



POWERPOOR

Empowering Energy Poor Citizens through Joint Energy Initiatives

POWERPOOR – Greece’s policy roadmap to alleviate energy poverty (Part of D5.9)

Working on the ground with energy-poor households and policymakers on mitigating energy poverty levels.

July 2023

www.powerpoor.eu

Introduction

In the POWERPOOR project, partners are actively assessing the causes of energy poverty and suggest short-term and collective energy action solutions to mitigate this problem. A highly diverse network of Energy Supporters and Mentors has been trained and is being engaged to further support energy-poor households to implement solutions. The project also sets up Energy Poverty Mitigation Offices in engaged municipalities. POWERPOOR strives to trigger high-impact change, not only on the local and regional levels but also on the national and European levels. Such a multi-level governance approach will result in long-lasting impact and coordination between local needs and national (e.g., National Energy and Climate Plans) and supra-national enabling frameworks.

The aim of the national roadmaps is then to build on current project activities and to enable the application of the POWERPOOR approach to promote integrated energy poverty mitigation policies across all regions and cities within the pilot countries. This roadmap template is a synthesis exercise based on several outputs of the Work Packages and is to be used by project partners and Energy Supporters & Mentors during the last year of the project and beyond its lifetime (also possibly to be incorporated into future Horizon projects).

Next to the project national partners, stakeholders out of the network of Energy Supporters and Mentors, especially those at the National Liaison Groups, should be invited, to take ownership of the national roadmaps and take the process forward. This work will result in lessons-learned, which, in turn, generate policy recommendations on how the national regulatory / incentive framework should be adapted to mitigate energy poverty in the first place.

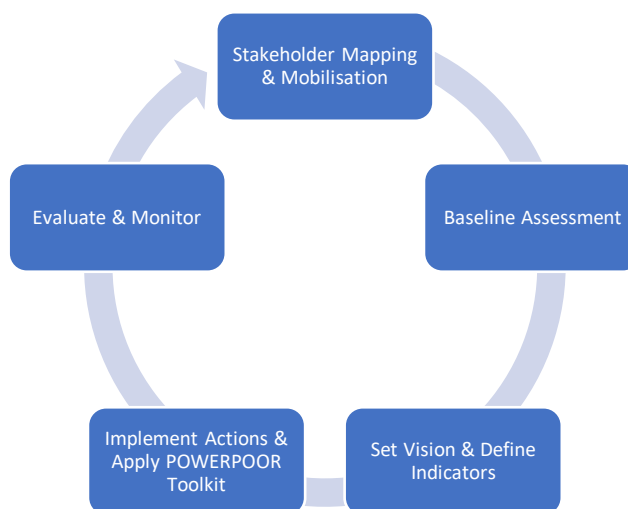
The key content defined in the national roadmaps will input the POWERPOOR exploitation plan as well as the POWERPOOR EU Policy Roadmap.

What is the methodology for the national roadmaps?

The development and adoption of the national roadmap is subdivided into two phases, which each encompasses specific steps on an integrated management cycle (adapted from ICLEI Green Climate Cities Programme). The cycle has been chosen as a basis for the roadmap since it promotes a comprehensive approach to policymaking.

Phase 1 takes place until the end of the POWERPOOR project and includes steps that shall be carried out by partners Energy Supporters and Mentors until then. Phase 2 takes place within one year after the project, or on any other timeline decided by the partners and stakeholders. Once the cycle has been completed the first time, the process can be repeated (and could potentially serve as a basis for future projects).

Figure 1 Roadmap Methodology



National Roadmap Development

Phase 1

The following three steps correspond to the activities carried out within the POWERPOOR project and rely strongly on the findings of Deliverable 4.2 “Baseline Assessment Report.” They will form the basis for the national roadmaps and for the subsequent steps of Phase 2.

Step 1: Stakeholder Mapping, Commitment & Mobilisation

As part of D4.1, project partners have carried out an initial assessment of stakeholders who are also part of the National Liaison Groups, have created an overview of the expectations the different stakeholders have towards the project as well as their influence and level of expertise. As part of the road mapping process, it becomes important to identify the relative importance of particular stakeholder groups vis-a-vis energy poverty mitigation and to identify how flexible stakeholders are to adapt their everyday (business) practices and what kind of networks exist between them. The stakeholder universe methodology, as presented in Module 4 lends itself well for this.

Below, the POWERPOOR stakeholders’ universe is depicted, having energy poverty mitigation at the core of the system while the horizontal axis (x) accounts for the interest or affinity for the project, meaning that the closer to energy poverty mitigation a stakeholder is depicted, the higher their affinity is. The vertical axis (y) accounts for the

adaptability of the stakeholders regarding energy poverty mitigation and represents the likelihood of a stakeholder to change their mind regarding the phenomenon throughout the process. The bigger the node is displayed, the stronger the impact and influence of the stakeholder group to energy poverty phenomenon and, of course, to the objectives of the project.

Following the analysis of the target groups/stakeholders, the following conclusions have been noted:

Local Authorities are considered to have significant interest in the energy poverty domain and its mitigation and consequently in the project but still low adaptability due to the recent realisation that the phenomenon directly affects them.

Regional Authorities are considered to have low to medium interest and adaptability to energy poverty as the phenomenon is not yet high on their agendas.

National Authorities have relatively high interest and adaptability, the phenomenon is presented in various public documents and following the EU directives, strategies, and guidelines, they have the obligation to adopt, adapt and integrate actions into the national framework.

SMEs have a low interest in energy poverty though they rapidly adopt market trends, aiming to cover market needs with their products or services.

ESCOs have high adaptability to the demands of society at the time to provide their services. Their interest in the energy poverty phenomenon though is considered low. The energy poverty domain is of high interest to both **Technical Universities** and **Academia** as is a potential field in their curriculums and study topics, but also academic bodies are quick to adapt to the new realities of society, and energy poverty is one of the subjects that universities have been working on in recent years.

Civil Society organisations have increased interest in energy poverty. At the same time, the organisations are also adaptable as it is much quicker to recognise the needs of citizens and the market.

Energy Communities are important stakeholders as are fundamentally linked to energy poverty mitigation. Hence energy communities are depicted right on the vertical axis, indicating their high interest in the mitigation of the phenomenon but also higher from the horizontal axis reflecting this way their medium to high adaptability.

Financial Institutions have medium to low interest and adaptability to energy poverty as they are not directly connected to the phenomenon's mitigation.

Energy providers have a medium interest in the energy poverty domain but relatively low adaptability.

There are many links between the different stakeholder groups depicting relationships between stakeholders, as one group feeds the other with information, resources, etc.

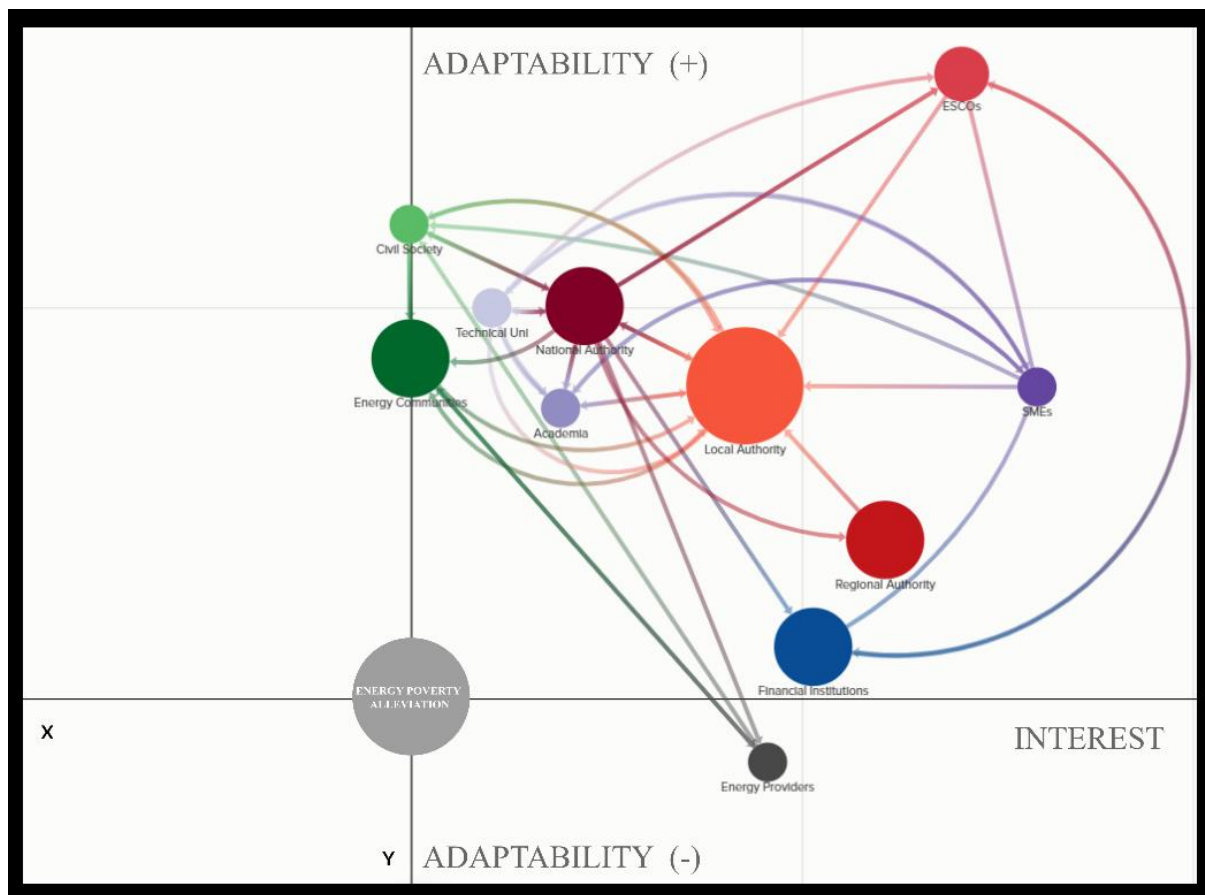
National authorities feed the ESCOs regarding new policies and measures, then the ESCOs are reshaping their services and feed local authorities. National authorities also

