WELLBASED

D5.5. Policy Recommendations

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WP5 – Policy recommendations, scale-up and transferability

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Statement of originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

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List of acronyms

- DX.X: deliverable X.X
- EC: European Commission
- EP: Energy Poverty
- EPAH: Energy Poverty Advisory Hub
- EPHA: European Public Health Alliance
- EU: European Union
- EUSAIR: EU Strategy for the Adriatic-Ionian Region
- EUSALP: EU strategy for the Alpine region
- GP: General Practitioner
- HiAP: Health in All Policies
- NCDs: Non-communicable Diseases
- SIB: Social Impact Bond
- TX.X: Task X.X
- UFM: Urban Financial Metabolism
- WHO: World Health Organisation
- WP: Work Package
- WUPs: WELLBASED Urban Programmes…

Executive summary

The deliverable 5.5 (D5.5) aims to equip decision makers at local, national and EU level with the knowledge built within WELLBASED and its policy implications to make better informed decisions about defining evidence-based urban policies to tackle Energy Poverty. The elaboration of this deliverable has followed a methodology based on expert consultation (including at the End Energy Poverty Forum meetings), desk research and the collection of feedback in technical forums and from WELLBASED project partners. This process ensures comprehensiveness and relevance of the recommendations provided.

Based on the health effects of energy poverty, which have been extensively documented throughout the project, a review of different EU policy instruments on health and energy is carried out. This analysis reveals gaps in addressing the intersection of energy poverty and health: energy policies often lack explicit consideration of their health effects and how to address them, while health policies inadequately address Energy Poverty as a social determinant of health. There is ample room for action by public authorities to bridge these gaps.

The WELLBASED project plays a key role in addressing the gaps between energy and health policies by offering empirical evidence on Energy Poverty Indicators and shedding light on coping strategies. The findings emphasize the ongoing challenges of Energy Poverty, despite current policy efforts, and underscore the need for more impactful solutions. Additionally, WELLBASED presents integrated intervention models that tackle Energy Poverty while incorporating health-related considerations.

The Policy recommendations are provided across several areas corresponding to the horizontal domains mentioned by the European Commission in its recommendation to Member States to address Energy Poverty: governance, capacity building, monitoring to take action and funding. One section presents the main aspects to be considered when replicating the WELLBASED urban programmes in different locations. As a result, a set of policy recommendations is provided, which represent potential pathways for improvement and transformation in the aforementioned fields. These policy recommendations are mainly focused on engaging in local action.

Finally, the deliverable includes a compilation of tips and lessons learned that may be useful for the design of future interventions and for scientific research in this field, as well as a series of best practices carried out in the pilots with a high potential for replicability.

The WELLBASED project highlights the importance of local action and community engagement in addressing Energy Poverty, emphasizing place-based solutions tailored to the needs of the most vulnerable populations. The WELLBASED Urban Programmes follow a socioecological model of health determinants, recognizing the interconnected factors that influence health outcomes. This approach underscores the need for multi-level strategies that not only provide immediate relief but also drive systemic change by promoting healthier living conditions and long-term resilience. Moreover, integrating a rights-based approach to energy is essential to empower individuals and communities, shifting the narrative from assistance to entitlement. Recognizing access to energy as a fundamental right helps to combat stigma, promote social justice, and strengthen collective action. The lessons learned and best practices identified in the project offer valuable

insights for future interventions and policy development, reinforcing the necessity of a holistic and multidisciplinary approach.

1. Introduction

1.1. Objectives of the project

WELLBASED addresses the Horizon 2020 Call "Innovative actions for improving urban health and wellbeing – addressing environment, climate and socioeconomic factors". The project is aimed at designing, implementing, and evaluating a novel, comprehensive urban programme. The programme was based on the social ecological model of health determinants, to significantly reduce Energy Poverty and its effects on the citizen's health and wellbeing. The programme has been implemented and evaluated in six different pilot cities (Valencia – Spain, Heerlen – The Netherlands, Edirne – Turkey, Jelgava – Latvia, Obuda – Hungary, and Leeds – United Kingdom). The design of the urban programme was built on evidence-based approaches, representing not only different urban realities but also a diverse range of welfare and healthcare models. Following the development of the WUP in each site using the socio-ecological model (see also Deliverable 2.3) the implemented interventions have been classified according to the layers of this model (see table 2). For details on the types of activities we refer to the Deliverables of Work package 3, see, amongst others, D3.1. All deliverables can be found online in the resources section of WELLBASED website.

1.2. Objectives, scope and methodology of the deliverable

Within T5.5, whose objective is to foster at local/regional/national/EU level and internationally the adoption of urban programmes aimed at reducing Energy Poverty (considering health as a horizontal issue), the aim of the Policy Recommendations document is to equip decision makers at local, national and EU level with the knowledge built within WELLBASED and its policy implications to make best informed decisions about defining evidence-based urban policies to tackle Energy Poverty. In this way, the aim is to leverage the knowledge generated throughout the project, particularly in the quantitative and qualitative studies, and to transform it into material that can inspire public policies to address Energy Poverty in an effective and efficient manner, considering the effects on health.

The document is structured into three main sections. Part I provides the background, offering an in-depth analysis of the theoretical framework of WUPs, the effects of energy poverty on health, and a comprehensive review of the European Union's key health and energy policies, with the aim of identifying existing gaps. Part II presents policy recommendations across several action fields. Part III includes a set of practical tips derived from the project's experience to be considered for both future interventions and research. Lastly, the document includes a section with main conclusions of this deliverable.

To elaborate this document, a methodology based on four main elements was followed: (1) consultation with experts, including Work Package leaders and the External Advisory Board, (2) desk research, (3) attendance and organisation of forums and events and (4) contributions from members of consortium and pilot sites through specific workshops and templates. Each of these elements is detailed below.

1. Consultation to WP leaders about related topics and External Advisory Board.

   On certain occasions, the WP leaders have been consulted to provide their views on issues such as the structure of the document or specific recommendations. The structure and preliminary ideas of the document were also with the Ex AB and the document was modified accordingly.

2. Desk research

   Given the evidence-based nature of the recommended policies, reviewing and understanding the studies produced within the WELLBASED project has been critical to reaching conclusions supported by the data generated within the project, especially the quantitative and qualitative studies on pilot results. In addition, documents from other organizations that address topics of interest to the scope of work of the document have been consulted, especially from other related EU funded projects and WHO policy briefs.

3. Attendance and organisation of forums and events and feedback gathering

   The team in charge of this document has attended and organised focused sessions at different events, such as the Mission Cities Annual Conference (June 2024), the Energy Poverty Advisory Hub (EPAH) International Annual Conference in Barcelona (October 2024) or the End of Energy Poverty Forum in Brussels (December 2024). Workshops on the link between of Energy Poverty and health have been held to extract relevant contributions from the audience of the events, an audience specialized in the field of energy and whose viewpoints have been integrated in this deliverable.

4. Collection of contributions from WELLBASED partners

   Partners of the WELLBASED consortium were also able to provide their thoughts on what public policies could be implemented in different fields to reduce Energy Poverty, in a workshop organized at the WELLBASED consortium meeting in Leeds (September 2024). A previous workshop held in Obuda (October 2023) allowed to identify the governance at each pilot site of the different policy domains necessary to adopt a multilayer and HiAP approach. Pilot sites contributed with periodic updates on their Energy Poverty measures at the different government levels from November 2022 (D2.2) to November 2024 through a template designed for that purpose. These updates are included in Annex I.

1.3. Relation to other WPs and deliverables

Due to the evidence-based nature of this deliverable, there are some project deliverables deeply related to this one. Lessons learnt from interventions are based on the deliverables D3.4 Final report on the implementation of the urban programme and D5.2 Upscaling and replications strategies. In terms of results of research, deliverables D4.2 Intermediate preliminary analysis report, D4.3 Final pilot sites analysis report and D4.5 Qualitative Evaluation Report have been key to lay out the content of this work. D5.1 Existing and alternative financing models has been critical to the elaboration of policies in the field of funding.

D3.4 and D5.2 have been used for tips and lessons learnt from interventions, D4.2, D4.3 and D4.5 have been the basis for the sections that summarise results on effects of Energy Poverty and Wellbased Urban Programs WUPs on health, as well as lessons learnt for research. D5.1 has allowed to stem policy recommendations for funding.

Table 1. Deliverable 5.5 in relation to other WPs and deliverables

WP	Deliverable/ Task	Description
WP2	D2.1	Report on public policies and interventions to reduce Energy Poverty (Leader: LNV)
	D2.2	General framework of the urban programme (Leader: LNV)
	D2.3	Seven (7) adapted urban programmes (Leader: LNV)
WP3	D3.1	Implementation plan for each pilot site (Leader: LNV)
	D3.2	Midterm recruitment report (Leader: EMC)
	D3.3	Intermediary report on the implementation of the urban programme (Leader: ASIDEES)
	D3.4	Final report on the Implementation of the Urban Program (Leader: ASIDEES)
WP4	D4.1	Pilot sites evaluation framework (Leader: EMC)
	D4.2	Intermediate preliminary analysis report (Leader: EMC)
	D4.3	Final pilot sites analysis report (Leader: EMC)
	D4.4	Data platform with data gathered (Leader: INCLIVA)
	D4.5	Qualitative Evaluation Report (Leader: UNIVLEEDS)
WP5	D5.1	Existing and alternative financing models (Leader: MUTK)
	D5.2	Upscaling and replications strategies (Leader: DEM)

All previously published deliverables are available on the WELLBASED website.

PART I. Background

2. Theoretical framework of WUPs: socioecological model of health determinants

The intervention model within the WELLBASED project has followed the structure proposed by Whitehead, co-author of the social ecological model, intervening on four Layers as shown in Figure 1. The social ecological model proposed by Dahlgren and Whitehead (1991) maps the relationship between individuals, their environment and health. The health and wellbeing of individuals and populations across all age groups are influenced by a range of factors both within and outside the individual's control. The model was developed to describe the social and ecological determinants of health – the way in which elements of the social, economic and physical environments interact with individuals' biological factors and behaviors and shape health status. The model defines the different Layers of influence, and, consequently, actions that impact on each of the Layers can be taken. More concretely, it can be applied to urban programs aimed at mitigating Energy Poverty in the following manner:

- Layer 1 Individual lifestyle factors, referring mainly to actions oriented to promote individual behavioral change related to energy efficiency.
- Layer 2 Social and community networks, including building a community of knowledge exchange and peer learning aimed at strengthening community support.
- Layer 3 Living and working conditions, which refers to practices aimed at improving access to those "services" necessary for decent work and living conditions.
- Layer 4 General socio-economic, cultural and environmental conditions, referring to practices aimed at coordination initiatives and defining public policies to address Energy Poverty.

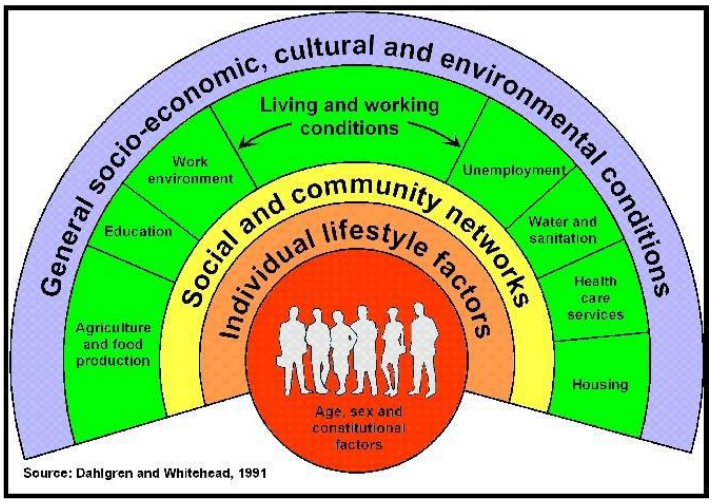

Figure 1. The four Layers of Social Ecological model

We consider Layers 1 and 2 as "low cost" interventions compared to Layer 3 "hard" interventions, which deal with more structural changes at homes fabrics.

Table 2 presents the interventions included in the six WUPs implemented in the 6 pilot sites classified according to the Layer of the socioecological model of health determinants that they aim to address.

Table 2. Interventions implemented in pilots per Layer

LAYER 1. Individual Lifestyle factors	- Socio-energy audits - Training on energy efficiency and air quality improvement in participants' homes - Energy efficiency advice, including energy bills optimization - Delivery educational/training materials - Energy efficiency trainings - Arrears management - Household management training - Health improving actions - Debt management support - Mapping of available and potential life-enhancing programs and initiatives
LAYER 2. Social and Community networks	- Open talks / community meetings - Collaboration with housing corporations - Local stakeholders network collaboration - Community building programs - Engagement of stakeholders - Regular community meetings - Trainings for professionals on the detection of Energy Poverty (GPs, healthcare and social workers, teachers and schools) - Attitude forming programs
LAYER 3. Living and working conditions	- Heating system upgrade - Home insulation - Delivery of energy efficiency kit - Installing smart meters - Installation of sensor for indoor temperature, humidity and CO2 - Energy modernisation of households: new household and appliances and equipment
LAYER 4. General socioeconomic, cultural and environmental conditions	- Communication campaigns - Local strategy of Energy Poverty

3. Effects of Energy Poverty on health and benefits of urban programs interventions

As evidenced in several deliverables of the project, Energy Poverty has diverse effects on people's wellbeing and physical and mental health. This section covers these effects, described in greater depth in deliverables D4.2, D4.3 and D4.5.

