will make changes on their bill and will improve their habits. On the other hand, 2% of them will implement renovations in their homes.

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7.4 SCHEME 2: VIDEOS WITH TIPS ON ENERGY EFFICIENCY HABITS

7.4.1 OVERVIEW

The action consists of the creation of short and didactic videos with tips on energy efficiency habits. The objective of this action is the acquisition of efficient consumption habits by energy poor consumers. During the video, a question will be launched to be answered by consumers at the end, so that a control can be made of the number of people who have seen the video.

The videos will be emailed to Naturgy's customers on a social tariff, to users of social services of local administration and, finally, users of Cáritas Spain. Naturgy Foundation estimate a target audience of 150,000 (75,000 are customers with social tariff and email, 35,000 are customers marked as vulnerable because a social service has informed us and finally the rest would be users of Caritas and other local administration services and not necessarily Naturgy customers); video viewing rate of 10% is expected, so 15,000 people would be impacted by this action and 30% will incorporate efficient habits.

7.4.2 SWOT ANALYSIS

Internal	**Strengths**	**Weaknesses**
	Easy to implement and monitoring.	Energy poor people may use internet less than average
External	**Opportunities**	**Threats**
	Easy to replicate with NGO or Social services.	Schemes don't count under Article 7 of the EED, because in Spain this is done with contributions to the National Energy Efficiency Fund

7.4.3 PLANNING AND RESOURCES

Activity	Date	Departments involved
Design of videos	Q1 2022	Naturgy Foundation/ / Gas and Power
Recording	Q1 2022	Naturgy Foundation/ / Gas and Power
Choosing target	Q1 2022	Naturgy Foundation/ / Gas and Power
NGO and SS agreement	Q3 2021	Naturgy Foundation
Choosing target among NGO and SS	Q1 2022	Naturgy Foundation
Emailing and monitoring	Q2 2022	Naturgy Foundation

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7.4.4 RISK ASSESSMENT

Description of risk	%	Consequences	Mitigation
Risk of having less viewing rate than estimated	30%	Reaching fewer beneficiaries	Collaboration with NGOs and social services

7.4.5 MONITORING AND EVALUATION

Main key performance indicators:

- Total number of videos sent.
- Open email rate
- Viewing rate.
- Number of people that has answered the question.

An average annual consumption of gas and electricity of 10,500 kWh has been taken as a reference to calculate energy savings and it is estimated that this action can achieve a 5% of energy savings. It is extremely difficult to measure this type of action so Naturgy Foundation will use deemed approach to measure this action.

7.5 SCHEME 3: BROCHURES IN THE INVOICE

7.5.1 OVERVIEW

The action consists of inserting a brochure in the invoice with tips on energy efficiency habits. The target audience is customers with social tariff (150,000 people) and it will take two months to reach to all customers as this is the full cycle of invoicing. The estimated answer rate is 2% and 30% will incorporate efficient habits.

7.5.2 SWOT ANALYSIS

Internal	**Strengths**	**Weaknesses**
	Invoice is already a channel of communication with customers.	
External	**Opportunities**	**Threats**
	Customers with social tariffs haven't been targeted by campaigns for years so they would be more receptive.	Schemes don't count under Article 7 of the EED, because in Spain this is done with contributions to the National Energy Efficiency Fund

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7.5.3 PLANNING AND RESOURCES

Activity	Date	Departments involved
Design of brochure	Q1 2022	Naturgy Foundation/ Gas and Power
Mailing	Q2 2022	Naturgy Foundation/ / Gas and Power

7.5.4 RISK ASSESSMENT

Description of risk	%	Consequences	Mitigation
Risk of not having slot for the flier on the bill until 2023	10%	〉 Postposing the action	Negotiation with Gas&Power

7.5.5 MONITORING AND EVALUATION

Main key performance indicators:

- 〉 Total number of brochures sent.

As other actions, an average annual consumption of 10,500 kWh has been taken as a reference to calculate energy savings and it is estimated that this action can achieve a 5% reduction in consumption due to change of habits.

7.6 SCHEME 4: COURSES TO TRAIN ENERGY ADVISERS

7.6.1 OVERVIEW

Naturgy Foundation, in its networking activity, has detected the growing need for experts in energy poverty to work in local Administration and NGOs, who would have the role of energy advisers for the energy poor population, helping them to understand and optimise their bill, acquire efficiency habits energy and also, in some cases, assess the need for low-cost retrofitting.