feed into regional authorities and the latter feed into local authorities. The local authorities feed back into the national, indicating a direct connection between these bodies. Technical Universities and Academia feed the national authorities and contribute with their feedback to the shaping of new policies. The flow of resources, impact, and knowledge is two-way while also there is a two-way connection and collaboration between Academia and Technical Universities. ESCOs receive information and resources from Technical Universities, national authorities, and SMEs and they feed into local authorities. Local authorities are directly connected with almost all stakeholder groups, receiving various resources, and feeding back into civil society, national authorities, energy communities, and Academia. SMEs have a two-way connection with Academia and Technical Universities while SMEs are feeding into ESCOs, civil society and local authorities. There is a two-way exchange of resources between local authorities and energy communities while energy communities are also affected and connected with the stakeholder groups of civil society, national authorities, and energy providers.

Energy providers are receiving information in the form of measures and policies from the national authorities and are feeding back into civil society while there is a two-way linkage with the energy communities. Financial institutions are feeding into ESCOs, and SMEs and they are receiving information and resources from national Authorities and ESCOs.

The stakeholder universe exercise was initially prepared by NTUA and INZEB. The outputs were extensively discussed with the members of the Stakeholder Liaison Group, including the participation of the third partner from Greece SUST, during the third meeting that was held in Greece on November 18th, 2022.

Figure 2 Greece Stakeholder Universe



Step 2: Baseline Assessment

The state of play/baseline for what concerns energy poverty Greece has already been analysed at the beginning of the project and captured in D4.2. As part of the roadmap process, the baseline parameters were re-assessed and re-evaluated to capture changes that have occurred since the last baseline assessment. The baseline assessment has been presented during the 3rd Stakeholder Liaison Group meeting and discussed with the members to agree on the final content.

Table 1 Greece Baseline Assessment Revision

<p>National Energy and Climate Plan (NECP)</p>	<p>The goal of addressing energy poverty is stated in the Greek NECP as part of the clean energy and energy efficiency axes of action to be promoted. More specifically, according to NECP the national target for energy poverty is the reduction of at least 50% of the relevant energy poverty indicators by 2025 and 75% by 2030, compared to 2016 levels. In addition,</p>
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	<p>the national goals should aim to be well below of the EU average. The NECP was published in December 2019.</p>
<p>National Energy Poverty Action Plan (NEPAP)</p>	<p>The NEPAP includes both the definition of households affected by energy poverty through specific quantitative criteria, as well as the development of a specialised process for monitoring and evaluating the process of mitigation until the year 2030. It foresees 16 actions under three dimensions: a) customers' protection, b) increase of energy efficiency and renewables, c) information and education. The NEPAP builds on the energy poverty reduction targets set at the NECP. NEPAP (v0.6) was published in August 2021</p>
<p>The building sector - renovation efforts</p>	<ol style="list-style-type: none"> 1. The Long-Term Renovation Strategy (LTRS) accompanies NECP and places special emphasis on the energy retrofitting of the Greek building stock (residential and commercial buildings, public sector buildings), facilitating the cost-effective conversion of existing buildings into buildings with almost zero energy consumption. The third edition of the National LTRS (2021) has been submitted to the European Commission. «Convert the building stock to carbon-free and highly energy efficient by 2050» 2. Legalisation fine deduction for energy efficiency/structural interventions that have been completed until July 2011. Expenses made to increase the energy efficiency or structural resilience of these buildings can be discounted from the fine to be paid up to the percentage of 50%. 3. The "Saving 2021" programme is a residential energy upgrade programme, which provides incentives for energy saving interventions aiming to improve the energy class of residences by at least three (3) categories. The investment includes distinct incentives to support poor and vulnerable households in the form of an increased grant rate and a separate budget of €100 million.
<p>Social care</p>	<ol style="list-style-type: none"> 1. A Heating Allowance is given to consumers who are using heating oil, gas, or biomass to aid with heating

	<p>expenses and compensate for the increase in fuel prices over the last few years.</p> <p>2. Minimum Guaranteed Income/Social Solidarity income is a monthly welfare allowance to act as a safety net for vulnerable households to tackle the effects of poverty and avoid social exclusion. It combines (a) Income aid, (b) access to complementary social services, benefits, and goods, and (c) social tariff for electricity, water supply, and municipal costs.</p> <p>3. Housing Allowance is a welfare rent subsidy programme for households renting their main residence. It provides financial aid to cover (partially) the cost of rent for vulnerable households as an effective social protection system for the first home.</p>
Policy to promote community-ownership of energy	<p>Law 4513/2018 defines the Energy Communities (ECs) as civil cooperatives exclusively active in the energy sector with the aim of promoting social and solidarity-based economy and innovation in the energy sector, addressing energy poverty, and promoting energy sustainability, production, storage, self-consumption, distribution, and energy supply, enhancing energy self-sufficiency/security in island municipalities as well as improving energy efficiency in end-use at a local and regional level. Municipalities and Regions that plan to support energy vulnerable households through energy communities' schemes, will be supported through various funds. The current Law has not been updated since its formation while the Renewable Energy Directive Recast (RED II) has not yet transposed to the national law.</p>
Policy to promote (collective) finance/crowdfunding	<p>Law 4920/2022 incorporated the Directive 2020/1504 into the Greek legal framework and adapted the national legislation to EU Regulation 2020/1503, regarding the framework of crowdfunding services for businesses. In particular, the crowdfunding regulatory framework has been updated to remove barriers to cross-border crowdfunding within the EU. It also regulated the issue of the operating license of crowdfunding service providers to avoid the need of multiple licenses within the EU.</p>

The energy market (e.g., social tariffs/tax incentives)

Social household tariff: Vulnerable households which fall under certain categories regarding their income, property value and health conditions are entitled to discounted electricity charges and other additional benefits.

Tax deduction for renovation costs: This is a financial incentive available to citizens (not only homeowners) who perform building renovation works, including energy efficiency interventions. 40% of the cost of the works is discounted from the annual income tax for a period of 4 years.

Energy efficiency obligation schemes (Law 4342/2015 of the Greek Parliament): within the energy efficiency obligation scheme fuel and energy service providers, electricity suppliers etc. are obliged to use their own capital to meet national energy efficiency targets while consumers are safeguarded and not burdened with added costs. The provisions for addressing energy poverty include a premium for energy savings as a result carrying out technical and/or behavioural measures in energy vulnerable households (coefficient of 1.4). Modifications are expected with the aim of improving both the operation and the efficiency of the scheme and especially motivating obligated actors to embark on more technical interventions.

Social Care Tariff: Tariff Applicable to public legal entities and NGO that provide social care services and is provided by all electricity suppliers.

Power Pass: The Electricity allowance (Power pass) subsidises the electricity bills to consumers with variable tariffs for the year 2022. Its amount and the beneficiaries are determined by social and economic criteria.

Recycle-replace appliances: Subsidy for replacement of old and energy-intensive electrical appliances is provided to citizens to replace old and energy-consuming electrical appliances with new, more efficient ones. The programme covers the replacement of air conditions, refrigerators and freezers, and the subsidy is higher for low-income households.

Electricity subsidy: Horizontal electricity subsidy is provided to all electricity consumers through the "Energy Transition

	<p>Fund" to support the low-voltage electricity consumption bills. It is applied to all consumers without exception, regardless of income or other property criteria (households, businesses, businesses, etc.). The amount of the subsidy per MWh varies according to the consumer's tariff, while it is higher for the energy poor.</p> <p>Gas subsidy: horizontal gas subsidies are provided to all gas consumers (households and businesses) to support them against the skyrocketing gas prices. The subsidy is applied to all consumers without exception, regardless of income or other property criteria and it is foreseen to cover the 50% of the last year increases. The amount of the subsidy per MWh varies according to the consumer's tariff.</p> <p>Biomass grant: provision of free biomass (firewood) for the residents of mountainous areas. The actions will be organized either as a community or individually, under the supervision of the relevant forestry authorities, in order to cover the needs for the winter period.</p>
Consumer protection	<p>Special protective measures are provided (by all electricity and gas suppliers) to enable vulnerable energy consumers to access the full benefits of the liberalised energy market, which may not be otherwise available due to issues such as energy affordability. The definition of energy vulnerable people has also been introduced in the Greek national legal framework (Law 4001/2011). These measures consist of a deadline of forty days for the payment of electricity bills, the possibility for partial and interest-free payment of the electricity bills, suspension of the supplier's capability to order the disabling of the electricity meter (electricity cut off) due to outstanding debts during the winter period (November to March) and the summer period (July and August) as well as stricter conditions for the termination of the electricity supply contract by the supplier. As per the gas safety net, this has been enhanced to prohibit interruption of supply due to debts for consumers suffering from serious health problems, the advance payment for the inclusion of vulnerable customers in a settlement of overdue debts is</p>