The starting point: "Energy Poverty: A Key Driver of Health Deterioration"

Based on the data collection from the baseline questionnaire, a general description of the project participants (who to a greater or lesser extent are in a state of Energy Poverty), can be done (available in D4.2). **Its main conclusion is that people in Energy Poverty show poorer health and wellbeing than the general population, which leads to health inequities.** The findings of quantitative analysis (D4.3) underline the vulnerability of this specific population and show that people living in Energy Poverty are experiencing health and wellbeing issues:

- The participants were for a large part unemployed and/or had a low income. Around 60% of the participants reported having a low income, being unemployed or having a low education level.
- A high number of participants (almost 80%) experience one or more chronic health conditions, compared to the European average of 39%. Almost half of the sample reported having 3 or more chronic conditions.
- Participants were on average overweight.
- Around one third of participants experienced most problems in the domain of pain/discomfort.
- In terms of mental health, about 30-40% reported depressive, anxiety or stress problems.
- Regarding older adults, research revealed that people in Energy Poverty present a considerable level of risk of frailty, particularly associated with co-morbidities and lack of co-habitation, seemingly.
- More than half of the sample was not comfortably warm in their home during wintertime and about 40% reported damp and/or leak problems.

In addition, qualitative interviews (D4.5) also provide insights into how people experience the link between Energy Poverty and health and wellbeing problems. Physical and mental health of people across all six cities were affected by their lack of access to energy. In this regard, the most reported physical health conditions associated with energy access are respiratory conditions, especially in children, with increased incidents of colds and flu in the winter across all cities. It is also noted that participants understand respiratory problems to be associated with exposure to cold, damp and resultant mould. Participants also attribute

exposure to heat, cold, and damp to some exacerbation of existing physical and mental health conditions. Access to energy is a particular issue that has worsened in recent times, in the context of inflation and the energy crisis which makes people's lives much more financially stressful. People felt frustrated at their lack of agency to change living conditions for themselves and their family. Extreme temperatures, and the lack of means to cope with them, also have an impact on the health of people in Energy Poverty and their ability to live ordinary lives. In this sense, in certain sites, such as Valencia, it is pointed out how damp in winter exacerbates muscle pain; while in cities with very hot summers (Valencia, Obuda, Jelgava, Edirne) people experience difficulties in sleeping at night, with the consequent accumulated fatigue, which highlights the aggravation of Energy Poverty health impact by climate change.

Coping strategies to save energy and reduce expenditure come at a cost since underconsumption can result in difficulties to maintain good health and wellbeing. Lack of financial resilience and fears for future affect mental health causing anxiety, stress, the need to make trade-offs between types of spending for basic items and services, cutting back on energy use and prioritising children's wellbeing.

Social life and people's relationships with others are also affected by Energy Poverty. People were embarrassed about cold damp homes, family visited less often, and relationships suffered where finances were constrained due to Energy Poverty.

Regarding gender differences, it was observed that women were more likely to report ongoing health problems such as anxiety, pain discomfort than men.

In short, the work throughout the project has led to a series of findings that clearly and strongly link Energy Poverty with pernicious effects on physical and mental health and wellbeing. These effects manifest themselves in different spheres: mental issues due to household financial management and deterioration of social interactions, and the development and aggravation of health conditions due to limited access to energy services. In conclusion, all of this has a negative impact on people's health and wellbeing and increases health inequalities.

The Impact of WELLBASED Urban Programs on Health: Small Gains, Big Challenges

Conclusions from both project qualitative and quantitative analysis highlight that changes after WELLBASED Urban Programs (WUPs) interventions differ on comfort and impact on health and wellbeing across pilot sites. When improvements on health occur, they are slight, and many participants are still experiencing physical or mental health issues.

It must be noted that intervention period was 12 months, and the follow-up around 3 months. Thus, it is expected there would be no major as results of short-term interventions. This is particularly true for poverty related diseases/illnesses that in many instances tend to become chronic and even degenerative in nature.

The findings of the WELLBASED quantitative evaluation study indicate in general some health and wellbeing improvement for participants in the intervention group compared to control group, although most were not statistically significant. It is the case for improvements in self-perceived health,

depression, anxiety, sleep quality and health-related quality of life. For other outcomes, for example dimensions of health-related quality of life, such as mobility or self-care, the direction of the findings was mixed. For home comfort outcomes, a positive impact of the intervention in wintertime was observed; improvement on energy costs and coping behaviour was also suggested although also not significant. It should be considered that the pilots developed in a context of energy increasing prices.

The physical health outcomes assessed in the intervention group (oxygen saturation, heart rate and blood pressure), were considered within the range of healthy values in most pilot sites at baseline. Some values of these health indicators were slightly improved, at follow-up health screenings. For example, in Valencia blood pressure decreased and pulse-oximetry values improved. In Edirne, improvement in blood pressure and heart rate was observed. Regarding sleep quality, an improvement over all pilot sites was registered looking at the average score. Also, in Valencia and Edirne an improvement in sleep quality score was observed.

When evaluating the change comparing the intervention and control group, there were no significant differences regarding the Energy Poverty indicators 'comfortably warm in wintertime' and 'comfortably cool in summertime' in the overall sample. In Valencia, the intervention group participants were significantly less comfortably warm and cool compared to the control group, while in Edirne they were more comfortably warm and cool, and in Leeds they were warmer in winter but less cool in summer. Looking only at the intervention sample, however, significant differences were found across pilot sites (reported in D4.5). Participants continued to struggle to keep homes warm in winter, and cool in summer, being the latter particularly so in Edirne and Valencia. However, they did not have to engage in energy saving practices so much (e.g. turning heating/cooling off or heating only one room), again particularly in Edirne and Valencia. Health improvements were found in Edirne, although, for other pilot sites, experiencing pain and discomfort remained an issue.

Additionally, different effects have been registered depending on the type of intervention, as described below.

<u>Layer 1 and 2: "low cost" interventions implemented: Heerlen, Jelgava, Obuda and València</u>

According to quantitative analysis (D4.3), in most pilot sites, people reported small changes in access to energy services (reduced cost of energy bills), and small improvements in health status and wellbeing. This was particularly the case in interventions which principally targeted people or community (for example providing advice, coaching, group meetings and some form of relatively small energy technology in the home) in Heerlen, Jelgava, Obuda and Valencia pilot progams.

Additionally, the qualitative analysis (D4.5) and the knowledge collected from the implementation of the interventions, have allowed to identify other non-quantifiable intangible and valuable effects:

- Participants very positively appreciated the social aspects of the **community and group activities (Layer 2),** such as the trainings (on energy efficiency, healthy habits- nutrition, mental wellbeing, physical activity-, households management, etc), and health screenings in Valencia (Citizen School of Right to Energy), Obuda or Heerlen. It implied an improvement on social interactions and meeting people from their neighbourhoods. These activities became safe spaces of trust and mutual support for

participants. Community activities contributed to personal development and growing by learning from others.

- Some of the participants became trainers or prescribers to others of the changes they have experienced in their lives, for instance, some participants at the Citizen School of Right to Energy in València.
- **Advisory and counselling activities**, implemented at individual level (Layer 1), such as socioeconomic energy audits and bill optimisation, for some participants led to positive changes on behaviours to save energy and money, and better control over energy use and bills. In Valencia, those participants who received advice from the socioeconomic energy audit could also get the social bonus which improved their financial and mental wellbeing and considerably reduced their energy bills.
- Actions such as **self-monitoring** of health parameters, energy consumption and air quality had positive effects in peace of mind and sense of control for participants of Jelgava pilot site.
- Some participants reported increases in wellbeing associated with receiving an intervention from institutions, including feeling like someone cared about them, which made their situation a little more bearable. In València, for instance, many participants put in practice the advice received on energy tips and healthier habits.
- Analysis revealed that there was no worsening of arrears during the project, although in Edirne this was still an issue for most participants.

Empowerment and trust are key elements of the WUPs and the interventions. Activities of empowerment and capacity building gave the participants self-confidence and more sense of control over their already complicated lives. People were in a critical situation at the beginning and still experienced difficulties at the end of the project. However, they now have more tools to save, to take care of themselves, to increase comfort. They feel more in control of their lives and that the institutions support them. This is beneficial to their wellbeing and mental health. For instance, in Valencia and Obuda less stress feelings were reported.

Layer 3: “hard” interventions on fabrics: Edirne and Leeds

In the two pilot cases where building fabric and/or heating systems were renovated, we saw different effects. In Edirne, people were happy to have warmer temperatures at home thanks to a new stove and radiators (home wide heating system compared to single stove). Despite improved comfort in wintertime, the distribution of low-quality by social assistance coupled with increased calorie requirement of house-wide heating system necessitated the additional purchase of better-quality coal by the participants. This created an additional financial burden. Damp and mould problems remained due to the bad conditions of housing (leaking roofs and walls). This limited the impact of the intervention. However, overall participants reported improvements in health, and reductions in pain, depression and anxiety.

In Leeds, the combination of insulation and a new district heating system made a substantial difference to people’s lives, raising comfort levels at home, and increasing wellbeing as well as positive impact on energy costs. But they still had the problem of comfort in summer to keep homes cooler.

In both cases there was an improvement of social interactions due to a better comfort at homes.

Regarding effects on mental health, for those who were in a worse starting situation, such as Edirne participants, pain and discomfort, stress, anxiety and depression improved.

To sum up, the main benefits observed after WUPs interventions are an improved awareness of health effects of Energy Poverty, better control over energy practices at home and lower energy bills, leading to less stress associated with energy costs.

Although significant, these changes remain small compared to the scale of the challenges usually faced by people living in Energy Poverty. The initial situation that needed to be addressed was often already very critical and this required action on many fronts and with more resources than those limited allocated for the project. Some aspects highlighted by participants as the root cause of their situation was the energy market, energy rising prices, structural housing situation (which needed big scale improvements regarding damp issues, insulation, air conditioning, etc) and summer heat which is becoming a major threat in many countries (aspects addressed in more detail in the following sections). We also identified a lack of trust in institutions and governments before starting the intervention.

Cost-effectiveness of WUPs interventions: Positive Results in Edirne's *hard* intervention, but Variability Across Pilot Sites

The results (D4.3) suggest cost-effectiveness for the interventions implemented at Edirne pilot site. Edirne's urban program has focused on health determinants of Energy Poverty corresponding to Layer 3 of socioecological model, more concretely, addressing some living conditions, as described above. The cost-effectiveness analysis shows that there are relevant differences between pilot sites regarding the observed effects of the intervention. In our project, according to the data available for some of the interventions, the "Hard" intervention implemented in Edirne has proven to be more cost-effective compared to the two low-cost interventions based on community and group activities which focused on Layer 2 (community environment).

Outcomes of interventions of WUP: Mixed Results Highlight the Need for Holistic and Coordinated Interventions

When evaluating the outcomes of exposure to these short-term interventions, results were mixed. Participants who benefitted from multiple interventions across different Layers of the socioecological model, indicated a significant decrease in energy costs, compared to the control group. But other problems such as lack of thermal comfort during summertime remained higher for the intervention group. Among the interventions of our WUPs, almost no intervention directly targeted summer Energy Poverty, which has emerged as a problem during the implementation of the project.

The WELLBASED Project was developed in a post-covid and energy crisis context. The post-2021 energy crisis caused (local) governments to implement support actions that were similar to those of WELLBASED Urban Programs and thus, some participants from control groups benefited from them.

As mentioned in the previous sections, some benefits of WELLBASED Urban Programs have been observed, especially from “hard interventions”. However, the problem of Energy Poverty in the project locations is far from being solved. More holistic interventions that address all aspects of energy poverty are needed at the national and European levels as well as the municipal level.

We conclude that interventions for people living in Energy Poverty are beneficial. However, to make significant impacts on these people’s lives, more structural and cross-domain action is needed. Thus, WUPs should include interventions at all Layers of the socioecological model to have significant impact on health and wellbeing. Interventions that lack adequate planning, address only parts of the problem and do not complement each other, produce disparate effects on welfare, health, energy use and expenditures. Poorly planned initiatives run the risk of being counter-productive where people’s expectations and trust in institutions are affected where they see little or no improvement in their situation. Equally, it is recommended that approaches to address the complexity of Energy Poverty at local level recognize that there are factors influencing health that will be beyond the control of interventions similar to the ones carried out by WELLBASED.

4. Review of main EU health and energy policies: identifying the gaps to mitigate Energy Poverty effects on health

Historically, policy instruments designed to reduce Energy Poverty have not been connected to the health domain, i.e., they have not considered the health effects of Energy Poverty. On the other hand, health policy has also failed to consider the relevance of living in Energy Poverty in terms of health outcomes. However, as can be easily seen in the previous chapter, there is a strong link between these two dimensions.

There is a lack of integration between health and energy policies. Health and energy policies are often addressed separately, preventing a comprehensive approach to tackling the health effects of Energy Poverty. There is a lack of effective coordination between the two sectors, making it difficult to create comprehensive solutions for people affected by Energy Poverty.

To illustrate this independent, disconnected policy development between health and energy, an analysis of the main EU policies in the fields of energy and health is presented below, with the intention of highlighting the gaps in existing policies with respect to at mitigating the effects on Energy Poverty on health. **We include in this analysis the contribution that WELLBASED project can provide to these instruments and policies.**

The WELLBASED project is instrumental in bridging the identified gaps between energy and health policies by providing empirical evidence on Energy Poverty Indicators and insights into coping strategies, as described in Section 4. These findings underscore the persistent prevalence of Energy Poverty despite existing policy measures, highlighting the necessity for more effective interventions. WELLBASED also provides integrated intervention models against Energy Poverty which consider health aspects.

4.1. Energy Poverty policies through a health lens: identifying the gaps

The work of the European Public Health Alliance in its paper *Integrating Health for Effective Energy Poverty Policy* (EPHA, 2024) has been highly useful and inspiring to complete this section. There is a wide range of EU policy instruments aimed at energy issues. However, the health perspective does not play a central role in these policies, being limited to a nominal reference in some cases, as shown in Table 3. This is particularly striking given the profound interconnection between the fields of health and Energy Poverty.