For this reason, Naturgy Foundation has planned courses to train energy consultants that will usually last 30 hours; However, it will also have 100-hour courses to train people who are unemployed, with the courses providing an opportunity to get a job as energy consultants.

Naturgy Foundation is negotiating with Spanish government and Regional Administrations to have an official certificate for these courses.

Naturgy Foundation is planning to have 3 courses each year with 30 students that would be a total of 180 people over two years. Each one is estimated to be able to give energy advise to 50 people in a two year period, which is 9000 people who will benefit from this action and 80% of them would incorporate learnings, change habits and would make changes in their contract. In 2019, the Naturgy Foundation monitored 75 people who had attended training workshops organized by the Social Services of Vilanova i la Geltrú, which is a city near to Barcelona, and Naturgy Foundation. As a result of this study, Naturgy Foundation knows that when there is a follow-up of the people who attend the training sessions, 80% of them make

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improvements in their consumption habits and energy contracts. In the case of the courses that Naturgy Foundation proposes, the training will be aimed at professionals who are specializing in energy consulting and who will dedicate time and follow-up to these issues in their municipalities or NGOs.

7.6.2 SWOT ANALYSIS

Internal	**Strengths**	**Weaknesses**
	Naturgy Foundation has great knowledge and good network in the field of energy poverty, which gives us good intuition to diagnose the problem and the ability to establish partnerships. Naturgy Foundation has the energy expertise.	
External	**Opportunities**	**Threats**
	There is a need for energy advisers. Energy transition enhances this need Be a referent among other energetic companies	Schemes don't count under Article 7 of the EED, because in Spain this is done with contributions to the National Energy Efficiency Fund

7.6.3 PLANNING AND RESOURCES

Activity	Date	Departments involved
Design of the course	Q1 2021	Naturgy Foundation
Negotiation with governments	Since Q1 2021	Naturgy Foundation/
Implementing courses	Since Q1 2021	Naturgy Foundation/

7.6.4 RISK ASSESSMENT

Description of risk	%	Consequences	Mitigation
Risk of not having the official certificate	30%	〉 Lower engaging capacity	Negotiation
Not being able to know if finally they would work on energy advice	80%		

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7.6.5 MONITORING AND EVALUATION

Main key performance indicators:

- Number of courses.
- Number of students.

Satisfaction questionnaire. Naturgy Foundation will monitor the usefulness of the training asking for feed back to the attendees at the end of the course and one year later so Naturgy Foundation can know the number of people attended by each one and other qualitative information.

7.7 SCHEME 5: PHOTOVOLTAICS IN SOCIAL HOUSING BUILDING

7.7.1 OVERVIEW

The scheme consists of installing RES generation, especially photovoltaic (PV) panels in two different types of buildings related with vulnerable people. The first type are those residential buildings where vulnerable families are housed. Those houses could be own properties or belong either to a social entity or a public administration. The second type are buildings with other uses such as dining rooms, residences, training and development places and others where sometimes families have to share rooms because this is only possibility to live. In addition to the generation installation, improvements in the energy efficiency of the building are also usually included.

Sant Eloi is the first example. It is an apartment building with 32 social housing units in Barcelona. It is one of the first buildings in Spain that will have PV systems installed under the new regulation of shared self consumption and having vulnerable people as energy consumers. Alongside the installation of PV, individual smart meters are installed to measure consumption from the PV in each apartment. The electricity generated but not consumed in the building is fed into the grid and is sold to the distributor energy company. The energy company issues invoices for the energy consumed by each household, discounting the kWh from self-consumption, which is not charged. In summary, the bills could be lower in two ways: first, because part of the energy consumed will be free, and second, because the energy produced and not consumed that is sold to the grid will be discounted.

In addition, an innovative intervention will also be carried out in each house, namely the application of an insulating product on the glass of the windows. This product is a liquid that is applied to windows. When it dries, it becomes transparent and reduces heat transmittance in both winter and summer.

In addition, Naturgy Foundation will give energy advice to every household based on bills and energy habits.