	abolished and the number of instalments for settlements is reduced.
SECAPs	<p>Out of the total 332 Greek municipalities, 230 are signatories in the Covenant of Mayors initiative. Only a part of these signatories (83) have declared commitments for energy poverty mitigation on the CoM platform (identifying their SECAP was not easy for the most of them). However, only a few municipalities have actively promoted energy poverty mitigation actions. The Greek partners of the C-track50 H2020 project (EPU-NTUA, EPTA) have supported the development of Decarbonisation plans to 2050, for 11 Greek Municipalities (Aliartos, Varis-Voulas-Vouliagmenis, Chalkideon, Elliniko-Argiroupoli, Eretria, Faistou, Farsala, Ilioiupolis, Loutraki, Pylou-Nestoros, Vrilissia) that replaced their previous SE(C)Aps, and have included a strategy and relevant actions for combating energy poverty. The energy poverty mitigation actions proposed in C-TRACK 50 Decarbonisation plans are under three categories:</p> <ul style="list-style-type: none"> • Training and educational activities: awareness-raising campaigns, workshops for students, establishment of energy poverty municipal offices, and more. • Energy efficiency measures: classification of domestic energy efficiency measures, use of EPC schemes, collective renovations (blocks, neighbourhoods). • Use of renewables: Net-metering projects, RES energy communities, energy contracts. <p>POWERPOOR Greek partners have supported municipalities to promote energy poverty mitigation actions. Four of them (Municipality of Kalamata, Municipality of Tripoli, Municipality of Domokos, Municipality of Aigialeia) have already introduced the energy poverty pillar in their SECAPs with actions such as creation of an energy poverty mitigation office, awareness campaigns, and creation of an online platform. Two more municipalities (Municipality of Souli, and Municipality of Messini) have established an energy poverty mitigation office and have launched public awareness campaigns.</p>
Public awareness	Provision of targeted awareness-raising and training activities , both for the energy-poor households, and the

	<p>professionals who will be involved in supporting vulnerable households. The activities include information regarding the practices of facilitating the repayment of energy products, the existing protection measures, the availability of financing, etc.</p> <p>The Price Comparison Tool for energy products, provided by the Greek Regulatory Energy Authority, is an open platform for comparing prices and terms of tariffs offered by electricity and natural gas providers. In addition, it is possible to form complaints and requests to Network Operators and Electricity and Gas Service Providers, with monitoring of the progress of the request.</p>
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The Greek Government and the Ministry of Environment and Energy have announced several actions for 2022 and 2023, that can have a positive impact on the mitigation of energy poverty. The actions are:

- The **Save and Renovate** programme for 20,000 young people with subsidies of up to 30,000 euros to renovate their homes with energy saving interventions to be included.
- A **renovation subsidy** of 10,000 euros to 10,000 owners of closed properties with the aim of being provided for renting purposes.
- **Rewards in tariffs** for those households that reduce their electricity consumption.
- Extra space on the electricity grid for small RES projects, specifically for self-producers and energy communities or small investments.
- **Subsidies for 250,000 new rooftop PV units** for citizens (households), businesses, and rural uses.
- **New social housings buildings** to provide up to 2,000 new homes.

Step 3: Set Vision, envision Actions, and define Indicators

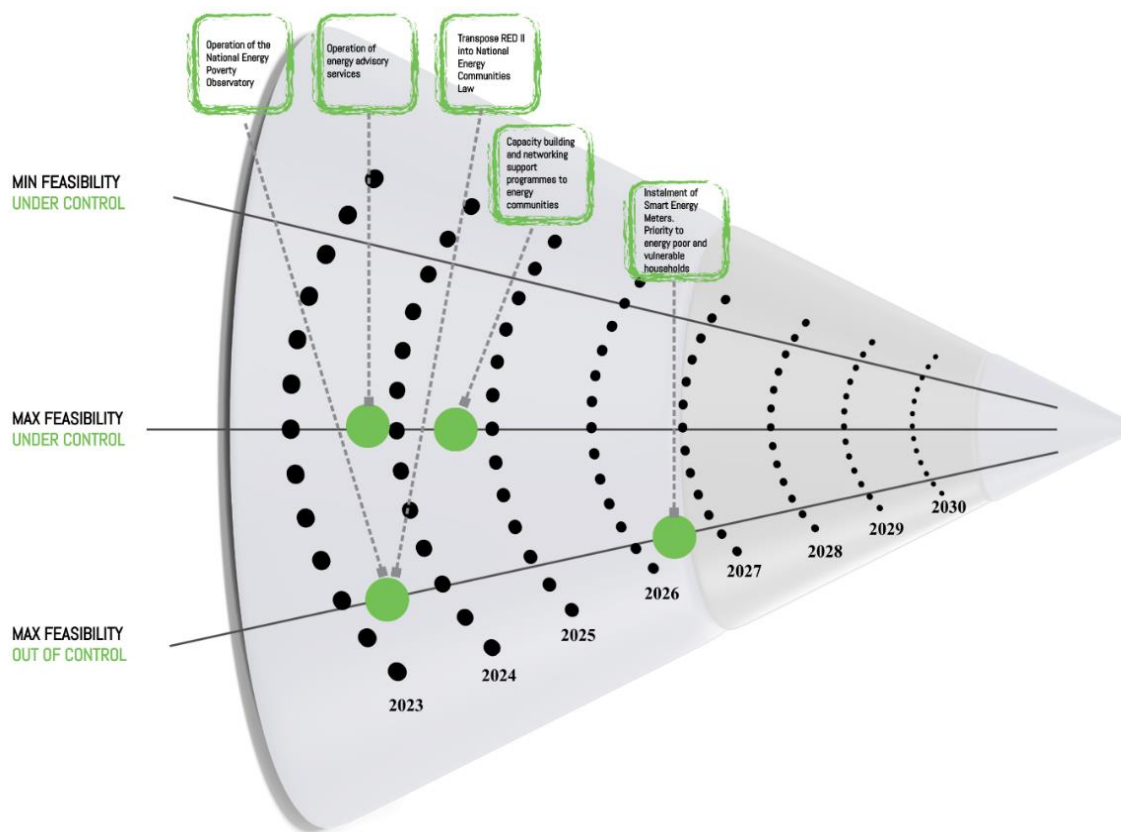
During the meeting with the national Stakeholder Liaison Group, the members were informed that 23 actions have been identified and will be presented, evaluated, and discussed during the meeting. The evaluation process was based on two axes, a) the impact that the proposed actions can have on the national energy poverty mitigation target, and b) the effort needed for each one of them to become operational and publicly available. Prior to the proposed actions' impact and effort evaluation, an overview of the POWERPOOR developments was presented as those have been captured during the 2-

year project operation, also recalling the objectives of the project, according to which the POWERPOOR project aims to address energy poverty.

The meeting continued with a presentation of the national policies assessed and how those are directly or indirectly linked to the phenomenon of energy poverty and under which the 23 proposed actions were prepared. The members of the SLG evaluated the national policies, and their views were considered during the formulation of the final version of the national roadmap. The national roadmap developed under the POWERPOOR project considers the State's policies, utilising the tools and mechanisms that already exist, aiming to achieve optimum results. Through the vis.me tool, SLG members were asked to categorise the impact and the effort needed for the proposed actions using the "low," "medium" and "high" options.

The below figures present the needed changes to mitigate energy poverty in Greece under the scope and evaluation of feasibility and control, while presents the impact and the effort needed for the proposed policy actions to be realised.