Table 3. Analysis of major EU Energy Policies Addressing Energy Poverty and Associated Health Considerations

Policy/Directive	Description	Health Considerations	Identified Gaps
Energy Efficiency Directive (2012)	Aims to promote efficient energy use across sectors to reduce greenhouse gas emissions and improve economic competitiveness.	Article 24 suggests that expert networks on Energy Poverty should include health experts and considers health conditions as factors increasing Energy Poverty risk.	While health is acknowledged, the directive lacks specific measures to address health impacts directly related to energy efficiency improvements.
Energy Performance of Buildings Directive (EPBD) (2018)	Seeks to enhance the energy efficiency of buildings in the EU, contributing to climate goals.	Article 2 mentions indoor environmental quality, highlighting health and wellbeing concerns such as temperature, humidity, and ventilation.	Despite recognizing indoor environmental quality, the directive does not mandate specific actions to ensure health benefits from energy performance measures.
Regulation on the Governance of the Energy Union and Climate Action (2018)	Establishes a framework for the governance of the Energy Union and climate action, requiring Member States to develop integrated national energy and climate plans.	Does not explicitly address health impacts related to energy policies.	Lacks consideration of health implications in energy and climate planning, missing opportunities for integrated policy development.
Social Climate Fund (2021)	Proposed to support vulnerable households and micro-enterprises in transitioning towards climate neutrality, addressing energy and transport poverty.	Acknowledges the need to protect vulnerable populations during the green transition, which can have positive health implications.	Beyond the preambles, the proposal does not significantly address health impacts or integrate health-focused interventions within its framework.
Commission Recommendation on Energy Poverty (2023)	Provides guidance to Member States on defining and measuring Energy Poverty, encouraging the development of	Highlights the importance of including health and social workers among frontline workers in Energy Poverty programs.	As a recommendation, it lacks binding authority to ensure Member States incorporate comprehensive health considerations into their

	indicators and policies to address it.		Energy Poverty strategies.

4.2. Health policies under the Energy Poverty lenses: identifying the gaps

Effects of exposure to Energy Poverty situation on health have been highlighted in the previous section related to the results of WELLLBASED evaluation studies, in addition to all the existing scientific evidence. Nevertheless, some EU policies addressing health do not include Energy Poverty. Regarding the world challenges ahead, climate change will worsen health and living conditions of people in Energy Poverty increasing even more the current health inequalities, especially affecting those more vulnerable (older adults, children, young people, women). Energy Poverty can then become a major challenge for Public Health. How the Green Deal and just transition promoted by EU are implemented, and the impact of the related policies on energy and health, will influence key determinants of the future health of the most vulnerable.

Thus, in this section we explore the current gaps regarding Energy Poverty on EU health policies, summarised in Table 4. Basically, we can identify the following issues:

- **Limited focus on prevention:** European health policies often focus on curative health care, without sufficiently prioritising prevention of the effects of Energy Poverty. Even in the case of "curative health care", the latter tends to be of poor quality for poor people and leads to increase inequalities.
- **Lack of specific data and monitoring:** Although the health impacts of Energy Poverty are scientifically proved, there is a lack of systematic data on the issue and a lack of monitoring mechanisms to assess the magnitude of the problem and the impact of interventions. This limits the ability to develop effective policies tailored to the needs of the population at risk.
- **Health inequalities not adequately addressed:** Energy Poverty contributes to health inequalities, but European policies do not always integrate the concept of social justice in relation to energy access and social determinants of health.
- **Lack of multidimensional approaches:** Many policies focus only on one-off aspects of the problem (e.g. improving household energy efficiency) without addressing the multiple dimensions of Energy Poverty, such as living conditions, access to health care, psychological wellbeing and financial security. The interactions between these factors are not sufficiently addressed.
- **Low funding for comprehensive programmes:** Programmes that address Energy Poverty from a comprehensive approach are often limited in funding and scope. Although European funds are available for tackling Energy Poverty, these resources are often not efficiently allocated to programmes that also include public health components, limiting their potential impact.

- **Inadequate awareness and training of health professionals:** Health professionals, especially those in primary care, are often not sufficiently trained or informed about the health effects of Energy Poverty. This results in late detection and limited interventions to address the impact of Energy Poverty on patients.
- **Citizens' lack of trust in institutions:** Lack of trust in institutions and public policies related to Energy Poverty and health is a major barrier. Many people affected by Energy Poverty do not seek help because of mistrust of policies or fear of stigmatisation. Public policy needs to do more to improve public confidence in the measures that are implemented.

Table 4. Analysis of EU Health Policies Addressing Energy Poverty and Associated Health Considerations

Policy/Initiative	Description	Energy Poverty Considerations	Identified Gaps
EU Health Strategy (2008)	Focuses on disease prevention and health promotion across Member States.	Does not explicitly address Energy Poverty or its health implications. Energy Poverty is not sufficiently linked to environmental health policies.	Lacks integration of Energy Poverty as a determinant of health, missing opportunities for comprehensive health promotion.
EU4Health Programme (2021)	Aims to strengthen health systems and improve health outcomes in the EU.	Does not specifically include Energy Poverty in its objectives.	Overlooks the preventive health issues arising from lack of access to energy, limiting its effectiveness in addressing related health problems.
Healthier Together – EU Non-Communicable Diseases (NCD) Initiative (2022)	Targets prevention and management of NCDs across five strands: health determinants, cardiovascular diseases, diabetes, chronic respiratory diseases, mental health, and neurological disorders.	Energy Poverty negatively impacts all five strands but is not recognized as a health risk factor within the initiative.	Fails to consider Energy Poverty in prevention strategies, missing a critical determinant affecting NCD prevalence and management.
Europe's Beating Cancer Plan (2021)	Addresses cancer prevention, treatment, and care.	Does not focus on social and environmental determinants like Energy Poverty.	Neglects factors such as inadequate living conditions that can

			increase cancer risk and hinder access to healthcare.
EU Strategy on Mental Health (2023)	Emphasizes addressing social determinants of mental health.	Does not specifically identify Energy Poverty as a key determinant.	Overlooks the impact of energy crises on mental health, especially among those already experiencing Energy Poverty.
EU Patients' Rights Directive (2011)	Ensures access to quality healthcare across the EU.	Does not address barriers to healthcare access caused by Energy Poverty.	Fails to consider how Energy Poverty limits individuals' ability to seek and receive adequate healthcare services.
Health Professional Education Programme (Ongoing)	Provides training for health professionals.	Does not include Energy Poverty as a health risk factor in curricula.	Limits health professionals' capacity to identify and address Energy Poverty, affecting early intervention and patient outcomes.

4.3. Conclusions on current EU energy and health policies with potential contributions from WELLBASED project

To sum up, the following gaps have been identified in the previous sections:

- **In Energy Policies:** While there is a growing recognition of the intersection between energy efficiency and health, explicit integration of health considerations remains limited. Policies often acknowledge potential health benefits but lack specific measures or mandates to address health impacts directly related to energy efficiency improvements.
- **In Health Policies:** There is a general lack of recognition of Energy Poverty as a significant social determinant of health. Current health policies and initiatives do not explicitly incorporate strategies to address the health impacts associated with Energy Poverty, leading to missed opportunities for comprehensive disease prevention and health promotion.

Next section addresses Policy Recommendations more in depth, providing actionable insights for enhancing the synergy between energy and health policies.

4.4. Bridging EU Energy and Health policies for action against Energy Poverty

We can draw some highlights from the previous section to narrow the gap between EU energy and health policies to address Energy Poverty.

Thus, to bridge EU energy and health policies for action against Energy Poverty, learnings from WELLBASED projects suggest:

- **For Energy Policies:** To incorporate explicit health objectives and actionable measures into energy efficiency and poverty alleviation programs. This includes developing and implementing specific actions that address health impacts directly related to energy efficiency improvements.
- **For Health Policies:** To explicitly recognize Energy Poverty as a critical social determinant of health and risk factor for physical and mental health. Integrate considerations of energy access, improvement of housing conditions, affordability and access to health services into health strategies, policies, and programs to address the root causes of health disparities.

More specifically, we suggest:

Mainstreaming Health in Energy Transition policies

- **Define joint national energy efficiency and health plans:** Require national energy efficiency plans to include measures to specifically target improvement of health of vulnerable people affected by Energy Poverty.
- **Health impact assessment:** Include health impact assessment (both mental and physical health) as part of environmental impact assessments of energy policies and housing retrofits.

Establish common objectives between the health and energy sectors in European strategies to facilitate a more coherent and coordinated response.

- **Health and energy targets in the European Green Deal:** Ensure that EU policies under the European Green Deal include specific targets linking clean and affordable energy with public health, such as reducing respiratory and cardiovascular diseases through improved air quality and access to affordable energy.
- **Health targets as part of the energy transition:** Include health indicators (e.g. reduction of morbidity associated with Energy Poverty) as part of progress reports on EU energy transition targets.

- **Include Energy Poverty in EU public health targets:** European health policies, such as the Health 2020 Strategy or the new Health 2030 Strategy, can include specific targets to reduce the health effects of Energy Poverty as part of social welfare policies and universal access to health services.

Inclusion of Energy Poverty as a social determinant of health within European Public Health policies.

Develop Europe-wide awareness campaigns on the impact of Energy Poverty on health, targeting both citizens and policy makers, to increase awareness and coordinated action in this area.

PART II.

Policy recommendations: tackling Energy Poverty as a public health priority

5. Policy recommendations for local action

These recommendations are designed to guide local and other policymakers in shaping comprehensive, impactful policies that promote a healthier, more equitable future for all.

Local policymakers have a crucial role in shaping strategies that not only tackle Energy Poverty but also improve public health outcomes for our communities. While many recommendations already exist to combat Energy Poverty, this document focuses specifically on bridging the gap between the gap between the energy and health domains—two areas deeply interconnected in the lives of vulnerable populations, yet still not sufficiently integrated in the policy realm.

Drawing from the insights of the EU-funded WELLBASED project and its Urban Programs, we encourage the integration of health considerations into Energy Poverty policies, and vice versa. By adopting a holistic approach that addresses both energy and health together, policymakers can create more effective, sustainable solutions that improve the wellbeing of those most affected by these challenges.

WELLBASED Policy recommendations are divided into the following five actions fields[1]:

1. **Local action: urban programs to fight against energy poverty through health lenses:** key aspects to consider when replicating an urban program (WUPs) to fight against Energy Poverty and its health effects.
2. **Governance:** suggestions on how to promote collaborative frameworks for multilayer and multidimensional action at local level to ensure urban programs /WUPs) implementation from a HiAP (Health in All Policies) approach..
3. **Capacity Building:** recommendations for developing training programs for different stakeholders to identify and address the health implications of Energy Poverty. They can be applied to local, national, European or other subnational levels.
4. **Monitoring and Evaluation:** guidelines to track and evaluate Energy Poverty and health indicators, as well as the effectiveness of integrated policies and interventions.
5. **Funding:** considerations about funding schemes to tackle Energy Poverty considering health, based on the financial models analyzed within WELLBASED project. Their implementation is targeted mainly to local level, but this section includes recommendations also for EU policies.

The first category summarizes the findings more directly linked with our project results and experiences, focused on replication of local urban programs (WUPs). The four last categories are based on the structure of the EU Policy Recommendations against Energy Poverty issued in 2023 (EC, 2023). Each category is developed as follows: there is a first set of key ideas on the current context of the category, then an

[1] The first category summarizes the findings more directly linked with our project results and experiences, focused on replication of WELLBASED local urban programs (WUPs). The four last categories are based on the structure of the EU Policy Recommendations against Energy Poverty issued in 2023 (EC, 2023).

identification of the needs for action that derive from the described context, and finally, the policy recommendations to address these needs.

Action field 1. Local action: urban programs to fight against energy poverty through health lenses

The WELLBASED project provides valuable insights for local-level interventions, focusing on policymakers, stakeholders, and planning within municipalities. WUPs holistic approach, which integrates energy, health, wellbeing, and community participation, offers a comprehensive framework for addressing Energy Poverty and its health impacts. By leveraging these principles, local programs can be designed, implemented, and evaluated to promote health equity, improve wellbeing, and effectively combat Energy Poverty at the community level. These recommendations aim to guide local policymakers in creating impactful, sustainable solutions.

CONTEXT

- Energy Poverty is a complex public health problem that directly affects the physical and mental health of people, especially the most vulnerable groups.
- WELLBASED promotes intervention programmes (WUPs) that combine energy measures with public health actions. The aim was to design comprehensive plans that combine Energy Poverty and health action. The approach can be applied to design and implement local programmes that simultaneously address both problems.
- The WUP interventions implemented and evaluated in the framework of WELLBASED project were mainly targeted to address health determinants of Layers 1, 2 and 3 of socioecological model[2].
- The WUP methodology is based on the adoption of a holistic approach to address health determinants for Energy Poverty using a of socioecological model that has proved to have positive impacts on health and wellbeing of people. This methodology can be replicated in different contexts as done in the six pilot sites of WELLBASED.
- WELLBASED provides evidence of the positive impact of health promotion interventions in the fight against Energy Poverty.
- WELLBASED encouraged the active participation of local communities in the implementation of sustainable interventions that combine health, energy and wellbeing. Through community activities,

[2] Layer 1 Individual lifestyle factors. Layer 2 Social and community networks. Layer 3 Living and working conditions. Layer 4 General socio-economic, cultural and environmental conditions.

programmes can empower residents to improve their living conditions while fostering a supportive social environment that reduces the anxiety and social isolation associated with Energy Poverty.

- Rather than focusing exclusively on deficiencies or health problems, WELLBASED emphasised the resources, capacities and strengths that people and communities already have, and how these can be harnessed to improve health in the context of Energy Poverty. Furthermore, the promotion of the Right to Energy and the messages conveyed to participants in this regard have reinforced this positive approach to interventions.