The building is owned by the public administration and is managed by a social organisation that oversees its maintenance and social care of the families that live there. The social organisation provides social housing with the aim that all in society, especially the most vulnerable groups, have a decent home. It manages about 600 social housing units. Naturgy Foundation and the social organisation have had an agreement to collaborate on vulnerable home energy retrofits since 2018. For this scheme, both entities signed an

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agreement in which Naturgy Foundation will help with the technical aspects of the project, find the company to install the panels and pay for the entire installation and intervention on the window glass. The project requires an investment of €32,000.

This project is the first time that Naturgy Foundation has installed a renewable energy source to alleviate energy poverty by reducing bills. It is also one of the first PV projects in Spain in the dwellings of vulnerable people. Naturgy Foundation's intention is to continue undertaking PV installations.

For this action Naturgy Foundation has relied on a partner that usually works on housing renovation. This has been the easiest way to identify a building in which all households include vulnerable people. It also has the advantage that this entity has gained the trust of households and works to support them from a social point of view. This makes it easier to enter the homes to apply the product on the windows, and access bills to enable advice to be tailored to ensure savings from the PV panels and window product.

Naturgy also relies on the part of the company that has the technical knowledge and the relationship with suppliers to carry out such a project.

Casa Bloc is another residential building that houses 45 energy poor families in Barcelona. Naturgy foundation has already contributed with low cost retrofitting in 17 apartments and now is planning to install PV for the whole building. The building is owned by a regional administration that has handed its management to an NGO, Habitat 3, which is dedicated to promoting housing for vulnerable groups. The people who live in this building are on a rental basis and pay for their energy supply, so energy bills will be lower, as some of their energy needs will be covered by the ellectricity generated by the photovoltaics. Naturgy Foundation has already designed the project on this building and conversations have been held with the NGO. The only thing missing is an approval from the Heritage department of the owner of the building.

Naturgy Foundation has more projects planned and some of them are initiated and consist in buildings in different municipalities of Spain that have dwellings for vulnerable people in the same building. Naturgy Foundation is working with private NGOs on projects at different stages of implementation: a few of them Naturgy Foundation have already PV projects and Naturgy Foundation are starting the installation, one has the installations done and others are pre-installation.

Table 15: Summary of PV scheme impacts in Spain

	Total
Target	
Number of expected beneficiaries	4,574
Energy savings (GWh) (in final energy)	22.65
Energy production (GWh)	0.09
Total investments (millions)	0.867
CO_2 Emissions savings	34.23

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7.7.2 SWOT ANALYSIS

	Strengths	Weaknesses
Internal	Naturgy already has a relationship with many social organisations that work on housing issues with vulnerable people Naturgy Energy Group has the capacity and technical knowledge to carry out the project.	Communication with energy-poor people, so this will be carried out by the social housing partner These are expensive projects for NGOs and for vulnerable people. Decision process are costly in time.
	Opportunities	**Threats**
External	To be one of the first companies that carry out a renewable energy project for vulnerable customers To learn from the action so it can be replicated	Photovoltaics are still a new product in the market; installations are easily performed but connection with the grid is a problem and can take weeks or months. Subventions are never for 100% so vulnerable people do not accede to aids. With no aids vulnerable people cannot install res generation neither energy efficiency measures. New regulation is coming for white certificates so suppliers will not invest until the new regulation is on force.

7.7.3 PLANNING AND RESOURCES

Following is the planning for the implementation of Sant Eloi. The planning of the other buildings is on a similar basis and each one is at a different stage.

Activity	Date	Departments involved
Design of the project	November 2020	Naturgy Foundation/ Naturgy Iberia
Agreement with the social partner	November 2020	Naturgy Foundation/ Social partner
Agreement with the company providing the PV panels and the product for the windows	December 2020	PV panel company
Negotiations with the owner of the building	December 2020	Social partner/Naturgy Foundation/Naturgy Iberia
Getting the licence from public administration	December 2020	PV panel company
Information to energy-poor	January 2021	Social partner