Figure 3 Greece Future Radar



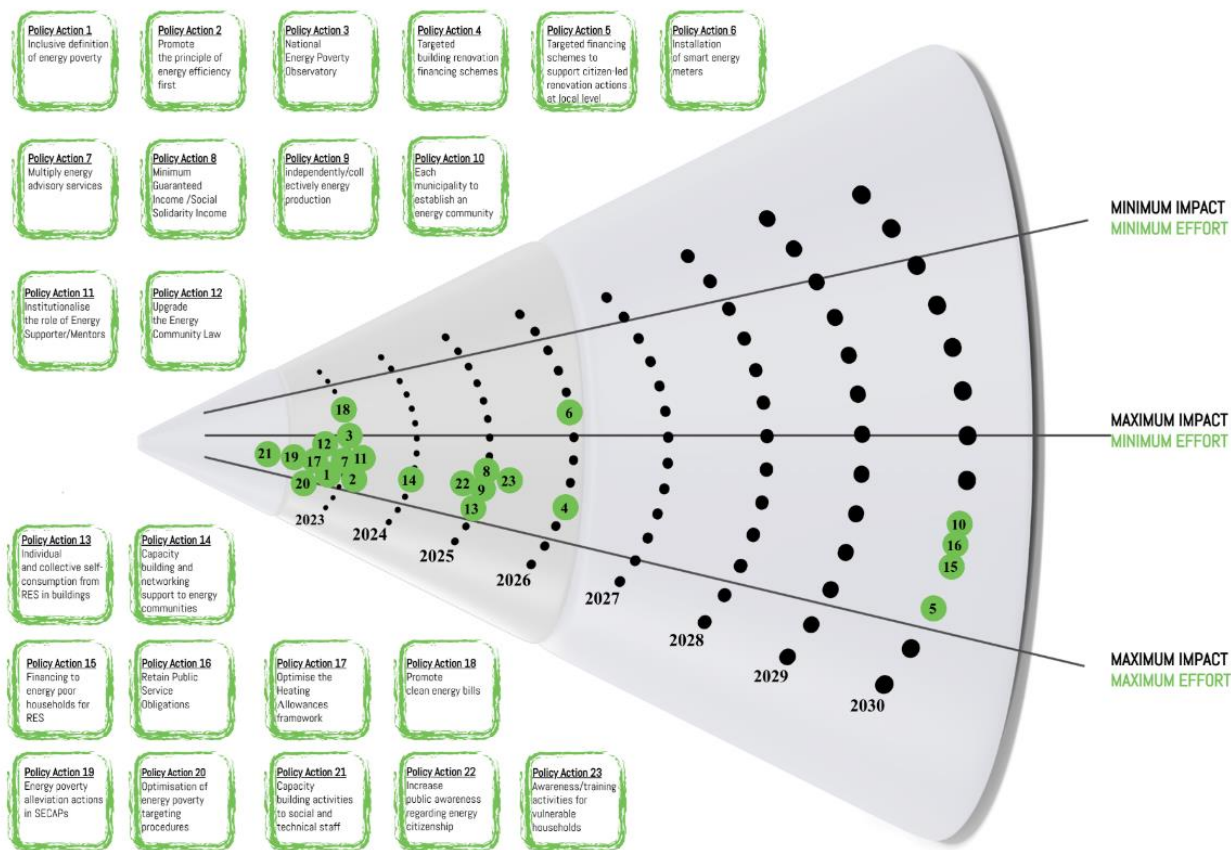


Table 2 Greece Actions

Policy Sector	Actions to be implemented	By when?	By whom?
National Energy and Climate Plans (NECPs)	Agree on an inclusive definition of energy poverty, in alignment with EU energy strategy and initiatives (Green Deal, REPowerEU, Renovation Wave, EPAH), as well as aligned with the Greek National Energy Poverty Plan (NEPAP)	2023	Ministry of Environment and Energy , Ministry of Health, Ministry of Labour and Social Affairs and Ministry of Finance. Consultation is needed with the NGOs, civil society organisation, and citizen-led actors.

	Promote the principle of energy saving/energy efficiency first (behavioural changes , building retrofits) in energy planning to minimise the need for energy use. In addition, to consider the EPBD revision (Minimum Energy Performance Standards - MEPS, Smart Readiness Indicator - SRI, Building Renovation Passports – BRPs etc.)	2023	Ministry of Environment and Energy in consultation with stakeholders as CRES, the Technical Chamber, and other organisations working in the energy efficiency field.
	Redesign, define and endorse the role of the National Energy Poverty Observatory	2023	Ministry of Environment and Energy , Ministry of Health, Ministry of Labour and Social Affairs, with the engagement and collaboration of various civil society organisations, NGOs, Think Tanks etc.
The building sector - renovation efforts	Targeted building renovation financing schemes (Saving at Home) to support the upfront costs for building renovation of energy poor households. Essential elements include: <ul style="list-style-type: none"> Enhanced social criteria and regional criteria (e.g., for lignite regions) 	2023-2030	Ministry of Environment and Energy , Ministry of Finance in consultation and collaboration of CRES, the Technical Chamber, and other

	<ul style="list-style-type: none"> • Complementarity with the Energy Efficiency Obligation Scheme to maximise the impact of the actions • Provisions for fair distribution of incentives and benefits between owners and tenants 		organisations working in the energy efficiency field.
	Provision of targeted financing schemes to support citizen-led renovation actions at local level.	2023-2026 phase A' 2026–2030 phase B'	Ministry of Environment and Energy , Ministry of Finance, in collaboration with local/regional authorities, financing institutions, and energy communities
	Installation of smart energy meters and promotion of new digital technologies that can be used in assisting energy poor households to manage and optimise their energy needs	2026	Ministry of Environment and Energy , DSO, and electricity providers
Social care	Multiply energy advisory services, such as energy poverty mitigation offices and one-stop shops, given priority at local level (Municipalities, established energy communities, NGOs)	2023	Local governments , energy communities, NGOs (e.g., consumer associations, environmental organisations)

	<p>Connect the Minimum Guaranteed Income /Social Solidarity Income with the Energy Poverty Mitigation Framework. In parallel, prioritise pilot implementation of the Universal Basic Income (UBI) in areas of high-energy poverty rates to gradually phase-out Social Solidarity Income.</p>	<p>2023-2026 pilot phase of UBI 2026-2030 scale-up of UBI pilots and gradual phase-out of Social Solidarity Income policy</p>	<p>Ministry of Labour and Social Affairs, Ministry of Finance, For the UBI pilots: Local and Regional authorities in consultation with academia</p>
	<p>Self-production (independently/collectively) of a minimum amount of energy for all and ensure the supply (ban of disconnections) of the basic energy demand for the transition period.</p>	<p>2023</p>	<p>Ministry of Environment and Energy Ministries of Finance/Health. The action should be in consultation with Academia, NGOs, local governments, energy providers, energy communities, chambers</p>
<p>Policy to promote community-ownership of energy</p>	<p>Each municipality to establish an energy community. The action should also foresee energy poverty mitigation at the local level.</p>	<p>2025 - 2030</p>	<p>Local governments with the support of the National Government and the collaboration of local associations/NGOs, civil society organisations and other local schemes.</p>

	Institutionalise the role of Energy Supporter/Mentors and establish an Energy Supporter/Mentor network.	2023	POWERPOOR Alliance , National Energy Poverty Observatory, NGOs, Academia, and civil society organisations
	Upgrade the Energy Community Law to become aligned with RED II. The Law should also include incentives for the energy communities' development based on their potential for greater social impact (e.g., prioritisation in connection to the grid or/and targeted financing support for energy communities aiming to alleviate energy poverty, increase social cohesion, and support the delignification.	2023	Ministry of Environment and Energy , energy communities, civil society organisations, NGOs, Think Tanks.
	Enhance individual and collective self-consumption from RES in buildings. Key-policy measures: <ul style="list-style-type: none"> • Integration of RES CSC schemes in the national framework in line with RED II, REPowerEU • Enhance the virtual net metering framework to allow energy sharing between the properties of the same owner • Provide incentives on PV installation works e.g., lower VAT, tax-deduction, 	2025	Ministry of Environment and Energy in consultation with civil society organisations, NGOs, energy communities

	possibility to sell the excess energy to the grid/aggregator/energy communities		
Policy to promote collective finance/ crowdfunding	Provision of capacity building and networking support to energy communities that would enable them to advocate and secure appropriate support mechanisms.	2024	Energy Communities , civil society organisations, Think Tanks, NGOs
	Provide financing to energy poor households to participate in collective/community energy actions (renewable energy production, saving schemes, increase of energy efficiency, building renovations etc.).	2023-2030	Ministry of Energy and Environment , Ministry of Finance, Local/Regional authorities
The energy market (e.g., social tariffs/ tax incentives)	Subsidise rooftop PV installation and energy communities' membership of beneficiaries of the Social Residential Tariff through the Public Service Obligations levy.	Until all interconnections are concluded* *Anticipated by 2030	Regulatory authority , TSO (ADMIE), Ministry of Environment and Energy, local governments
Consumer protection	Optimise the heating allowances framework: a) restructure the policy to promote decarbonisation of the building sector and increase the energy efficiency with small interventions related, b) support for the coordination authority in the sectors of capacity building,	2023	Ministry of Finance Ministry of Environment and Energy

	technical assistance, and relevant tools' development.		
	Promote clean energy bills	2023	Ministry of Environment and Energy , Energy Regulatory Authority
SECAPs	Institutionalise the multi-level governance approach on designing energy poverty mitigation actions in SECAPs.	2023	Local authorities , regional departments, national authorities, relevant Ministries
	Optimisation of the targeting procedures (tools, set of indicators, methodologies etc.) to successfully identify the energy poor households and focused groups affected (immigrants, disabled, elderly etc.).	2023	Local authorities , National Energy Poverty Observatory, civil society organisations, NGOs
	Provide capacity building activities to social and technical staff of the local authorities for energy poverty diagnosis and mitigation.	2023	Ministry of Environment and Energy , Regional and local governments, associations, educational institutions, NGOs
Public awareness	Increase public awareness regarding energy citizenship via national awareness campaigns, local energy poverty mitigation offices	2023	National Energy Poverty Observatory , local authorities, civil society

	that customise the campaign to local context and an online tool that would help citizens and interested parts to access informative material.		organisations, NGOs, energy poverty mitigation offices, one stop shops
	Enhance the awareness/training activities to vulnerable households by the energy sector companies, under the Energy Efficiency Obligation Scheme	2025	Energy providers, local authorities

Table 3 Greece Action-Specific indicators

Indicator	Baseline (2022)	Target (date dependent on the action)
Operation of the National Energy Poverty Observatory	Inactive	2023
Instalment of Smart Energy Meters with priority to energy-poor and vulnerable households	Insignificant (pilot cases applied in 2014)	2026 120,000 energy-poor households have smart meters installed
Operation of energy advisory services (POWERPOOR Energy Poverty Mitigation Offices)	3	2023 increased no of Energy Poverty Mitigation Offices by 50%
Transpose RED II into National Energy Communities Law	n/a	2023
Capacity building and networking support programmes to energy communities	5	2024 Increased by 100%

Phase 2

Step 4: Implement Actions and apply POWERPOOR Toolkit

The concrete actions that have been defined previously, are presented according to the established/proposed timeline.