NEEDS FOR ACTION

- Action from multidimensional approaches to address Energy Poverty: WELLBASED's experience shows that interventions focusing solely on energy efficiency or physical health are not sufficient to address the complexity of Energy Poverty. Action to address Energy Poverty needs holistic and multidimensional approach:
    - Consideration of the different social and environmental determinants of health to achieve significant impacts on health and wellbeing.
    - Multilayer and intersectoral interventions to make significant impact on people's lives, more structural and cross-domain action.
    - A more holistic approach for solutions that combine physical or "hard" interventions (such as improving energy efficiency in housing) with "soft" interventions such as community, psychosocial support and health education.
    - Special consideration of mental health. It is affected by Energy Poverty conditions, but mental health policies do not always consider the impact of factors such as heat stress or social isolation arising from Energy Poverty, as detected by the project (see Section 4).
    - Action to address Energy Poverty in summer and winter. Interventions must be adapted to climatic variations and consider summer Energy Poverty as well as the effects of climate change. Also to monitor heat stress and sleep quality.
- A Health in All Policies (HiAP) approach and cross-sectoral work between the health, energy and welfare sectors is crucial for the success of interventions. However, there are still coordination gaps between these sectors, which hinders a more effective implementation of public policies. The HiAP approach needs to integrate the health dimension into energy policies for a Just Energy Transition, housing policies, climate change plans and strategies (mitigation and adaptation).
- Strengthening of communities experiencing Energy Poverty, that often lack adequate infrastructure to organise and act collectively. The development of community assets, such as social support networks, local organisational capacities and active participation in decision-making, should be encouraged and supported.

- Real engagement of affected people for interventions to be more effective. The results suggest that active community participation is essential for the effectiveness and sustainability of interventions.
- Integration of the approach to health inequalities and personalization of interventions are key to achieving effective impact. Project results reveal that some groups (e.g. the older adults, single parents, people with pre-existing illnesses) are more vulnerable to the effects of Energy Poverty and energy crisis. Policies, services and interventions must consider the structural and socio-economic differences of individuals and communities.
- Empowerment of individuals to make informed choices efficiency is a key strategy that needs to be strengthened. Energy Poverty does not only affect the physical conditions of the household but also influences people's behaviours and attitudes towards their health.
- A new management of risk situations: given the post-COVID context and the subsequent energy price crisis, the WELLBASED results show that the capacity of communities and governments to cope with simultaneous crises (health and energy) may be limited. It is essential to address how current and future crises affect people's living conditions.

CONCRETE ACTION POINTS

Include HiAP from the start through a multidimensional and multilayer approach for the development of multi-sectoral public policies.

Promote more integrated public policies that address Energy Poverty as a key determinant of health, effectively integrating and coordinating health, energy, housing, social welfare, environmental and urban development sectors. These policies should target vulnerable groups, with the clear intention of reducing social inequalities. Interventions must be holistic, considering both living conditions and the psychological and physical factors that affect people's health.

Inspiring practice
WELLBASED Manifesto: Better Policies for Healthy Homes
WELLBASED project has launched a campaign aimed at European and UK cities. It suggests a series of actions to local governments that combine health and energy poverty action. The cities who sign up recognize their role to fight energy poverty that extends beyond short-term emergency solutions. During the project campaign, 14 cities signed the Manifesto[3].

3 The Manifesto is available here: https://wellbased.eu/wp-content/uploads/2024/02/Local-leaders-manifesto_healthy-homes_WELLBASED-2024.pdf and the signatories cities can be found here: Join us! - WELLBASED

Use WELLBASED Urban Programs (WUPs) as Strategic HiAP Tools

WUPs, based on the socio-ecological model, have the potential to offer comprehensive and multidimensional solutions to Energy Poverty and its impact on health. This approach allows working at different levels, from the individual to the policy level, and promotes inter-institutional collaboration and the active participation of communities. Through intersectoral public policies, both Energy Poverty and the social determinants of health can be addressed, improving people's quality of life and reducing health inequalities. Include and combine interventions to address health determinants of all Layers of socioecological model in your WUP to achieve significant impact in the intervention area.

Improve coordination across sectors

Promote more integrated public policies that effectively coordinate the health, housing, energy, social welfare and urban development sectors to jointly address Energy Poverty and its impacts on health. (see Section 5 on Governance for more information).

Take a people-centred policies approach, community tailored and focus on specific vulnerabilities

Due to the complexity of the Energy Poverty problem, before implementing a WUP, it is recommended to carry out a proper analysis of the situation of the people, communities and areas receiving interventions in relation to health determinants. This is essential for identifying those more vulnerable to Energy Poverty, determining their needs and main problems, (which are often not obvious,) and for carrying out proper and effective planning, including the development of solutions with a significant impact.

Develop interventions tailored to the specific characteristics of vulnerable groups, ensuring that solutions are designed according to their needs and circumstances, especially in crisis contexts.

Other projects such as POWER UP have developed a co-designing approach involving vulnerable people as of the start around municipal action on energy efficiency/renewable energy: https://www.socialenergyplayers.eu/library/

Recognize Energy as a Right, Not Just a Service in your interventions, prioritizing empowerment and social justice versus stigmatization and poverty

Engaging vulnerable people in programs that frame access to energy as a **right** rather than a solution to **Energy Poverty** can be less stigmatizing and more empowering. When energy access is positioned as a fundamental right, it shifts the narrative from one of deficiency or neediness to one of entitlement and dignity. People may then feel more empowered and motivated to actively participate. This can increase engagement and participation in both the programs themselves and in advocating for broader policy changes, as it connects their immediate needs with larger societal goals. Furthermore, there is evidence that engagement and improved sense of agency has a positive impact on people's health itself, particularly mental health.

Strengthen local community participation

Encourage active and continuous involvement of local communities in the design, implementation and evaluation of interventions. The community should be seen as a key factor in solving the problem, empowering them to take control of local solutions.

Mobilize Health Assets within the community to combat the effects of Energy Poverty on Health, especially strengthening community-based assets

Mobilizing *health assets* [4] to combat Energy Poverty involves leveraging existing resources within communities and health systems to promote sustainable and effective interventions that improve the quality of life for those affected. The first step is identifying and mapping these assets in the target area. These assets may be social, community-based, institutional, or personal, and their mobilization should be guided by a comprehensive, collaborative vision that addresses the determinants of Energy Poverty from multiple perspectives. The engagement of community leaders representing vulnerable communities will help ensure acceptance and adaptation to their specific needs.

Community networks and local associations play a crucial role in identifying individuals affected by Energy Poverty and implementing health-improvement interventions. Community groups, non-governmental organizations (NGOs), and local cooperatives can be mobilized to provide social, educational, and emotional support.

Inspiring practices
Peer training programs in vulnerable neighborhoods where residents become facilitators, helping others to access energy or health services.
Community wellbeing strategies: Encourage the creation of social support networks and community groups that enable individuals to share resources, experiences and advice for coping with the difficulties associated with Energy Poverty.
Formation of community support groups to assist families in managing energy costs, share best practices for improving energy efficiency, and provide psychosocial support. Such as those implemented by València pilot site through the Citizen School for Right to Energy. *Similar programs have been implemented and promoted at the Citizen school for Right to Energy in València WELLBASED pilot.* (see section 6b for more information on these inspiring practices)

[4] A health asset can be defined as any factor (or resource) which enhances the ability of individuals, groups, communities, populations, social systems and/or institutions to maintain health and well-being and to help to reduce health inequalities. (Morgan and Ziglio, 2007)

Enhance Intersectoral Collaboration: create partnerships with Other Sectors and Key Community Stakeholders Enhance Intersectoral Collaboration

Mobilizing health assets also requires forming alliances across sectors such as energy, public health, housing, education, and social welfare. These sectors should collaborate to identify cases and create holistic solutions addressing both energy and health challenges.

Inspiring practices
Include Energy Poverty services or energy services as **health assets** when mapping the health assets in the area of intervention.
Engaging and training professionals from health, social services, energy, educational centers, and community representatives in identifying and acting against Energy Poverty through community support networks. Community assets must be part of the referral protocols. *Such as those implemented by València Citizen School for the Right to Energy (see section 6b)*
Cross-sectoral training: Organize workshops and joint training activities where health social services and other sector professionals can learn about available energy solutions and energy experts can learn about the health impacts of Energy Poverty. *Such as those implemented by València Citizen School for the Right to Energy (see section 6b)*
Launching pilot programs combining home energy efficiency improvements with health monitoring in vulnerable areas, ensuring healthcare providers have access to health data of patients to assess impact of energy efficiency interventions. *Such as the program implemented in Heerlen pilot site available in Petrova, E. et al. (2024).*

Empower Health Professionals as Agents of Change

Healthcare providers play a critical role in detecting Energy Poverty-related health issues, from respiratory and cardiovascular conditions to mental health disorders. Establish referral protocols that connect patients to community and social resources through social prescribing. Early detection is key to prevent worsening health problems.

Inspiring practices
Integrating health professionals into identifying households at risk of Energy Poverty during consultations, while providing them with training, information, and tools to guide patients on reducing Energy Poverty's health impacts. Health professionals who visit patients/clients in their homes can be a particularly valuable source for referrals, e.g. by identifying mold, cold, damp, etc, in the home and recognizing this may be contributing to their patients/clients' poor health. Similarly, staff responsible for discharging patients from hospitals can make sure patients are discharged to warm, ventilated homes free from damp and mold.

Create a referral network within the community that connects patients to energy assistance services, social support or housing improvements to reduce Energy Poverty. Primary care physicians' collaboration with energy organizations and social services to provide patients with energy-health education, support from community and referrals to appropriate resources for Energy Poverty alleviation.
Development of tailored capacity-building programs and action and referral protocols to follow in identifying and dealing with cases of Energy Poverty. Those developed within València pilot provide health professionals with the necessary tools and knowledge to detect Energy Poverty signals and available resources to refer. Among the tools proposed, the professionals have identified specific questions to include in health questionnaires during the visit to help identification and subsequent referral to social services and energy services. (See section 6b for more information)

Promote Energy and Health Education to Build individual and community Resilience

Raise awareness among affected individuals and the broader community about the risks of Energy Poverty and its health impacts and develop **energy and health literacy programs** for the community and residents of energy-poor households. These programs should include training on efficient energy use, bill optimization, health self-care and disease prevention, managing stress and anxiety (mental wellbeing in general), energy rights (e.g., Valencia Citizen School for the Right to Energy), especially for vulnerable people, such as older people, carers of children and families with pre-existing health conditions. The program must be targeted both to the strengthening of individual capacity for self-management of health and to provide community support, combining individual training and group activities of mutual support.

Engage affected Individuals as Agents of Change

Actively involve individuals experiencing Energy Poverty in designing and evaluating interventions better tailored to their needs and local realities. Creating participatory spaces allows affected populations to voice their needs, share experiences, contribute ideas, and co-design solutions (e.g., Valencia Citizen School for the Right to Energy), enhancing the effectiveness and sustainability of interventions. Those people can afterwards become key agents identifying and training others in the same situation.

Apply a Gender Lens in the interventions to prevent further inequalities

Women are disproportionately affected by inadequate housing conditions and lack of energy access. Policies must ensure their empowerment through targeted support, improved energy access, and training in health management.

Prioritize Mental Health in Energy Poverty Interventions

Energy Poverty is closely linked to psychosocial stress and mental health disorders. Integrating mental health support—such as psychological assistance and social connection programs—into interventions can mitigate these effects, particularly for chronically affected groups. Loneliness and degrees of social support are aspects to be monitored and considered at definition of interventions.

Develop Long-Term, Crisis-Resilient Public Policies

Policy strategies should go beyond addressing immediate crises to include long-term resilience planning. This includes preparing communities for future energy crises, economic downturns, and environmental disasters through capacity-building, renewable energy adoption, and community solidarity initiatives.

Leverage Digital Technologies for Monitoring Energy Consumption and Health

Digital tools should be used to track energy consumption and health outcomes, ensuring data-driven decision-making. Implementing smart monitoring systems will enhance the efficiency and effectiveness of energy and health interventions. For instance, mobile applications can help individuals track and manage energy use at home while providing information on preventive health measures.

Conduct Health Impact Assessments for Energy, Housing, and Social Welfare Policies

Health impact assessments should be systematically incorporated into energy, housing, and social welfare policies to identify disparities and take corrective actions. Introducing health impact measurement parameters in project and program designs (ex ante and evaluation) will help mitigate health inequalities.

Action field 2: Effective Governance to implement Urban Programs

To implement the WUPs or other comprehensive multilayer, holistic and multidimensional Energy Poverty and health plans, it is necessary to create governance instruments that ensure effective coordination, participation of the various actors involved, and constant monitoring of results. These instruments should be inclusive, adaptable and facilitate collaboration between, at least, the energy, health, housing and social welfare sectors.

Governance must be built since the beginning of the planning process, with a clear and strong leadership, from the design phase to the implementation, monitoring and evaluation.

In this section, we describe the current context on governance to launch and implement a WUP or a multilayer and multidimensional plan to address Energy Poverty and its effects on health, then the needs identified regarding the current context and the requirements for these plans. Finally, we suggest a set of policy recommendations to address the needs and requirements previously identified. The focus is on governance and action at the local level.

CONTEXT

- The adoption of the Health in All Policies (HiAP) approach involves different policy domains, stakeholders, at different EU/regional/local levels.
- There are relevant differences in governance structures and capacity levels among local authorities:
    - Countries differ significantly in subnational governance structures due to the distribution of competences on policy domains among territorial levels (national, regional, local) and thus on the levels of power (and Budget) for action, as seen at the six pilot municipalities.
    - This influences the autonomy and legal frameworks with which local governments can act on the social determinants of health and on the causes of Energy Poverty. It leads to very different capacities to build strong programmes of action to tackle Energy Poverty, Social Determinants of Health and health inequalities.
    - Limited internal organizational capacity of small municipalities.
- Silos among public policies at all levels of government (EU, national and subnational levels):
    - Health policy is usually separated from other relevant policies. This hinders adoption of the necessary HiAP approach to address complex problems such as Energy Poverty.
    - At the local level, different departments or municipal services often work in the same subject but not cooperate.