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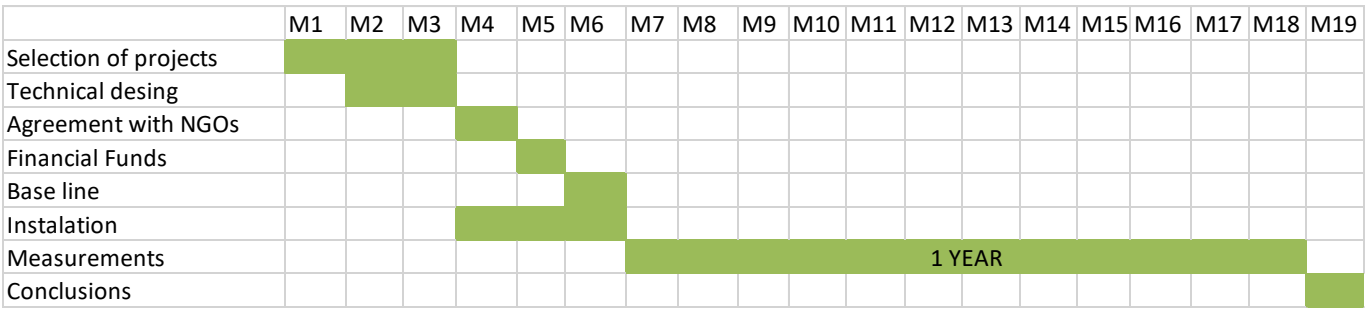
Activity	Date	Departments involved
people		
Getting the bills and surveys to have the baseline scenario to measure	January 2021	Social partner
Identify the baseline scenario	February 2021	Naturgy Foundation
Installation	January - February 2021	PV panel company
Customer agreements with energy company to sell energy not used	March 2021	Energy-poor people/energy company/social partner
Measurements	Until January 2022	Naturgy Foundation/ Naturgy Iberia
Assessment of new PV projects	2021-2022	

Figure 7: Timeline for PV projects in Spain



7.7.4 RISK ASSESSMENT

Description of risk	%	Consequences	Mitigation
Approval of the owner of the building	30% (already solved)	The non-implementation of the project	Negotiations with the participation of technicians from the social partner, Naturgy and the PV company

7.7.5 MONITORING AND EVALUATION

Main key performance indicators:

- Total savings per customer (€), distinguishing savings from the PV panels and from changes in contracts and changes in habits if possible
- Energy savings
- CO_2 emissions savings.

Naturgy has the baseline energy bill of every customer and from the answers of a survey

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carried out with customers at the beginning of the action. The future bill will give Naturgy the information needed to monitor the results of the scheme.

7.8 SCHEME 6: NEW KIT OF ENERGY EFFICIENCY

7.8.1 OVERVIEW

Naturgy Foundation will reach an agreement with a national social entity, possibly the Red Cross, so that it can deliver kits with low-cost measures that will serve to improve energy efficiency in the home. These pieces have not been yet decided. As an example, they could be: led bulbs, weather stripping, heating programmer thermostats, hourly timer for electric water heaters, etc. It is foreseen by Red Cross that 1900 kits can be delivered.

SWOT ANALYSIS

Internal	**Strengths**	**Weaknesses**
	Great relationship with National social entities	Loss of control of the action.
External	**Opportunities**	**Threats**
	Take advantage of the possibility of reaching so many people who have large social entities	Operational complexity. Not being able to customize properly Schemes don't count under Article 7 of the EED, because in Spain this is done with contributions to the National Energy Efficiency Fund

Although the action has certain threats, Naturgy Foundation trusts in the operational capacity of the social entity to be able to help many people

7.8.2 PLANNING AND RESOURCES

Activity	Date	Departments involved
NGO agreement	Q3 2021	Naturgy Foundation/ / Gas and Power
Kit delivery	2022-2023	Naturgy Foundation/ / Gas and Power

7.8.3 RISK ASSESSMENT

Description of risk	%	Consequences	Mitigation
Not being able to measure adequately due to loss of control of information	20%	Lack of information	establish control mechanisms

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7.8.4 MONITORING AND EVALUATION

Main key performance indicators:

- Total number of kits delivered

An average total annual consumption of 10,500 kWh has been taken as a reference to calculate energy savings. It is estimated that this action can achieve a reduction of 35% of the 47% of the overall energy consumption that is associated with heating.

7.9 INTERACTION BETWEEN SCHEMES IN THE ACTION PLAN

All the actions in the plan are conceived as pilots, so they will be measured and monitored and in case of assessing that they do not have the expected response or there is some circumstance that makes the action inappropriate, it will be changed to something else instead.

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