Table 4 Greece Action Elements

<p>Action under the policy sector: National Energy and Climate Plans (NECPs)</p> <p>Agree on an inclusive definition of energy poverty, in alignment with EU energy strategy and initiatives (Green Deal, REPowerEU, Renovation Wave, EPAH), as well as aligned with the Greek National Energy Poverty Plan (NEPAP).</p>	
<p>The responsible entities (leading organisation is presented in bold)</p>	<p>Ministry of Environment and Energy Ministry of Health, Ministry of Labour and Social Affairs and Ministry of Finance and the National Energy Poverty Observatory. Consultation is needed with NGOs, civil society organisation, and citizen-led actors.</p>
<p>The target group for the action</p>	<p>All country citizens. Considering the energy crisis and the energy vulnerability, all citizens at any point can be energy poor, thus having a national definition this can support the design of actions and support programmes.</p>
<p>Action design</p>	<p>The leading organisation in collaboration and consultation with the other identified stakeholders should work together and conclude to a national definition based on the available indicators that are presented in the NEPAP and the available ones published by EPAH.</p>
<p>Scheduling</p>	<p>2023</p>
<p>Budget</p>	<p>0</p>
<p>Drivers</p>	<p>To support the citizens of the country, to secure them from entering the energy</p>

	poverty door and to design proper support schemes based on the actual needs of the citizens, especially the vulnerable ones.
Barriers	Fragmented administration at Ministry level.
<p>Action under the policy sector: National Energy and Climate Plans (NECPs)</p> <p>Promote the principle of energy saving/energy efficiency first (behavioural changes , building retrofits) in energy planning to minimise the need for energy use. In addition, to consider the EPBD revision (Minimum Energy Performance Standards - MEPS, Smart Readiness Indicator - SRI, Building Renovation Passports - BRPs etc.)</p>	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy in consultation with stakeholders as the Centre for Renewable Energy Sources and Savings (CRES), the Technical Chamber, and other organisations working in the energy efficiency field.
The target group for the action	The primary target group of this action is the building owners while the tenants, those who rent/lease properties, are the secondary target group. This is because it is unusual in Greece tenants who lease/rent properties to proceed with building interventions. The action concerns both public and private buildings.
Action design	Several improvements have been monitored in the national framework when it comes to buildings, though the road is still long. Buildings are core energy users while the national building stock is considered of inferior quality. The stakeholders, with the leadership of the Ministry of Environment and Energy should work together in enhancing the national building frameworks and codes

	to result in an efficient building stock with minimum energy requirements. A high energy efficient building stock minimises the energy poverty risk.
Scheduling	2023
Budget	150,000 euros The proposed budget will be used for the necessary studies to build the national SRI, MEPS, BRPs studies and roadmaps to be integrated in the existing national strategies.
Drivers	The country has ambitious plans regarding the building stock and its energy efficiency, thus this can act as a driver for the action.
Barriers	The continuous energy crisis and the insecurity leave no proper time for the design and implementation of the action, despite the fact that the action launch can solve many energy issues.
Action under the policy sector: National Energy and Climate Plans (NECPs) Redesign, define and endorse the role of the National Energy Poverty Observatory	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy , Ministry of Health, Ministry of Labour and Social Affairs with the engagement and collaboration of various civil society organisations, NGOs, Think Tanks etc.
The target group for the action	One target group is the various public organisations and their decision makers while the second target group is the general public. The first one will benefit from the operation of the Observatory as monitoring the phenomenon of energy poverty and the results produced will lead

	to better decisions for support programmes and other actions. At the same time, the general public will benefit from the decisions made by the first target group.
Action design	The National Energy Poverty Observatory exists since 2014 but sadly, following the completion of the Operational programme "Digital Convergence 2007-2013" which included it, the National Energy Poverty Observatory's database has not been updated making the initiative appear inactive. Since the infrastructure and the operational model and knowledge exists, it only needs a decision to re-operate, with more advanced services now. The current energy situation and the increased energy poverty level constitute a perfect timing for the Observatory re-launch. Considering the energy urgencies, the action requires a collective approach with more stakeholders being activated and engaged. The Energy Poverty Mitigation Offices developed under the POWERPOOR project can also have a role in this action as can operate as satellites of the Observatory.
Scheduling	2023
Budget	20,000 euros The budget is for the launch of the Observatory and for operational expenses
Drivers	To tackle energy poverty and reach the goals set under the NECP, a monitoring and evaluation system for energy poverty indicators is needed which can be organised under the Observatory.

Barriers	There are no barriers identified for this action, especially since the knowledge and previous experience exists.
<p>Action under the policy sector: The building sector - renovation efforts</p> <p>Targeted building renovation financing schemes (Saving at Home) to support the upfront costs for building renovation of energy poor households. Essential elements include:</p> <ul style="list-style-type: none"> • Enhanced social criteria and regional criteria (e.g., for lignite regions). • Complementarity with the Energy Efficiency Obligation Scheme to maximise the impact of the actions. • Provisions for fair distribution of incentives and benefits between owners and tenants. 	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy , Ministry of Finance in consultation and collaboration of CRES, the Technical Chamber, and other organisations working in the energy efficiency field.
The target group for the action	120,000 energy poor households
Action design	This action is aligned with a similar action presented in the NEPAP targeting the renovation of 120,000 households facing the negative effects of energy poverty. The action aims to address energy poverty in the long term by improving the energy efficiency status of residential buildings of households affected by this phenomenon. In order to achieve the maximum of this action, the buildings' energy renovation should be combined with other actions and measure as the installation of renewable energy systems to cover the energy needs. The proposed action which targets vulnerable households and households facing energy poverty should and can be combined with the implementation of

	other building renovation and RES programmes.
Scheduling	2023-2030
Budget	1,800,000,000 euros For the budget calculation, it was estimated that an average energy renovation cost for a medium size house (70-90 m2) is 15,000 euros.
Drivers	This is a direct action for the relief of energy poor and vulnerable households. The energy poverty mitigation target set at the NECP is the main driver of the action.
Barriers	The main barriers are (a) the fund sources to implement the action, and (b) the identification of the actual beneficiaries for this action in order the impact to be at its maximum.
Action under the policy sector: The building sector - renovation efforts Provision of targeted financing schemes to support citizen-led renovation actions at local level.	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy, Ministry of Finance, in collaboration with local/regional authorities, financing institutions, and energy communities.
The target group for the action	50 energy communities
Action design	The action proposes the launch of incentives (financial, administrative etc.) for energy communities to integrate ESCO type services in their business models in order those to be applied in either in their members or the community in general, prioritising the energy poor and vulnerable households.
Scheduling	2023-2026 phase A' 2026-2030 phase B'

Budget	n/a
Drivers	Enhance the role of energy communities
Barriers	Conflict of interest between registered ESCOs and energy communities that potentially can provide similar services.
<p>Action under the policy sector: The building sector - renovation efforts</p> <p>Installation of smart energy meters and promotion of new digital technologies that can be used in assisting energy poor households to manage and optimise their energy needs</p>	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy , DSO, and electricity providers.
The target group for the action	All citizens but the starting point of the action should be the energy poor and most vulnerable households.
Action design	Smart meters are the best way to monitor the energy consumption and educate the consumer in energy use. The action should set the starting point from the households that are under energy poverty and those households considered more vulnerable to energy insecurities. The action should be applied then to all households. The Energy Supporters and Mentors trained under the POWERPOOR project can be considered for this action, having already performed house visits and understand the needs of the households while the Energy Poverty Mitigation Offices established under the POWERPOOR project can also provide information and guide the entities responsible for the action about the households needs at local level.
Scheduling	2026
Budget	~1,000,000,000 euros

	The national government and the DSO have already acted to this direction. According to the announcements 7,5 to 8 million smart meters are needed to cover the country's needs.
Drivers	To better monitor the energy use in households, resulting to households' education in proper and efficient energy use.
Barriers	Negative opinion for smart meter and unwillingness of households to install them due to various factors.
<p>Action under the policy sector: Social Care</p> <p>Multiply energy advisory services, such as energy poverty mitigation offices and one-stop shops, given priority at local level (Municipalities, established energy communities, NGOs).</p>	
The responsible entities (leading organisation is presented in bold)	Local governments , energy communities, NGOs (e.g., consumer associations, environmental organisations)
The target group for the action	The primary target group is the energy poor and vulnerable households while all citizens can benefit from the action.
Action design	This action is connected directly to citizens supporting them to identify, organise and implement solutions to alleviate energy poverty and secure them from energy insecurities. The action can build upon the already established Energy Poverty Mitigation Offices designed and organised under the POWERPOOR project also taking advantage of the POWERPOOR ICT Tools to identify the energy poor or the at energy risk citizens. The established Network of Energy Supporters and Mentors can be mobilised and supporting the action. Due to the

	direct connection to citizens, Municipalities should have a significant role in providing energy advisory services, ideally with the collaboration of other local actors such as energy communities, local associations, and civil society organisation. The advisory services can be provided physically, organised in a central location within the premises of the municipality, or digitally through a dedicated website for energy poverty mitigation and with support of a hot line while will answer to citizens' questions.
Scheduling	2023
Budget	~30,000 euros annually for each municipality that will launch energy advisory services.
Drivers	Support energy poor and vulnerable households mitigate energy poverty.
Barriers	Limited capacity of municipalities in terms of knowledge, personnel, and funds to implement the action.
Action under the policy sector: Social Care Connect the Minimum Guaranteed Income /Social Solidarity Income with the Energy Poverty Mitigation Framework. In parallel, prioritise pilot implementation of the Universal Basic Income (UBI) in areas of high-energy poverty rates to gradually phase-out Social Solidarity Income.	
The responsible entities (leading organisation is presented in bold)	Ministry of Labour and Social Affairs, Ministry of Finance For the UBI pilots: Local and regional authorities in consultation with academia
The target group for the action	All households eligible for the Social Solidarity Income (around 200.000 households across Greece). The starting point of the UBI pilot actions