- Lack of policy coherence: positive alignment of policy at all levels does not always occur despite requirements of EU and national strategies.
- Problems of accountability at executive level: holistic programmes blur political responsibility and recognition. Subnational governments have a closer view of Energy Poverty challenges, they are usually primarily responsible for implementation and more directly accountable for stakeholders, but nevertheless less able to shape the enabling environment for action.
- People in Energy Poverty and in general in poor health have lower trust, confidence and satisfaction with the health system, government and even democratic processes. But people have high trust in their individual health care providers and, in the case of WELLBASED, in those who accompanied them along the Project.

NEEDS FOR ACTION

- A multilayer and multidimensional plan needs strategic coordination of stakeholders across many sectors and across different levels of government:
    - Strategies and policies need to be crosscutting at national, regional and local levels. There is a need for partnerships that address this, integrating national and subnational action.
    - Intersectoral cooperation. Agenda and action require to be taken across organizational, sectoral and geographical boundaries.
    - Need for programmes to bring together multiple parties and channel the funding stream.
- At local level:
    - to build a strong leadership role of local governments, especially working across sectors coordinating initiatives.
    - To scale local and effective practices to higher levels (national or international)
    - To engage communities for more effective interventions
- Common knowledge and values for concerted partnership action: health equity and (energy) justice.
- Need for political commitment articulated through a formal policy commitment to empower public actors (mandate) through a municipal or local master plan.
- WUPs are implemented at local level, but the means, resources and budgets needed to implement interventions may depend, according to the social determinant to be addressed, on different sectors and levels of government.
- Strategies to empower individuals and communities to take control, such as co-creation at policy design.

- Generate more evidence on the co-benefits of interventions to address Energy Poverty, their health impact, healthcare cost savings, assessing their Social Return of Investment (SROI), to provide policymakers with reliable information about advantages and policy options.

CONCRETE ACTION POINTS

General principles for effective urban programmes (WUPs) governance

We have identified a set of general principles to consider prior to the initiation of planning aimed at establishing governance structures on a sound and accepted basis by all parties:

Establish Strong and Cross-Sectoral Leadership

Local governments must take a clear leadership role in coordinating WUP initiatives. Strong political commitment is essential to drive cross-sector collaboration between energy, health, housing, social welfare, and environmental actors.

Build a Shared Understanding of Energy Poverty and Health

Ensure that all stakeholders operate with a common definition of Energy Poverty and its health impacts. Implement training programs on the socioecological model of health determinants, following successful examples such as the training carried out by València Citizen School of Right to Energy.

Strengthen Capacity Building for Effective Governance

Invest in capacity-building initiatives that foster a common language and shared perspectives across different policy sectors. This will bridge existing gaps and promote cohesive problem-solving approaches.

Break Institutional Silos and Foster Collaboration

Create dedicated spaces for dialogue and cooperation between stakeholders to dismantle administrative and operational silos. Encouraging interdepartmental and intersectoral engagement will enhance policy coherence and impact.

Ensure Inclusive and Representative Governance Structures

Governance bodies must actively include diverse stakeholders beyond the public sector. These should encompass landlords, private tenants, ethnic minorities, vulnerable groups, NGOs, charities, energy utilities, private health providers, housing funds, and local communities to co-design effective solutions.

Map Stakeholders, Policy and Legal Frameworks to Guide Action

As first step, conduct a comprehensive mapping of key stakeholders, defining their roles, responsibilities, and capacities. Review legal frameworks at all governance levels—national, regional, and local—to ensure policy alignment and a clear scope for action

Create a WUP Intersectoral Committee on Energy Poverty and Health

Create an intersectoral and institutional committee that brings together representatives from the policy domains of energy, health, housing, social welfare and environmental sectors to coordinate actions and align them. Representatives with capacity to decide and commit resources.

This committee should:

- Align and coordinate policy actions.
- Have representatives with decision-making power and resource allocation capacity.
- facilitate cooperation between government departments and ensure that policies are coherent and complementary. Each institution should have clearly defined roles, with specific responsibilities for policy implementation.
- Make data-driven decisions based on up-to-date information on Energy Poverty, health, and social vulnerability.
- Define and share intervention strategies collectively, solutions and ways of addressing the problems, designing the plan of interventions.
- Introduce health impact monitoring mechanisms before and after interventions.
- Ensure coherence and cooperation across government policies and interventions.

Open the committee to other stakeholders from community, NGOs, housing associations, energy and housing private sector to include their voices in the search for solutions.

Include doctors, nurses, public health specialists, and other health professionals. Health professionals can contribute their experience and knowledge in identifying health risks arising from Energy Poverty, suggesting measures to mitigate these effects.

Multisectoral commission of València Municipal Strategy against Energy Poverty

Strategic framework developed by local government of the City of València to address and mitigate the effects of Energy Poverty up to 2030. A multisectoral commission has been established by the local government. This commission includes representatives from municipal services working on energy, social affairs, housing, consumer protection, and health. Its role is to review the strategy action by action, determine its feasibility and implementation, and define how each municipal service can contribute (e.g., the role of housing or health services).

Open Decision-Making Processes to Non-Governmental Actors. Create spaces for Dialogue and Citizen Participation, especially including communities and vulnerable population affected

Establish roundtables or similar spaces for dialogue and citizen participation that give a voice to communities affected by Energy Poverty, including vulnerable groups such as older people, low-income families, ethnic minorities, disabled people in the dialogue tables, ensuring that their voices are heard, and their experiences are considered. This table should be an inclusive space where people facing these problems can express their needs and opinions and actively participate in creating solutions.

Focus these spaces for debate and co-creation. Facilitate the exchange of ideas and co-creation of policies, with active participation of communities in the design and implementation of solutions.

Provide education and empowerment: Provide educational and training tools to enable people to better understand how their energy choices can affect their health and wellbeing.

Form an Interdisciplinary Advisory Council for Strategic Guidance

Establish an advisory council composed of experts in health, energy, sustainability, and public policy. This council should:

- Provide technical and strategic advice to the WUP Intersectoral Committee.
- Support implementation of plans, policy innovation and best practices.
- Conduct evaluations to assess intervention effectiveness.

with the goal of gaining a holistic view of Energy Poverty and its implications for health at implementing WUPs.

Promote Observatories as a tool for generation of knowledge on action at addressing health effects of Energy Poverty

Observatories can be a useful tool to support cross sectoral action by promoting generation of evidence-based knowledge on planning and action, monitoring, evaluation and the related data collection (see Section 5. Monitoring And Evaluation) of both Energy poverty and health. It could be a forum for discussion, share best practices and best methodologies on cross sectoral initiatives.

Action field 3: Capacity-building

CONTEXT

- Energy poverty is considered by political authorities and policymakers as an issue that requires attention; however, they lack a clear vision of how to effectively address it, what capacities need to be fostered within their organizations, and they fail to adequately consider its interconnection with health.
- Little information is available on successful experiences in reducing Energy Poverty. There is limited access to reliable data to design evidence-based policies.
- Actors who can play a very important role in the early detection of signs of Energy Poverty (social workers, health professionals) are not fully aware of their potential contribution.
- Despite the existence of public programs that provide support to people in Energy Poverty, potential recipients are not always aware of them or the resources to which they are entitled.
- Households in Energy Poverty with little or no knowledge of how energy bills work or tips to make their energy consumption more efficient, which unnecessarily increases their household energy costs.
- Social stigma associated with seeking help prevents many families from accessing resources suited for them.
- In general terms, the concept of Energy Poverty as an exclusively income-related form of poverty is widespread in society, including all types of actors, overlooking the complexity and extent of its implications in different dimensions.

NEEDS FOR ACTION

- Modernization of institutions as well as more skilled local staff are needed to implement changes recommended in the two previous sections (taking action at local level and governance).
- Identify the capacities required by policymakers to design effective Energy Poverty reduction policies.
- Disseminate good practices in the field of Energy Poverty so that they can be taken as reference by initiatives with similar goals.
- Increase and enhance the available training tools for frontline professionals to enable them to preventively detect signs of Energy Poverty in users
- Provide resources for people in households in Energy Poverty so that they are aware of how energy bills work and other resources to which they are entitled.

- Promote a holistic view on Energy Poverty so that all key actors, especially policy makers, can understand Energy Poverty in depth.

CONCRETE ACTION POINTS

1. Adopt the WHO methodology for strengthening capacities at the political level

Regarding policy-makers, the methodology proposed by World Health Organization - *Ongoing capacity strengthening for urban health* (2024) to identify and strengthen the capacities needed to design and implement an action program against Energy Poverty is a good starting point. This guide, which consists of a primer and an action guide, develops the process by which different types of organizations, including public institutions, can build capacity to respond to an urban health objective they have set themselves. To this end, the methodology is based on the self-assessment of the organizations' own capacities which, once all the phases of the process have been completed, will make it possible to improve the different types of connective capacities of the organizations (the capacity to make informed decisions, to promote policies and changes, to manage existing resources and to promote partnerships, participation and knowledge sharing).

2. Promote knowledge sharing and collaboration

In order to facilitate the knowledge of successful experiences against Energy Poverty, knowledge sharing and collaboration between actors is an important method to increase the capacities of policy makers. In this sense, some recommendations that fall under this objective are:

- the organization of events (forums, workshops) for the dissemination of good practices in the field,
- facilitate peer exchanges, workshops, and networks to enable policymakers to learn from each other's experiences.
- organize study tours, policy workshops, and fellowship programs in regions recognized for policy innovation, allowing policymakers to observe and learn from successful initiatives firsthand.
- promote access to reliable data through the creation of a digital knowledge-sharing platform where resources, tools, and case studies can be accessed and shared across departments and regions, providing updated and disaggregated information on Energy Poverty,
- encourage collaboration with universities, think tanks, and NGOs to bring fresh perspectives and evidence into policy development processes.
- establish partnerships with international organizations to enable cross-country knowledge sharing, access to global best practices, and comparative policy research.
- promote the establishment of “policy labs” within governmental bodies where policies can be tested and evaluated for impact before full implementation.

- Joint training and workshops for health professionals and policymakers and energy policymakers to raise awareness of the interconnection between Energy Poverty and public health.

3. Strategic training for frontline workers: detecting and preventing Energy Poverty with practical tools and a health-focused approach

To design and to implement training courses aimed at front-line workers to provide them with training on Energy Poverty, its mechanisms and potential ways to anticipate its incidence. Thanks to these courses, workers will be trained to recognize indicators of Energy Poverty in households and learn about how Energy Poverty affects physical and mental health. This should be organized in such a way that it is not perceived as an additional workload for frontline workers, but as an early detection tool that can help prevent Energy Poverty arising. (See best practice "*València Citizen School of Right to Energy Trainings for professionals on the detection of Energy Poverty*" in Section 6b)

4. Disseminate good practices

Promote awareness campaigns to disseminate good practices in household energy consumption and facilitate citizens' understanding of how energy bills work and other elements for greater efficiency, such as how to properly ventilate the home and its importance and promote as far as possible the replacement of appliances and heating systems with more efficient models. These campaigns should be tailored to the knowledge of the recipients since EP populations in some countries are already energy literate.

5. Improve information and advice

Establish local energy advice offices in vulnerable neighborhoods to inform the population about available energy assistance programs and the process for managing these resources.

6. Clear and accessible guidelines for people affected by Energy Poverty: key to addressing energy poverty and ensuring social justice

The development of assistance guidelines by public administrations is essential to ensure that currently existing programmes targeting individuals in situations of energy poverty effectively reach those who need them the most. These guidelines serve as a bridge between public policies and citizens, facilitating access to available resources and promoting equal opportunities. It is crucial that these guidelines are designed using clear, comprehensible, and accessible language for everyone, regardless of their educational background or technical knowledge. Simple and direct communication not only reduces access barriers but also builds trust in public institutions, ensuring that no one is excluded due to a lack of information. These guidelines should provide a detailed explanation of the eligibility requirements for accessing assistance, offering practical instructions on how to verify compliance with such criteria. Furthermore, they should

include a step-by-step guide to help potential beneficiaries, outlining the necessary documents, deadlines, and the available channels for submission, whether in person or online.

7. Community health promotion

Promote educational interventions in schools, NGOs and communities in vulnerable neighborhoods to raise awareness of the risks associated with Energy Poverty and basic coping strategies.

8. Social awareness campaigns

Generate public awareness of energy poverty and its impact, to reduce stigma and increase community support. Many individuals facing difficulties in affording adequate energy for their homes may not identify with terms like 'energy poverty.' Instead, they often perceive their situation as simply managing high bills, dealing with an inefficient home, or struggling to stay warm in winter or cool in summer. For this reason, direct communication with those affected should focus on practical concerns—such as reducing costs, improving comfort, or accessing support—rather than using technical or policy-driven language that may not resonate with their experiences.

Inspiring practice **Communication Campaign in València to create awareness on the Right to Energy.**
During the Energy Poverty week, the message “We all have the Right to Energy” was deployed in city bus stops and public displays, as well as in social networks. Equally, an event was organized in this week to show the work done on Energy Poverty issues by local stakeholders, and an exhibition of pictures made by WELLBASED participants was also launched.

While policy-makers need to develop a comprehensive and technical vision to design effective policies, social workers and health professionals require specific tools to address this issue on a daily basis. Finally, vulnerable households need to be empowered through energy education and accessible resources and programs.

Action field 4: Monitoring and Evaluation

CONTEXT

- Monitoring data in urban strategies is crucial for diagnosing issues, setting local targets and programs, and evaluating their effectiveness. However, there remains a significant gap in the availability of health and energy-related databases at the local level.
- Furthermore, while the connection between health and Energy Poverty is well-established, current urban indicator systems seldom integrate data from these two areas.
- At the EU level, some progress has been made to promote the use of national multidimensional indicators to °on tools such as the SILC and EUROSTAT instruments. Additionally, certain health indicators are incorporated within climate or climate-and-health observatories, with a particular focus on metrics such as mortality linked to extreme weather events and exposure to high temperatures[5].