	<p>should be the energy poor and most vulnerable households, those living in areas of estimated high-energy poverty rates or at greater risk (e.g., lignite regions dependent on lignite-district heating systems).</p>
<p>Action design</p>	<p>The Minimum Guaranteed Income is a welfare programme provided to vulnerable households (income, property, and residence criteria) to tackle the consequences of poverty and avoid social exclusion. It is based on three pillars: a) income support, b) linkage with social inclusion services, and c) linkage with activation services aimed at the integration or reintegration of beneficiaries into the labour market and social reintegration. An additional linkage to local energy poverty mitigation offices and relevant local actors (e.g., energy communities, consumers associations, NGOs) is proposed in order to enhance the capacity of the beneficiaries on energy savings, rational use of energy and self-production of clean energy poverty.</p> <p>As per the second dimension of the action, the UBI is defined as an income support which can be given through the public sector (e.g., local/regional governments) to all citizens, regardless of their means of subsistence and patterns of behaviour, and which is individual, adequate, tax-free, and unconditional. This is a relatively new economic and social proposal, already being piloted in several parts of the world. The pilot implementation of UBI is currently debated in Greece. Integrating energy</p>

	poverty mitigation in the UBI pilots can be pursued by means of selection of the geographical regions based on energy poverty rates estimations, through targeted informational campaigns and the convergence of the POWERPOOR approach and utilisation of POWERPOOR tools given the fact that local authorities will implement UBI locally.
Scheduling	2023-2026 UBI pilots and evaluation results of its impact on energy poverty mitigation at the local level 2026-2030 Scale up of UBI pilots to other areas and gradual phase-out of Social Solidarity Income.
Budget	n/a UBI proponents claim its financing is feasible, as it is expected to replace existing benefits
Drivers	To enhance income security and maximise the impact of targeted informational campaign on energy conservation, clean energy production and energy citizenship. In addition, time and resources will be saved from current bureaucratic social services' processes since the UBI will be provided unconditionally.
Barriers	The current barriers that were identified by representatives of local authorities in Greece were the perception of lack of financing resources, a false " <i>free money</i> " <i>perception</i> and barriers in the horizontal, nationwide implementation.
Action under the policy sector: Social Care	

Self-production (independently/collectively) of a minimum amount of energy for all and ensure the supply (ban of disconnections) of the basic energy demand for the transition period.

<p>The responsible entities (leading organisation is presented in bold)</p>	<p>Ministry of Environment and Energy, Ministries of Finance and Health. The action should be in consultation with Academia, NGOs, local governments, energy providers, energy communities, chambers.</p>
<p>The target group for the action</p>	<p>120,000 energy poor households. The action can then be expanded to more households.</p>
<p>Action design</p>	<p>This action is connected with the energy independency of the households and their empowerment to exit the energy poverty loop. The action should be designed alongside the energy renovation programmes while a prerequisite could be that the household should have implemented first energy upgrades for the energy needs to be covered by the self-production be the minimum ones. The action foresees initially a subsidy scheme of up to 60% of a 10kW PV roof top cost for 120,000 energy poor households, the same ones foreseen in the action “Targeted building renovation financing schemes (Saving at Home) to support the upfront costs for building renovation of energy poor households”.</p> <p>The national government has announced (Nov. 2022) a subsidy programme for the application of roof PV systems with a capacity of 10kW for each household with the provision to be subsidised up to 60%. Despite the good will, the process will follow the “first come, first served”</p>

	method, thus it is not guaranteed that the priority will be given to ones in need.
Scheduling	2023
Budget	720,000,000 euros (for the 120,000) The calculation results from the assumption that a 10kW PV roof system costs ~10,000 euros. In the occasion the cost is subsidised 60%, then the foreseen budget can cover the target of 120,000 energy poor households.
Drivers	This action will ensure that the energy poor households will never again face energy disconnection or limited energy services due to low income. In addition, the energy independency resulting from the combination of energy renovation and self-production saves money in the long-term from the national budget that is directed to support energy and vulnerable households to cover various needs (various subsidies and offerings).
Barriers	Limited financial capacity of the households to support the implementation of the action with the rest of the budget.
Action under the policy sector: Promote community-ownership of energy Each municipality to establish an energy community. The action should also foresee energy poverty mitigation at local level.	
The responsible entities (leading organisation is presented in bold)	Local governments with the support of the National Government and the collaboration of local associations/NGOs, civil society organisations and other local schemes.
The target group for the action	Municipalities

Action design	<p>According to the EU Solar Strategy (2022), each municipality with more than 10,000 citizens should establish an energy community to cover its own needs and also offer energy to vulnerable and energy poor households. In order the target to be implement the municipalities need to be educated and trained both in terms of how to establish an energy community and in terms to identify the energy poor households in order the feasibility plan for the energy community to be reliable and operational. The lead is in the hands to municipal officers as the action is local, while collaboration with civil society organisations and NGOs is important to achieve the maximum of the action. POWERPOOR results, services and tools can support the main actors of this action as the ICT driven tools can support the identification of the energy poor households and, in addition, the training programmes developed under the programme can support the actor understand how to establish an energy community. The action targets 230 municipalities with more than 10,000 citizens according to 2021 census, out of the 332 that exist.</p>
Scheduling	2025 - 2030
Budget	<p>11,500,000 - 23,000,000 euros</p> <p>The budget concerns a financial support of 50,000 - 100,000 euros to each municipality (230 municipalities with more than 10,000 citizens) depending on their size and energy community model. The rest of the budget needed for the establishment of an energy community</p>

	will be raised through a fund raising campaign and other available sources.
Drivers	To make municipalities more independent in terms of energy needs and to enable them to provide for a more sustainable and innovative social policy to their citizens
Barriers	Lack of interest from the side of municipalities to organise an energy community due to numerous factors, limited knowledge, limited capacity, and limited resources.
<p>Action under the policy sector: Promote community-ownership of energy</p> <p>Institutionalise the role of Energy Supporter/Mentors and establish an Energy Supporter/Mentor network.</p>	
The responsible entities (leading organisation is presented in bold)	POWERPOOR Alliance , National Energy Poverty Observatory, NGOs, Academia, and civil society organisations.
The target group for the action	Already certified Energy Supporters and Mentors and all interested individuals or groups willing to become Energy Supporters and Mentors.
Action design	The policy action aims to create a wide Network of persons that under the POWERPOOR training programmes and certifications will be created. The Network of Energy Supporters and Mentors will support various actions presented in this document, while the main beneficiaries of this action will be (a) the municipalities willing to organise energy advisory services and (b) the citizens that will benefit from the services offered under this action. The POWERPOOR Alliance will lead this action and in collaboration with other actors (local, regional, and national) will work towards the institutionalisation

	of the role of the Energy Supporters and Mentors.
Scheduling	2023
Budget	50,000 euros The budget will be used for awareness campaign, information workshops and other networking activities.
Drivers	Increase the capacity of Municipalities in providing support to the citizens.
Barriers	Lack of interest of the target group(s) to support this action, including the lack of interest of Municipalities to include such services in their structure.
<p>Action under the policy sector: Promote community-ownership of energy</p> <p>Upgrade the Energy Community Law to become aligned with RED II. The Law should also include incentives for the energy communities' development based on their potential for greater social impact (e.g., prioritisation in connection to the grid or/and targeted financing support for energy communities aiming to alleviate energy poverty, increase social cohesion, and support the delignification.</p>	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy , energy communities, civil society organisations, NGOs, Think Tanks.
The target group for the action	Group of citizens, authorities, SMEs interested in establishing an energy community.
Action design	The Ministry should act in completing the upgrade of the Law. Other actors should push the government in completing the process the soonest possible.
Scheduling	2023
Budget	0

Drivers	Provide more support to the groups interested in establishing an energy community.
Barriers	As this action is straight forward, there are no specific barriers for not concluding this action in the proposed timeframe.
<p>Action under the policy sector: Promote community-ownership of energy</p> <p>Enhance individual and collective self-consumption from RES in buildings. Key-policy measures:</p> <ul style="list-style-type: none"> • Integration of RES schemes in the national framework in line with RED II, REPowerEU. • Enhance the virtual net metering framework to allow energy sharing between the properties of the same owner. • Provide incentives on PV installation works e.g., lower VAT, tax-deduction, possibility to sell the excess energy to the grid/aggregator/energy communities. 	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy in consultation with civil society organisations, NGOs, energy communities.
The target group for the action	All households
Action design	The action focuses on the advancement of the legal framework and the inclusion of key policy measures to support and achieve a maximum outreach of self-production/consumption. To achieve this, consultations with various actors and stakeholders are needed in order to present a cost-effective and sustainable model that will benefit all parties, including the relevant ministries.
Scheduling	2025
Budget	n/a
Drivers	Promote self-production that leads to a more sustainable way of living.