NEEDS FOR ACTION

- There is a need to strengthen the monitoring of data on urban health and Energy Poverty, among other social determinants of health, as part of a broader vision for urban health (WHO, 2023).
- At the local level, evidence on urban health and Energy Poverty should help to evaluate interventions by highlighting intra-urban differences and setting priorities (WHO, 2023).
- At EU level, a clear and updated picture of the status of Energy Poverty and the main health problems should be available for each Member State.

CONCRETE ACTION POINTS

1. Establish Energy Poverty Observatories with a Health focus.

Promote transnational, national, regional, and local observatories to monitor Energy Poverty and its impact on health, or alternatively, develop health observatories that incorporate Energy Poverty within a holistic approach to social determinants of health.

2. Use urban platforms to visualize localized data.

Develop urban platforms to analyze energy, socio-economic, and health data at the district or neighborhood level, helping to identify intervention areas by correlating parameters like Energy Poverty, building energy

[5] For example, the indicators from the European Climate and Health Observatory European Climate and Health Observatory

efficiency, and health conditions such as chronic respiratory diseases. Try to bring data together from already existing databases, where possible.

3. Disaggregate data to capture vulnerable population groups.

Ensure data collection is broken down to reflect the experiences of specific groups disproportionately affected by Energy Poverty, such as women, children, older adults, and people with disabilities.

4. Select meaningful health impact indicators for Energy Poverty.

Use indicators from resources like the EPAH dashboard (e.g., causes of death, excess winter mortality, chronic diseases) or the EU Climate and Health Observatory (e.g., vulnerability to heatwaves, including older people) to monitor health impacts effectively.

5. Foster cross-sector collaboration to develop indicator systems.

Engage professionals from energy, housing, and health sectors to co-design holistic strategies, leveraging shared expertise and stakeholder input during the establishment of indicator systems.

6. Measure intervention outcomes with ex-ante and ex-post indicators.

In Energy Poverty interventions, especially home renovations, incorporate comfort and wellbeing indicators (e.g., temperature, humidity, sleep quality) and link funding schemes to health and wellbeing metrics.

Energy poverty interventions should not be assessed solely on energy and Green Houses Gases savings. Some interventions may increase energy use due to the rebound effect (e.g. installing a LED bulb where the old conventional was broken or installing a heating system in a household without it) but still bring significant social and health benefits, such as improved well-being and indoor comfort. Expanding monitoring frameworks to include these broader impacts is essential to ensure that valuable interventions are not overlooked in the fight against energy poverty.

7. Capture broader wellbeing improvements in energy assistance programs.

When providing energy assistance, include indicators that measure community support benefits, reductions in loneliness, and increased personal agency to assess broader wellbeing impacts (see “Lessons learnt for Research” in Resources - WELLBASED).

8. Create platforms for professionals to share information

Establish the necessary platforms and other mechanisms to allow sharing information between professionals from different fields (GPs, social workers, energy coaches, etc.) to identify people at risk of Energy Poverty and refer them to the appropriate resources.

9. Strengthen Energy Poverty data collection at the EU level.

Encourage comprehensive data collection across all Member States under a common EU framework within National Energy and Climate Plans, Social Climate Plans, and Energy Poverty Strategies, with a focus on health impact indicators.

10. Regularly update and expand EPAH indicators.

Ensure EPAH indicators are up-to-date and consider adding new metrics, such as excess summer mortality (for summer Energy Poverty), mental health impacts (e.g., depression, anxiety), and social parameters (e.g., loneliness).

11. Integrate health and Energy Poverty monitoring with climate challenges.

Address Energy Poverty and health monitoring within the broader context of climate challenges, tracking impacts like heat islands, pollution and extreme events, while assessing improvements from energy transition measures such as renewable energy adoption, energy-efficient buildings, energy communities, climate shelters, etc.

12. Community engagement and empowerment, as the process by which communities develop collective capabilities in the pursuit of social justice, should also be monitored and evaluated, as well as power dynamics in community settings which can restrict this capabilities development (Popay, J., 2021)

Action field 5: Funding

CONTEXT

- The Commission Recommendation of Energy Poverty highlights that households affected by Energy Poverty have limited access to commercial loans, they face barriers to access finance for investments, and they therefore these households need public financial support. This can be either a direct upfront subsidy, a direct payment of the energy efficiency or renovation works, a public loan that allows households to pay back the public investment as they save on energy bills, zero-to-low interest loans or any other innovative way of financing to help them finance energy renovation works. It is important to appreciate, however, that many people on low incomes may be in debt, unwilling to take on more debt or adverse to going into debt. They may therefore be unwilling to take on loans even if these lead to savings on energy bills.

- Political will is now substantial and the available funding has never been higher.

- Political will has been born and the available funding has never been higher. Within the framework of "Renovation Wave Strategy" EU Member States mobilize strategies and wish to use them as mechanism to tackle Energy Poverty and improving housing conditions for all households. New sources, such as Social Climate Fund and Recovery and Resilience Facility can be used to finance these mechanisms. According to the Energy Efficiency Directive, EU Member States *"shall establish and achieve a share of the required amount of cumulative end-use energy savings among people affected by Energy Poverty, vulnerable customers, people in low-income households and, where applicable, people living in social housing".*

- The EU4Health Programme provides unprecedented financial support in the field of health, however it is not directly focusing on Energy Poverty-related health issues.

- Most of the existing policies and practices are focusing on low-cost activities such as subsidizing energy costs, offering consultation regarding the improvement of the efficiency of the appliances which suggests that the available funding is still insufficient in most of the countries.

- Existing practices and tools are either part of energy or social policies; health aspects in general are not taken into consideration.

- However, there are good practices where health aspects are integrated in. But even the good practices that among others aim to improve the health of those affected by Energy Poverty provide little information in their evaluations on the health impacts of their programmes.

NEEDS FOR ACTION

- Attention should be drawn to the fact that energy efficiency improvements in energy poor households have a positive impact on health in addition to energy savings, cost of living and environmental impacts and efforts should be made to assess and quantify this impact. Quantifying the positive changes in people's health resulting from reducing Energy Poverty could make it attractive to policy makers to create such measures.

- There is a need to establish additional mechanisms and programmes to address the health impacts of Energy Poverty (interventions which are made with the aim of reducing the increased health expenditure of energy-poor households due to Energy Poverty, or energy efficiency interventions which are implemented with the aim of improving the health condition of the occupants of the building while reliable information on this impact is collected as well.)

- It is important to identify other financial measures taken by decision makers that do offset the potential benefits of measures aimed to tackle Energy Poverty and health which requires close cooperation between the relevant policy domains (social, energy, health and finance policies).

CONCRETE ACTION POINTS[6]

Integrate the impact of Energy Poverty on health as a key criterion in distribution and implementation of European funds related to energy transition, such as the European Social Fund, the Just Transition Fund or the Social Climate Fund.

Conditional access to funds: Ensure that EU-funded projects in the field of energy and housing include public health components, such as improving air quality, reducing exposure to extreme temperatures and promoting healthy environments.

Dedicated funds for Energy Poverty and health: Create dedicated funds for projects that address Energy Poverty and health together, especially in rural areas and vulnerable communities.

Introduce Energy Poverty among the topics to be addressed through investment tools and EU funding programs, such as INTERREG.

Policy makers should explore innovative tools for financing Energy Poverty solutions. Policy makers are invited to consider two innovative tools—Urban Financial Metabolism (UFM) and Social Impact Bonds (SIBs)—presented in Deliverable 5.1: *Existing and Alternative Financing Models*. Both are described at the end of this section).

Use Urban Financial Metabolism (UFM) to optimize Energy Poverty investments. The Urban Financial Metabolism (UFM) is a decision-support tool that calculates the return on investment for various

[6] Please consider that this section is focused on the conclusions of Deliverable 5.1. Existing and alternative financing models of WELLBASED project, based on the analysis of Social Impact Bonds and Urban Financial Metabolism.

interventions, including the cost of inaction. It can incentivize targeted, joint investments in addressing Energy Poverty. The UFM model is replicable in new cities or neighbourhoods when a data-gathering protocol and the necessary data are available.

URBAN FINANCIAL METABOLISM (UFM)
The UFM is a methodology which aims to facilitate policy makers and private partners with qualitative and quantitative insights in the costs and benefits of interventions that help to avert energy poverty.
The model analyses cash that flows in to, out of, and through a neighbourhood. This analysis helps to identify indirect impacts or costs and benefits as a result of doing nothing or investing in certain interventions. This also includes the second and third order impact in other domains. In other words, the model can be utilised to answer the question: what is the (indirect) return on investment of different interventions? Correspondingly, policy makers and private partners can make well-argued decisions on interventions and collaborate across various domains.

Adopt Social Impact Bonds (SIBs) to attract private funding for Energy Poverty solutions. Social Impact Bonds (SIBs) are innovative tools that mobilize private funding to combat Energy Poverty while considering health and social outcomes. Pilot calculations based on energy savings demonstrate that investments could yield returns after a few years through public administration savings. Local authorities and policymakers should explore SIBs as an alternative instrument to finance large-scale interventions that improve citizens' wellbeing.

SOCIAL IMPACT BONDS (SIBs)
Social Impact Bond is an innovative financing mechanism in which governments or commissioners enter into agreements with social service providers, such as social enterprises or non-profit organizations and investors to pay for the delivery of pre-defined social outcomes" (Social Finance, 2011).
In Social Impact Bonds, private investors provide capital to launch or expand innovative social services that provide a public good. If the expected social benefits are achieved at the end of a given period, investors receive back their capital plus a rate of return (negotiated with public authorities and varying with the level of results achieved). Unlike traditional contracts, the commissioner (usually a public authority) only pays for the service if the expected results are achieved.

Incorporate health and wellbeing metrics in financing mechanisms for Energy Poverty. Any financing approach for addressing Energy Poverty should include health and wellbeing indicators to evaluate the success of interventions (see the section *Monitoring and Evaluation* above).

Ensure government support measures address Energy Poverty without compromising health and environment. Government-provided support measures, such as delivering non-renewable fuel for free, may alleviate Energy Poverty but can lead to negative health and environmental impacts due to air pollution and other risks. Policymakers should prioritize alternative solutions, such as clean energy subsidies or efficient heating systems, to address Energy Poverty while safeguarding public health.

PART III.

From policy to practice

6. WUPs Energy Poverty interventions towards better health

6.a. Tips and lessons learnt in interventions

In this section, different recommendations are shared about interventions to fight Energy Poverty, including health aspects, based on the pilot experiences in WELLBASED project.

1. Social energy audits

DESCRIPTION

A systematic energy analysis of the home and the household's energy use by trained technicians which identifies opportunities for efficiency, health benefits, and energy bills cost reduction. It addresses energy losses, appliance use, bill optimization, available discounts, and debt management, empowering households to save energy, lower costs, and improve comfort.

USEFUL TIPS

- **Conduct audits on-site when possible**: Energy coaches should conduct audits at users' homes to better understand their housing conditions, their daily energy usages and appliances and their specific situations. If possible, it is highly recommended to install the energy efficiency kit during the same visit as it allows a more accurate installation of the kit elements by detecting the needs of both the household and the property.
- It is also recommended to arrange the visit when all household members – or as many as possible – are present in the house so that everyone can raise questions and make better use of the tips and learnings provided.
- Prepare training materials to deliver (both digital and physical) with information about aids, efficiency tips, general advice...

Challenges in knowledge transfer

- **Energy is seen as overly technical**: Users often see energy as highly technical and complex. Clear, user-friendly recommendations with practical examples tailored to each home and profile are essential.
- **Language barriers**: Be mindful of potential language challenges among migrant communities.

- Do not rely on providing information through on-line channels only – many people on low incomes do not access information this way, e.g. because of no or poor access to the internet or lack of IT skills.
- **Difficulty recognizing energy tariffs**: Users may need help identifying their energy tariff through their most recent bills.
- **Limited access to reliable information:** Vulnerable groups (e.g., older adults, migrants, single-parent families) might lack information about social tariffs, grants, or price changes. Clarify the distinction between government and energy companies to build trust and counter fake news or fears of scams.
- **Adapt to local conditions**: Tailor information to local contexts, including climate, building materials, and humidity levels. Consider summer Energy Poverty assessments if relevant.
- **Rental housing challenges**: Renters may face constraints in making significant upgrades or renovations. Adjust advice accordingly.
- **Help manage energy debts**: Assist users in setting up payment plans to avoid service cuts and recommend prioritizing older bills to reduce extra charges. Recognise that people with energy debts often have other debts and will therefore need holistic debt management advice. Inform about the options that the Municipal Social Services or energy suppliers can offer to vulnerable households for special protection to avoid cuts.
- **Empower users to seek help**: Emphasize that asking for help or having debts is not shameful. Highlight external factors beyond their control, such as inefficient buildings, climate conditions, opacity of the energy system or fluctuating energy prices.

Energy coaches

- **Include diverse and experienced professionals**: The team should consist of energy coaches and social workers experienced and trained in working with vulnerable households.
- **Be approachable**, flexible with communication (phone, messaging services), care listener, empathetic, trustworthy. Help create a safe space for users to feel confident to share their concerns, build a relationship of trust.
- **Ensure cultural and gender sensitivity**: When conducting home audits, include both male and female coaches to address potential gender-related barriers in certain cultural contexts.
- **Establish emergency protocols**: Collaborate with housing and health services and set up a protocol for extreme cases. Report unsuccessful cases to the appropriate authorities. Refer cases when needed (Social Services, Energy Office, Healthcare centers, other municipal services).

Support materials

- **Provide practical guides**: After the audit, leave step-by-step guides and leaflets covering energy efficiency, bill optimization, and market basics. Offer a contact point for further assistance. Prepare it both digital and physical to ensure that people can share it among their contacts, so it reaches as many people as possible
- **Distribute information widely**: Use municipal websites, public campaigns, and local NGOs or grassroots organizations to spread awareness.
- **Ensure GDPR compliance**: Obtain user consent for data collection, particularly for home visits and explain how it safeguards their rights and privacy..

Common Recommendations Shared During Audits

- **Optimize ventilation**: Suggest proper ventilation strategies based on home orientation and seasonal changes to improve indoor air quality and temperature. Cross-ventilate if possible.
- **Identify and adapt energy tariffs**: Help users understand their tariff type and optimize energy use during cheaper hours. Provide tools or resources for tracking costs.
- **Choose energy-efficient appliances**: Recommend using efficient devices (advices will vary in each country, but to name a few: using central heating when available rather than single room heaters; using oil-based electric heaters rather than usual electric ones for long heating periods; fans or ceiling fans rather than air conditioning when possible, etc). When air conditioning is needed, regulate the temperature and use low consumption modes such as de-humidifier program.
- **Save energy while washing and drying**: Encourage users to wash clothes in cold water or lower temperature available in washing machines, use shorter cycles, and air-dry when possible.
- **Adjust water heater settings**: Advise lowering water heater temperatures, especially during summer (although considering a minimum temperature to prevent legionnaires diseases).
- **Limit excessive appliance use**: Suggest alternatives like using radios instead of TVs for older adults who leave devices running for long periods.
- **Manage additional freezers**: Highlight the energy costs of extra freezers, common in some cultural practices, and suggest smaller, more efficient models.
- **Tackle summer Energy Poverty**: Recommend strategies like cross-ventilation (during the first and last hours of the day), blinds or thermal stickers on windows, the use of fans over the air conditioning and specific plants to lower indoor temperatures and humidity.
- **Improve efficiency of Illumination in the house:** check for old lightbulbs with high consumption (40-60kw) and advise changing them into LED bulbs (7-12kw)

- **Use of power meter**: check together with the user the appliances that have energy consumption even when they are turned off. This facilitates fighting against stand-by modes and a deeper knowledge of the home's appliances and functioning.

Health focus

- **Integrate health into the audit**: Include questions about physical and mental health in the audit questionnaire and refer users to a GP if needed. Include health (e.g. frequency of visits to GP, sleep quality, anxiety/depression levels, blood pressure, cardiovascular or respiratory diseases, frailty conditions on older adults, gender inequalities, presence of children or disabled people)
- **Conduct basic health checks:** Perform simple measurements (e.g., blood pressure, heart rate) during home visits and guide users to health services when needed.
- **Promote healthy habits**: Provide guidelines on ventilation, healthy lighting, and nutrition to enhance overall wellbeing.
- **Adapt advice to user habits**: Tailor health recommendations based on users' routines and coping strategies.
- **Train energy coaches in health:** provide basic guidelines to the energy coaches to detect when values or measures could be worrying and advise a visit to the specialist accordingly. Develop a protocol to refer those cases.

COST (per household)[7]

- The social energy audits conducted in WELLBASED, including energy bills optimization, energy efficiency advice and energy audit at home have an estimated cost of 230 € per household. This cost includes:
    - Staff cost: two superior technicians for 1.30h of intervention
    - Planning and preparation time: reaching the participant, appointment and interview, phone calls (3h per household)
    - Leaflets and guides: 1-2 euros/guide approximately, depending on the needs. Includes: Social Bonus leaflet, Good practices at home leaflet, Energy efficiency at home leaflet.

[7] We use Spanish prices as a reference for estimating intervention costs.

Examples of materials for socio energy audits:

- Good practices for the use of energy (Valencia Clima i Energía, SP): Buenas prácticas para el uso de la energía – OFICINA DE L'ENERGIA – Dret Energia
- Social Tariff (Valencia Clima i Energía, SP): https://climaienergia.com/wp-content/uploads/2024/01/Foll_info_BonoSoc.pdf
- Good practices (Valencia Clima i Energía, SP): https://climaienergia.com/wp-content/uploads/2023/06/buenas-practicas.pdf
- Advices for extreme heat (Valencia Clima i Energía, SP): https://climaienergia.com/wp-content/uploads/2024/06/0.-RecomendacionesCalorOE-Cas-ACT.pdf
- Guide for home savings (Valencia Clima i Energía, SP): https://climaienergia.com/wp-content/uploads/2023/06/guia-de-ahorro.pdf
- Home energy advice leaflets (Center for Sustainable Energy, UK): https://www.cse.org.uk/resource/home-energy-advice-leaflets/
- Quick tips to save energy (Energy Saving Trust, UK): Quick tips to save energy at home - Energy Saving Trust

2. Energy Efficiency Kit: Installation and Use

DESCRIPTION

Collection of tools and devices designed to help households reduce energy consumption and lower utility costs. It can contain:

- 2 LED lighbulbs
- 1 power meter
- 1 time programmer
- 1 power strip
- Weather stripes (normally for 2-3 windows) and 1 door weather stripe (adaptative according to necessities)
- Summer energy efficiency items: fan, plants

USEFUL TIPS

- **Install kits during audits**: Energy coaches should install the energy efficiency kit during the home energy audit and provide customized energy-saving advice. This is more effective than merely delivering the kit. Users can also identify the needs and make the most of the kit.
- **Explain kit components**: Some items, like timers and weatherstrips, may require instructions on proper use and placement.
- **Explore lending schemes**: Consider lending energy efficiency tools (e.g., power meters) through libraries or community centers to allow users to assess appliance consumption at home. An inspiring example of this is the eco-library *Óbuda Platán Library*, maintained by the Municipality of Óbuda-Békásmegyer in Budapest, Hungary (Óbudai Platán Könyvtár).
- **Adapt to each household:** adapt language and explanations to each household previous knowledge. If they can use IT and technologies, energy coaches can show them apps and digital tools to monitor consumption and check the effectiveness of the kit installed.

Issues solved with the Energy Efficiency Kit

- **Reduce phantom energy use**: Measure the standby energy consumption of appliances (TV, microwave, coffee machine) and estimate costs. Install power strips and remind users to switch them off when not in use.
- **Switch to LED lighting**: Assess lighting and replace traditional bulbs with LED alternatives.
- **Optimize water heater schedules**: Use timers to align water heater operation with cheaper hours on regulated tariffs.
- **Control WiFi router energy use through the plug time programmer**: Suggest timers for turning off routers overnight or during extended absences.

Health focus

- **Promote healthy habits:** Include a guide in the kit with tips on ventilation, lighting, and healthy living (e.g., recipes).
- **Monitor home comfort:** Provide sensors with displays to help users track comfort parameters such as humidity, air quality, and exposure to unhealthy conditions, such as cold, damp and mould.

COST

- The Energy Efficiency Kit has an average cost of 40-80 euros/kit.

3. Group trainings on Energy and Health issues

DESCRIPTION

Regular group trainings of local communities, organised by municipalities in collaboration with grassroot associations, on energy and health-related topics—such as energy efficiency, bill optimization, household budgeting, ventilation, mould prevention, how to deal with heat waves, preparation for winter, and the health impacts of extreme temperatures. If held on a regular basis (e.g. monthly), they can strengthen community bonds and create spaces for mutual support.

USEFUL TIPS

Planning and Organization

- **Design a diverse program**: Plan sessions with varied speakers and topics, incorporating participants' preferences to ensure engagement.
- **Build trust with participants**: Ensure at least one consistent, trusted person is present in every session.
- **Enhance attendance with incentives**: Provide healthy snacks and drinks to attract participants.
- **Convenient locations and times**: Organize sessions near participants' residences and schedule them outside typical working hours.
- **Address accessibility challenges**: Enable transportation services for groups with mobility issues, single parents, or other vulnerable individuals.
- Welcome family, kids, carers or friends: facilitate a space for kids so families and single parent families can attend. Also, friends, carers and neighbors are welcome as support companions.

Participant Engagement

- **Use stigma-free communication to recruit participants**: Frame information campaigns for group trainings around the right to energy and healthy homes instead of focusing on Energy Poverty to reduce stigma and highlight structural causes.
- **Accommodate family needs**: Provide childcare spaces to allow parents to participate fully.
- **Use clear, relatable language**: Incorporate examples, practical cases, and everyday experiences to explain concepts effectively.
- **Foster a safe and welcoming environment**: The facilitator plays a vital role in encouraging open dialogue and collaboration.
- **Simplify communication**: Use accessible group channels (e.g., phone messaging apps) to share reminders, information, and updates with participants.

- **Identify community leaders within the neighborhood** who are already trusted by the community: Engage previously with key persons who can help build credibility, ensure effective communication about the event, spread the word and encourage participation.
- **Offer free snacks or lunch during the sessions.** It will enhance participation and engagement and it is a nice moment for participants to connect and build relationships one with each other.

Activities and Programs

- **Incorporate engaging activities**: Include trips to energy efficiency centers, 'green homes' schemes, family activities, escape rooms with energy-saving themes, or creative workshops (e.g., photovoice art projects). Ask participants for ideas to tailor activities to their interests.
- **Encourage peer-to-peer learning**: Empower participants to become trainers in their communities, fostering a network of volunteers to assist others, such as visiting vulnerable individuals with disabilities.
- **Protect data and privacy**: Ensure confidentiality, and if using photos or videos for communication, obtain informed consent at the start of each session.

Health focus

- **Promote health awareness**: Organize discussions on the impact of extreme temperatures, dealing with mold, ventilation, mental health, and healthy nutrition.
- **Support community health**: Offer activities like collective health screenings, free sports classes in green spaces, or workshops on improving mental and physical wellbeing
- **Encourage mutual support**: Strengthen community resilience and reduce unwanted loneliness by fostering engagement and collaboration.
- **Involve professionals**: Include psychologists, therapists, and health experts in the program to address diverse health-related concerns.

COST (per SESSION)[8]:

- A 2h session with an expert and two group facilitators has an estimated cost of around 300€, including 50€ of food and drinks served during the session for participants. Therefore a program of 10 sessions would cost around 3000€.

[8] Spanish prices are taken as reference point for estimating intervention costs.

4. Home Retrofitting: Communication, Coordination, and Health Considerations

DESCRIPTION

Buildings upgraded to enhance energy efficiency, reduce consumption, and improve comfort and health, often through measures like insulation, efficient heating systems, and appliance upgrades.

In the WELLBASED project, the pilot cities of Edirne (Turkey) and Leeds (United Kingdom) implemented properties' improvements. More concretely, Edirne's urban program introduced a new heating system, replacing old single stoves with a more efficient setup consisting of a stove and radiators for whole-home heating, along with improved insulation. Leeds, in turn, installed insulated cladding to the outside of the buildings and connected the properties to the district heat network.

USEFUL TIPS

Communication and Coordination

- **Establish clear communication**: Ensure residents are well-informed about the work schedule, expected duration, and any disruptions.
- **Plan for potential delays**: Understand that exact timelines are hard to predict and may be affected by factors like elections or parallel projects.
- **Minimize disruptions**: Take steps to avoid noise, dirt, blocked parking, and other inconveniences that could affect tenants.
- **Address potential mold issues**: Insulation work may cause moisture buildup; plan for mold prevention measures.
- **Ensure easy-to-operate heaters**: Ensure that renovated heating systems are user-friendly and efficient.
- **Design for larger households**: Plan rehabilitations with the needs of large families in mind.
- **Coordinate technical works**: When multiple projects (e.g., insulation and heating systems) run in parallel, ensure they are properly coordinated to prevent complications, such as the impact of insulation on heating system calculations.
- **Modernization of household appliances**. Focus on those that do not require construction work or involve legal complexities
- Provide advice on new equipment; this may often require follow up advice several months after the upgrading has been completed

Health Focus

- **Evaluate health impacts**: Assess and follow up on the health effects of rehabilitation interventions, considering comfort parameters before and after the work.
- **Track success through health indicators**: Establish indicators linked to wellbeing and health to measure the success of interventions.
- **Include wellbeing indicators in funding**: Introduce wellbeing and health-related criteria in funding programs to ensure holistic benefits.

COST

The cost of interventions varies significantly, from simple upgrades like window renovation to major renovations such as full building insulation or replacing heating system. Some examples of measures and estimated costs are presented below, based on the information provided by two pilot programs of WELLBASED: Valencia, in Spain; Leeds in the UK; and Edirne, in Turkey).

A significant cost variation can be observed for the same interventions across different pilot sites, influenced by the nature and scale of the intervention, the size of properties, as well as the varying cost of living in each country.

Table 5. Estimated costs of home improvements' measures included in the Valencia pilot program, in Spain (data from Valencia Clima i Energia, 2023-2024)

Measure	Estimated cost (per household)
Repair of 3 windows. Installation of 2 ceiling fans. Refrigerator replacement. Installation of a light point. Kitchen faucet replacement.	4.800 €
Replacement of master bedroom window. Installation of ceiling fan. Refrigerator replacement.	3.000 €
Replacement of gas water heater with a 50-liter electric water heater.	350 €

Table 6. Estimated costs of home improvements' measures included in the Leeds' pilot program, in UK (data from Municipality of Leeds, 2022-2024)

Measure	Estimated cost (per household)
Insulated exterior cladding , windows replacement and connection to district heating	31.500 €
Installation of home sensors data	5225 €

Table 7. Estimated costs of home improvements' measures included in Edirne's pilot program, in Turkey (data from Municipality of Edirne, 2022-2024)

Measure	Estimated cost (per household)
Heating system replacement: replacing old single stoves with a more efficient setup consisting of a stove and radiators for whole-home heating	530 €
Home insulation	115 €
Windows replacement	60 €

As an additional source of information, the table below shows the cost estimation of some common building property improvements and their payback time, provided by Energy Saving Trust (UK).