Barriers	Negative opinions from energy providers.
<p>Action under the policy sector: Promote collective finance/ crowdfunding</p> <p>Provision of capacity building and networking support to energy communities that would enable them to advocate and secure appropriate support mechanisms.</p>	
The responsible entities (leading organisation is presented in bold)	Energy Communities , civil society organisations, Think Tanks, NGOs
The target group for the action	Energy communities
Action design	This action is dedicated to energy communities that will support newly formed energy communities or under establishment energy communities to increase their capacity in advocating for assorted reasons including the design of support mechanisms. The action is straight forward, the capacity building will be provided by energy communities with experience though webinars, workshops, events.
Scheduling	2024
Budget	20,000 euros
Drivers	Energy communities are among the main tools to tackle energy poverty.
Barriers	No barriers have been identified. Some similar actions have been already implemented (webinars) as initiatives from well-established energy communities.
<p>Action under the policy sector: Promote collective finance/ crowdfunding</p> <p>Provide financing to energy poor households to participate in collective/community energy actions (renewable energy production, saving schemes, increase of energy efficiency, building renovations etc.).</p>	

The responsible entities (leading organisation is presented in bold)	Ministry of Energy and Environment , Ministry of Finance, Local/Regional authorities
The target group for the action	50,000 energy poor households
Action design	The action aims at the design of a financing model (subsidy or interest free loan) for energy poor households in order to raise the initial capital needed to participate in collective/community energy actions.
Scheduling	2023-2030
Budget	250,000,000 euros Considering an initial of 5,000 euros per energy poor household.
Drivers	Economic boost to energy poor households to tackle energy poverty.
Barriers	Low interest of households to participate in collective actions.
Action under the policy sector: Energy market (e.g., social tariffs/ tax incentives) Subsidise rooftop PV installation and energy communities' membership of beneficiaries of the Social Residential Tariff through the Public Service Obligations levy.	
The responsible entities (leading organisation is presented in bold)	Regulatory Authority , TSO (HEDNO), Ministry of Environment and Energy, local governments
The target group for the action	~340.000 vulnerable households, beneficiaries of the Social Residential Tariff (islanders residing in the non-interconnected islands, low-income households, multi-children's families, single-parent families, elderly, citizens facing serious health problems).
Action design	The Public Service Obligation (PSO) is a levy that was laid down in EU Directive

	<p>2009/72/EC with the aim to finance projects that ensure energy security and environmental protection. In Greece PSO is used to ensure that electricity is supplied at a price significantly lower compared to current tariffs for certain groups of citizens (<i>see description of target group for the action above</i>). The levy is financed by the rest of the consumers and is collected through the electricity bills, by all suppliers. As interconnections of islands to the mainland grid progress, the need to finance the provision of discounts to the islanders will be reduced and surpluses will be present in the PSO fund. The proposed action suggests that the abovementioned surpluses be used to support the energy independence of beneficiaries of the Social Residential Tariff, by subsidising rooftop PV installation and energy communities' membership targeting this specific group. Given the energy crisis, alternative means of financing the PSO levy should be explored in order to relief consumers that are currently burdened with the cost of this social policy through the already exorbitant electricity bills.</p>
Scheduling	<p>Until all interconnections are concluded* *Anticipated by 2030</p>
Budget	<p>45,000,000 euros yearly The budget is based on a study/report made by Greenpeace.</p>
Drivers	<p>Enhanced consumer protection and reduction of the permanent need to boost household income.</p>

Barriers	Overburden of consumers that currently finance the PSO levy through the electricity bills.
<p>Action under the policy sector: Consumer protection</p> <p>Optimise the Heating allowances framework: a) restructure the policy to promote decarbonisation of the building sector and increase the energy efficiency with small interventions related, b) support the coordination authority in the sectors of capacity building, technical assistance, and relevant tools' development.</p>	
The responsible entities (leading organisation is presented in bold)	Ministry of Finance Ministry of Environment and Energy
The target group for the action	Low to medium-income households residing in single and multi-family buildings) with a focus on those located in colder areas/climate zones of the country. (For the period 2022-2023 beneficiaries of the heating allowance are estimated to be 1.3 million households)
Action design	A heating allowance is granted to single, married, cohabiting, or widowed persons to aid with their annual heating costs (fuel heating oil, lighting oil (blue kerosene), natural gas, LPG firewood, biomass, (pellets) or thermal energy through district heating). Income and property value criteria apply. The amount corresponding to each household is calculated based on meteorological and geographical parameters and ranges from €100 to €1600 for 2022. The aim of this policy is to help vulnerable households cope with heating costs and compensate for price increases in fuel which have been observed in recent years. The proposed action suggests that the abovementioned allowance be used to support the energy upgrade of

	beneficiaries of the heating allowance, by subsidising energy efficiency measures and rooftop PV installation.
Scheduling	2023
Budget	Equal to the annual budget for the existing heating allowance. For the period 2022-2023, this amounts to 300 million euros which will be shared by approximately 1.3 million households.
Drivers	More efficient distribution of funds to support long-term mitigation of energy poverty instead of perpetuating annual allowance. Economic boost to energy-poor households to tackle energy poverty.
Barriers	Legal and administrative barriers for eligible buildings and owners, similar to those of the energy efficiency scheme. Split incentives between rented and owned houses.
Action under the policy sector: Consumer protection	
Promote clean energy bills.	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy, Energy Regulatory Authority
The target group for the action	All households
Action design	The action aims at the reconstruction of energy bills in such a way that will include only energy consumption-related costs, excluding additional charges that are not connected with energy.
Scheduling	2023
Budget	n/a
Drivers	Support consumers with clean and transparent energy bills

Barriers	The unwillingness of authorities to exclude additional costs and non-related tariffs from the energy bills.
Action under the policy sector: SECAPs	
Institutionalise the multi-level governance approach on designing energy poverty mitigation actions in SECAPs.	
The responsible entities (leading organisation is presented in bold)	Local authorities , regional departments, national authorities, relevant Ministries
The target group for the action	All citizens
Action design	The actors and stakeholders that are involved in the design and implementation of the SECAPs should agree that energy poverty mitigation actions should by default be included in the design or updates of SECAPs.
Scheduling	2023
Budget	n/a
Drivers	Municipalities taking the lead to support energy poverty mitigation.
Barriers	Low capacity (knowledge and technical) of the staff of the municipalities
Action under the policy sector: SECAPs	
Optimisation of the targeting procedures (tools, set of indicators, methodologies etc.) to successfully identify the energy poor households and focused groups affected (immigrants, disabled, elderly etc.) including the optimisation of the data gathering procedures that needed for the targeting, to ensure validity.	
The responsible entities (leading organisation is presented in bold)	Local authorities , National Energy Poverty Observatory, civil society organisations, NGOs
The target group for the action	Energy poor and vulnerable households
Action design	The municipalities should use the indicators developed by EPAH and the Covenant of Mayors and set their strategy to targeting energy poor and vulnerable

	households. This will help to better design energy poverty mitigation actions in SECAPs. The ICT Tools developed under the POWERPOOR project are useful tools to support the targeting process.
Scheduling	2023
Budget	n/a
Drivers	Actual identification of energy poor and vulnerable households
Barriers	Unwillingness of local authorities' due low capacity and knowlegde for the domain of energy poverty.
<p>Action under the policy sector: SECAPs</p> <p>Provide capacity building activities to social and technical staff of the local authorities for energy poverty diagnosis and mitigation.</p>	
The responsible entities (leading organisation is presented in bold)	Ministry of Environment and Energy , Regional and local governments, associations, educational institutions, NGOs
The target group for the action	Local authorities (all 332 municipalities)
Action design	The central government in collaboration with the regional and local authorities and with the support should agree on the delivery of capacity building/training programme targeting the technical and social staff of the municipality to work towards the energy poverty diagnosis and mitigation. The action should be organised and delivered with organisations working on the domain of energy poverty mitigation. The capacity building programmes developed under the POWERPOOR project can set the basis for this activity.
Scheduling	2023

Budget	1,000,000 euros ~3.000 euros for each capacity building and support programme for the total of 332 municipalities. The budget can be reduced if the programmes will be organised in cluster municipalities (neighbourhood municipalities)
Drivers	Increase the capacity of the technical and social staff of the municipalities to address the phenomenon.
Barriers	Low interest and limited available time of the technical and social staff to participate in such actions. Low interest of the local authorities to engage in such programmes.
<p>Action under the policy sector: Public awareness</p> <p>Increase public awareness regarding energy citizenship via national awareness campaigns, local energy poverty mitigation offices that customise the campaign to local context and an online tool that would help citizens and interested parts to access informative material.</p>	
The responsible entities (leading organisation is presented in bold)	National Energy Poverty Observatory , local authorities, civil society organisations, NGOs, energy poverty mitigation offices, one stop shops.
The target group for the action	All citizens
Action design	All related stakeholders should work together in order to increase citizen's awareness on the energy poverty domain. National, regional, and local campaigns need to be designed and implemented while with the support and collaboration of local authorities, information days should be organised to educate citizens and provide them with tools and

	knowledge on how to deal with the phenomenon and how can be protected.
Scheduling	2023
Budget	~1,000,000 euros ~3,000 euros for the organisation of information days and information material for each one of the 332 municipalities.
Drivers	Empowering citizens
Barriers	Lack of public interest to implement such actions.
<p>Action under the policy sector: Public awareness</p> <p>Enhance the awareness/training activities to vulnerable households by the energy sector companies, under the Energy Efficiency Obligation Scheme</p>	
The responsible entities (leading organisation is presented in bold)	Energy providers, local authorities
The target group for the action	All citizens with priority to energy poor and vulnerable citizens.
Action design	Under the Energy Efficiency Obligation Scheme (active since 2017), the energy providers should collaborate with local authorities in order empower citizens through awareness/training activities. The awareness/training activities can be organised in more than one municipality for the economy of scale.
Scheduling	2025
Budget	n/a
Drivers	Citizens' empowerment
Barriers	Lack of interest to implement this action from both sides (energy providers and municipalities).

The POWERPOOR toolkit is incremental to the implementation of the individual actions and should be used actively by whichever stakeholder (e.g., municipality or POWERPOOR partner) has been identified, in the previous steps, as being responsible for implementation.

Figure 4 POWERPOOR Toolkit



Step 5: Monitor & Evaluate

One year after completion of the POWERPOOR project (or any other timeframe decided upon during the stakeholder consultations), the first monitoring & evaluation process should take place to see whether the roadmap's actions, and its vision, are being met. The exact indicators to be reviewed will depend on which ones have been chosen in Step 2.

Table 5 Greece Action-Specific Indicators

Indicator	Baseline (2022)	Target (date dependent on action)	Target achieved?
Operation of the National Energy Poverty Observatory	Inactive	2023	
Installation of Smart Energy Meters with priority to energy poor and vulnerable households	Insignificant (pilot cases applied in 2014)	2026 120,000 energy poor households have smart meters installed	

Operation of energy advisory services (POWERPOOR Energy Poverty Mitigation Offices)	3	2023 increased no of Energy Poverty Mitigation Offices by 50%	
Transpose RED II into National Energy Communities Law	n/a	2023	
Capacity building and networking support programmes to energy communities	5	2024 Increased by 100%	
Indicator	Baseline (2022)	Target (date dependent actions)	

This table tracks the progress of general energy poverty indicators leaning on the categorisation provided by EPAH.

Table 6 Greece General Energy Poverty Indicators

Indicator	Baseline (2022)	Target and Date (Vision)	Target achieved? YES/NO
Inability to keep home adequately warm % population	17% (2020 ELSTAT)	2025 10%	
High share of energy expenditure in income % Population	15% (2020 ELSTAT)	2025 10%	
Arrears on utility bills % of population	28% (2020 ELSTAT)	2025 18%	

Recommendations on how to implement the national roadmap

The above process will have resulted in a national roadmap which has been co-created with a diverse group of stakeholders from the POWERPOOR National Stakeholder

Liaison Groups. Following the national policy dialogues and consultations, partners will reflect on the roadmap drafting process and can suggest additional recommendations to specific stakeholder groups on HOW the above-listed actions can be implemented. Recommendations should be aimed at the following groups and be included below:

For Sub-National Governments

The subnational governments should contribute actively to the dialogue for the definition of energy poverty by providing local and regional insights of the phenomenon.

Local and regional energy and climate planning should institutionalise the energy efficiency first principle (EE1st) as a cornerstone to their energy and climate planning. This will contribute to minimise the need for energy use, the energy costs, and the relevant needs for actions against energy poverty.

The municipalities should secure funds and political commitment for the establishment of EP mitigation offices/ one-stop shops. Doing so, municipalities will effectively target the EP households and support them, as well as run awareness campaigns.

The municipalities should create an energy poverty mitigation action team that will act as the municipal facility for the coordination of the relevant actions (support the EP mitigation offices, setup, financing and running of the energy community, design, and implementation of the EP actions, build in-house capacity etc).

Local authorities should promote interdepartmental cooperation and dialogue between different governance levels when planning energy poverty mitigation actions to address successfully the households' needs and be aligned with the legislative context.

Municipalities'' networks/ associations need to strengthen cooperation with national authorities, academia, and national energy poverty observatory to optimise targeting procedures (tools, set of indicators, methodologies etc.), data gathering procedures and capacity building activities for the municipal staff. This will enable local authorities to successfully identify the energy poor households and focused groups affected (immigrants, disabled, elderly etc.).

For National Government

The relevant ministries and national authorities should work on adopting one horizontal and inclusive definition of energy poverty. This definition should be aligned with EU and Greek national energy strategy and initiatives (Green Deal, REPowerEU, Renovation Wave, EPAH, Greek NECP, NEPAP). Co-creation with all the interested actors (authorities, institutions, and bodies) from local to national context is a prerequisite, so as the definition to be applicable to all governance levels (local, regional, national).

The Ministry of Environment and Energy should promote the EE1st principle when planning energy poverty mitigation actions to minimise energy consumption and costs, as well as the need for new energy production units. This can be achieved by institutionalising the EE1st in energy and climate planning. Furthermore, the NEPAP should prioritise actions (that foresee subsidies) to energy efficiency/saving interventions.

The Ministry of Environment and Energy and the relevant authorities/organisations should redesign, define, and endorse the role of the National Energy Poverty Observatory. It should act as an overarching facility, capable of providing valid data, tools, capacity-building activities, and information to all actors of all governance levels and areas of interest, interested in EP targeting and mitigation.

Targeted building renovation financing schemes (i.e., I am saving at home), that address specific needs of energy poor households, needs to be designed and provided. These schemes should incorporate social and regional criteria (e.g., lignite regions), be complementary with the Energy Efficiency Obligation Scheme and consider the different ownership cases (owner, tenants) to enable most of the energy vulnerable household face the high upfront costs and administrative burden. To be successful, a coordinated dialogue with all the stakeholders needs to be initialised.

The relevant ministries should work on identifying the needs and barriers that energy poor households face to participate in collective/community energy actions (renewable energy production, saving schemes, increase of energy efficiency, building renovations etc.) at local level. Working with civil society organisations and energy communities can provide valuable feedback. This will facilitate the design of targeted financing schemes to increase the participation of the energy poor households in energy communities.

The Ministry of Environment and Energy should join forces with the TSO and DSO for the acceleration of the smart energy meters and new digital technologies penetration, at least for the energy vulnerable households, to enhance the validity of data for the targeting of the energy poor and to enable demand response services for energy use optimisation.

The Ministry of Environment and Energy should institutionalise the self-production (independently/collectively) of a minimum amount of energy for all and ensure the supply (ban of disconnections) of the basic energy demand for the transition period. Intensive dialogue with the interested parts (local authorities, NGOs, private sector, energy communities) is needed to be coordinated by the ministry.

The relevant ministries should secure funding and provide technical assistance to all municipalities that want to establish an energy community. These energy communities must get additional funding for activities relevant to EP mitigation, so as the implementation of the respective action to be accelerated.

The Ministry of Environment and Energy should consult the energy communities' associations and other relevant actors to the upgrade of the Energy Community law favourable of energy poverty mitigation. Thus, the legislation will incorporate provisions based on the real needs of the energy poor, as well as enable energy community take advanced action in EP mitigation.

The Ministry of Environment and Energy should map and remove the administrative and technical barriers for the enhancement of the self-consumption schemes from RES in buildings, to make them attractive for most households. Some of the barriers should be addressed in coordination with the TSO/DSO. Consultation with technical associations (i.e., TGC) and other actors will be helpful, as well.

The Ministry of Environment and Energy should optimise the heating allowances framework in such a way that promotes the fair clean energy transition for all. This entails the prioritisation of the energy efficiency/savings interventions financing against the fossil fuels subsidising. This must be supported by relevant actions on capacity building, technical assistance, and relevant tools development. Thus, energy-poor households will be supported to implement sustainable and clean solutions.

Greek Energy Regulatory Authority and the Ministry of Energy need to consider the establishment of clean energy bills as a measure that promotes consumers' awareness of their energy use, as well as relief of excessive costs that may lead a household to energy poverty. Energy providers need to be part of this.

For Civil Society

Civil society groups should contribute to the dialogue for the definition of energy poverty as their views on the issue can shed light on the social aspects of energy poverty, not previously identified.

Energy communities should work on mapping the challenges the energy-poor households face towards participating in community energy actions (collective self-consumption, citizen-led renovations, etc). This will be a valuable input to the national authorities that work on the upgrade of energy communities' law and the creation of relevant targeted financing schemes for the energy poor.

The civil society organisation needs to contribute to the dialogue for the redesign of building renovation financing schemes, as well as the self-consumption schemes, by providing insights about the challenges various social groups may face.

NGOs and civil society organisations need to combine forces with municipalities in the establishment of EP mitigation offices. This will enhance the efforts of targeting and addressing the multi-faceted phenomenon by giving local insights of the households in need.

Civil society along with national authorities and academia should work on the establishment of an energy supporter/ mentor network. The network can act as a resource of experts that can work in alignment with the National EP Observatory and the EP mitigation offices to maximise impact.

Energy communities should intensify their efforts on establishing networks between themselves and other actors (civil society, academia, authorities) to create mechanisms of mutual support and capacity-building opportunities. Additionally, combining forces can strengthen their voices in relevant national consultations, such as the consultation for the Energy Community law upgrade.

Civil society actors need to be active in public awareness campaigns regarding energy citizenship by activating their communication channels, networks, and tools. Their communication strategy should consider the overarching EP mitigation plans (sub-national, national municipal) and adjust the message to their specific local/group context. Furthermore, these efforts can be combined with those of EP mitigation offices.

For The Private Sector

The private sector subject to the Energy Efficiency Obligation Scheme should cooperate with relevant ministries to align their actions with the foreseen redesigned building renovation financing schemes (Save at Home) for energy poor households. Smart energy meters and promotion of new digital technologies need to be part of these actions. Thus, different actors' efforts can be combined to have the maximum impact on energy poverty mitigation efforts without spoiling forces.

The DSO and TSO should upgrade their network infrastructures and digital tools that support the integration of self-consumption units under versatile schemes.

Energy providers and private businesses should promote actions regarding public awareness of energy poverty mitigation. These actions could vary, from the provision of tips and tools to customers/citizens that help them understand/minimise their energy use, to the communication of activities that are subject to the Energy Efficiency Obligation Scheme.

Energy providers should lead the way for the facilitation of the clean energy bills format. This must be done in coordination with the Greek Energy Regulatory Authority and the Ministry of Energy.