Table 8. Estimated costs of common home improvements' measures in the UK and payback time (data from Energy Saving Trust, UK, 2024)

Measure	Estimated cost (per household)	Simple payback (years)
Upgrading a boiler from D with all controls to A with all controls	£3,500	29
Upgrading a boiler from G with all controls to A with all controls	£3,500	14
Installing an ASHP from an average heating system (medium performing heat pump)	£11,000	92
Installing a 3.5kWp PV system in London with the occupants home all day	£6,100	17
Installing a 3.5kWp PV system in Stirling with the occupants out till 6pm	£6,100	44

6.b. Best practices

This section presents a selection of inspirational experiences developed within WELLBASED at some of the pilots. They have been selected for their positive impact on participants, their novelty compared to more generalized or more costly to implement practices such as high cost 'hard interventions' and, therefore, their potential for replicability.

The inspirational practices are[9]:

Layer 2. Social and Community networks
VALÈNCIA CITIZEN SCHOOL OF RIGHT TO ENERGY: Regular community meetings: "Berenars Energètics"
VALÈNCIA CITIZEN SCHOOL OF RIGHT TO ENERGY: Trainings for professionals on the detection of Energy Poverty
ENERGY POVERTY DETECTION AND REFERRAL PROTOCOL FOR HEALTH PROFESSIONALS (VALÈNCIA)

Layer 4. Social, economic and environmental conditions
VALÈNCIA MUNICIPAL STRATEGY AGAINST ENERGY POVERTY

[9] The decision to select best practices exclusively from a single pilot is based on the need for consistency, coherence, and replicability. By focusing on one pilot, we ensure that the identified practices have been implemented under the same contextual conditions, operational framework, and stakeholder dynamics. This uniformity allows for a more reliable evaluation of their impact and scalability.

LAYER 2. Social and Community networks
CITIZEN SCHOOL OF RIGHT TO ENERGY: Regular community meetings: "Berenars Energètics"
PILOT: València (Spain)
Description
Monthly gatherings included in the "Citizen School of Right to Energy" program. These meetings were targeted to participants of València pilot in situation of Energy Poverty. Their profile was diverse and vulnerable: low income people, single mothers, older adults, migrants, some young people with precarious jobs. These have been informal meetings (like the "Energy Cafe" initiatives) where participants have been invited to attend at the local Energy Office periodically once per month until June 2023, and then it was increased to 2 monthly sessions. The topics discussed during the sessions were: - Domestic energy, - Energy efficiency, - Bill optimisation - Health promotion: effects of Energy Poverty on health, selfcare and physical activity, healthy nutrition habits and economic food basket, techniques to improve sleep quality and mental wellbeing. - Renewable energy and climate change - an Art workshop of 3 sessions that ended in photo exhibition. - 2 extra sessions related to healthy cooking techniques were organized in collaboration with the university of València and local food producers. The approach was on capacity building and empowerment of people to increase the feeling of control over one's own life, and to facilitate behavioural changes towards healthier patterns. The sessions were handled by different experts, depending on the topic. The sessions were organized in 15-20 minutes of theoretical content and followed by a participatory methodology with the technical assistance of a professional facilitator. During the participatory part, participants shared their life experiences and feelings on the topic addressed and listened to others'. Learn from others and give mutual support was the aim of the sessions. It was considered a free and secure space. The artistic workshop consisted of 3 different sessions with the objective of creating an exposition made by pictures taken by and collages done by participants. It was exhibited in Las Naves building during the Right to Energy week in February 2024.
Potential for impact on health and wellbeing

Good potential to increase wellbeing by improving health habits. Some results from the evaluation process highlight participants' improved knowledge and awareness in the following areas:

On Energy topics:

- 63% of attendees understand the electricity bill
- 92% believe they can save with new energy efficiency knowledge

On Health promotion:

- 85% attendees have incorporated healthy habits into their daily lives
- 90% have improved their diet by being more conscious
- 95% detected physical and emotional improvements through the practices learned in the workshops.
- 93% of participants have incorporated healthy recipes into their diet.
- 93% know better how to preserve food and have made savings in their shopping baskets
- On the arts workshop:
- 100% of participants have felt comfortable expressing themselves through art.
- 100% helped them to better understand the concept of energy vulnerability

Replicability

València municipal Energy Office created this School in the framework of WELLBASED project and it will continue to offer this program and scale it to the new offices opened in other districts of the city.
Easy to replicate.

Other information

25 meetings organised in a period of 16 months
Attendance: 62 people over a total of 144 participants of the València pilot WUP, mainly women

HEERLEN HEALTH CAFÉS

There was another similar experience in Heerlen, called "Health Cafes My Positive Health". It is a conversational tool that encourages individuals to reflect on their overall health, identify desired changes, and determine the support they need from their environment. Participants use the "spider's web" tool to assess various aspects of their life by assigning numbers to different areas. This visual representation helps highlight which areas need attention, fostering awareness and prompting individuals to take action or seek help as needed.
After each Health Café, a newsletter was created summarizing the information discussed during the meeting. Two sessions were organised.

LAYER 2. Social and Community networks
CITIZEN SCHOOL OF RIGHT TO ENERGY: Trainings for professionals on the detection of Energy Poverty
PILOT: València (Spain)
Description

In the framework of the Citizen School of Right to Energy, these trainings were targeted to professional groups that can play a key role in the identification of Energy Poverty.

The objective was to identify, make visible and combat Energy Poverty by creating networks of professionals, entities and people capable of detecting the problem, designing solutions, referring to the most appropriate existing resources and creating tools to combat it, due to their proximity and closeness to people.

The training was adapted to different profiles: socio-health staff, teachers, social workers, third sector entities (associations, NGOs), public services.

The sessions or workshops had a shared core and common topic, providing basic knowledge on:

- Energy Poverty/vulnerability,
- causes and consequences,
- addressing especially the impact on people's physical and mental health and applying a look at the determinants of health and health inequalities raised by the problem,
- also, all the available resources from the energy offices and the different initiatives in the city of València, to raise awareness of existing resources to address situations of Energy Poverty.

Part of the sessions had specific content created and adapted to the professional field of each audience, taking into consideration which signs and questions professionals can make among their users to identify Energy Poverty and act consequently (protocol, general information, the role of Social Services and the Municipal OSS...).

There were different groups of trainings for different professionals:

- professionals from primary schools, high schools and the regional ministry of education
- NGOs working with vulnerable people (migrants, ethnic minorities, children in risk of poverty, etc)
- Public services: social services, social workers, regional and municipal civil servants form different public departments.
- Healthcare professionals: GPs, nurses, pediatrics, public health technicians.

- Community networks: Basic Zones Health Councils and neighbourhood associations, community stakeholders and leaders.
Potential for impact on health and wellbeing
High potential as it allows to increase the awareness on the problem and facilitates the identification of cases. A protocol for detection and referral was defined in one of the sessions with health and social care professionals. It was also adapted to detection from community. Opportunity to work together with the community (at community level/inclusion in community strategies and interventions) and expand the impact.
Replicability
The contents and materials of the different sessions are available in Spanish, easily translated to other languages. They are ready for direct replication.
Other information
Some sessions were held online to facilitate the attendance, and some were carried out in the venues of the professionals. Attendance: 69 professionals to 7 training courses

LAYER 2. Social and Community networks

ENERGY POVERTY DETECTION AND REFERRAL PROTOCOL FOR HEALTH PROFESSIONALS

PILOT: València (Spain)

Description

The protocol was developed during the final session of the capacity-building workshop held with healthcare professionals and community leaders in May 2024. The workshop included previous sessions on Energy Poverty, effects on health and wellbeing, existing scientific evidence on these effects, WELLBASED Project, pilot intervention in València, WELLBASED study, benchmarking of experiences of social prescribing and Energy Poverty in other countries and resources from social services and the municipal energy office available for referral in València.

In this final session participants jointly identified data, variables, signals, questions to do to patients, as well as facilitators and barriers to implement this protocol.

The protocol has these stages:

1. **Identification**

The objective of this stage is to determine whether the patient is living in conditions that could be related to Energy Poverty and how this is affecting their health. It can be done through:

- direct observation at patient's household
- analysis of the Electronic Health Record (EHR)
- questions for registration forms or other similar instruments
- conversation during the visit at health centre with the objective of finding out about determinants, living and housing conditions

Some examples are collected int he boxes below for each case.

2. **Early intervention**

If it is detected that the patient might be in Energy Poverty, appropriate action should be taken, such as referring the patient to social services or activating interventions to improve household conditions.

Depending on the detected needs, referral can be to social services, energy services or programs, social support or psychological support.

It is important that information on resources and tips for energy efficiency are accessible with brochures or posters at the health centre. Healthcare professionals should be informed and distribute these information materials to those people identified.

Link with community networks is also key for social support and other resources from the community.

3. Follow-up (if necessary)

It is important to follow up to ensure that the person is receiving the necessary help, and that health and housing conditions are improving.

DIRECT OBSERVATION AT HOME	DATA TO LOOK AT EHR	CONVERSATION/QUESTIONS
Low income: household has problems paying energy and/or water bills Cold in winter or very hot in summer Old housing that has not been renovated (e.g. dilapidated windows or uninsulated buildings). Inefficient or non-existent heating or cooling systems. Lack of insulation Household living most of the time in one room or area of the house Presence of condensation, dampness and mould Inhabitants spend time in warm (in cold weather) or cold (in hot weather) public areas, e.g. shopping centres or libraries. Reluctance to receive visitors Excessive energy equipment or heating/cooling levels in the dwelling leading to high energy consumption	Level of complexity of the patient's health (Clinical Risk Groups) Risk factors or chronic diseases (ICD 9 codes): hypertension, asthma, COPD, malignant neoplasms, cardiovascular disease, heart failure, stroke, mental illness, anxiety, depression and other mood disorders. Number of consultations in the last year: primary care, specialities, emergency, Number of hospitalisations Number of different medical and diagnostic tests	Focus on the person Understand the conditions in which they live that may affect their health and wellbeing Build trusting relationships Validated screening question: 'In the last year, do you or have you had difficulties in making ends meet?' Are you often cold at home? Do you get very hot in summer? Do you spend a lot of time indoors? Do you often catch a cold? Number of people living in the household type of dwelling you live in, insulation and ventilation, living arrangements Recent life changes Quality of sleep Existence of care roles Employment situation Do you have difficulty in paying for your medicines? Social risk assessment: - Social services support - Degree of social relations and support in their environment

Too large a dwelling in relation to the number of occupants, leading to high energy consumption Continuous presence of occupants in the house, leading to higher energy consumption Presence of old and inefficient household appliances		
Potential for impact on health and wellbeing		
High when implemented, with direct impact on people's health.		
Replicability		
It is replicable with slight adaptations to the specific context of different health systems. Also adaptable to detection from social services using the observation and questions/conversations, and from the community. There is an adaptation developed for detection at schools. It is important to avoid stigmatisation when implementing the detection questions.		
Other information		
Attendance at the workshop: 16 healthcare professionals		

LAYER 4. Social, economic and environmental conditions
MUNICIPAL STRATEGY AGAINST ENERGY POVERTY
PILOT: València
Description

Strategic framework developed by local government of the City of Valencia to address and mitigate the effects of Energy Poverty up to 2030. The draft was created in April 2023 with the collaboration of different municipal services and is currently under revision.

The plan is divided into 4 categories:

- Governance: measures and decision-making mechanisms to ensure the achievement of the plan's objectives

It will include establishing a **Permanent Energy Poverty Taskforce** to monitor and address challenges in real-time, fostering collaboration among municipal departments, services, and citizens to ensure a coordinated response. It will also implement a **data collection and analysis methodology** guided by local regulations to identify vulnerable households and target interventions effectively. The plan also emphasizes **local advocacy for the right to energy**, recognizing energy access as a fundamental right.

- Prevention: measures to prevent Energy Poverty.

It will include targeted **communication and outreach** efforts and mechanisms for **identifying and referring** vulnerable households. It will link the **50/50 Program** to the right to energy and fund social entities to support implementation. Specialized **training** will be provided for stakeholders, along with formal education in green trades tied to job placement. The plan also includes establishing **climate shelters**, promoting **NZEB-standard housing rehabilitation**, and incentivizing private upgrades in vulnerable areas. A **Social Guarantee Fund** will support microloans for efficiency and renewable energy projects, ensuring comprehensive, community-driven solutions.

- Correction: measures to deploy for vulnerable households

The plan will provide **training for vulnerable families** and establish **Energy Offices** as single points of contact for energy support. It will implement **home interventions** to enhance energy efficiency and train **municipal energy agents** to address local needs. The plan supports **shared renewable energy projects** with allocations for vulnerable households and encourages **Local Energy Communities** and **public renewable generation** for equitable access to clean energy.

- Urgency: measures to alleviate high vulnerability scenarios that need immediate support

It will include measures for the **rational payment of energy bills** and **targeted subsidies** for urgent needs like insulation and appliances. It will introduce **new economic aid types** for vulnerable families

and establish **agreements with energy providers** to benefit users, including debt forgiveness and access to 100% green energy certified by Guarantees of Origin (GDO). The first draft has been prepared by València City Council Energy department in collaboration with local external stakeholders, including NGOs, energy cooperatives, and others actively addressing Energy Poverty at city level.
Potential for impact on health and wellbeing
High, city-scale
Replicability
Yes, provided they are adapted to the specific context of each location. Key elements such as data collection, stakeholder collaboration, energy efficiency measures, and financial support schemes are universally applicable, but local factors like climate, housing conditions, energy markets, and socio-economic characteristics must be considered for successful implementation.
Other information
A multisectoral commission has been established by the local government. This commission includes representatives from municipal services working on energy, social affairs, housing, consumer protection, and health. Its role is to review the strategy action by action, determine its feasibility and implementation, and define how each municipal service can contribute (e.g., the role of housing or health services).

7. Lessons learnt for future research projects

Here are the main lessons learnt for future research studies assessing health impact of interventions on socio economically vulnerable people. They stem from the experience of the studies and analysis carried out within WELLBASED. We suggest these aspects should be considered in future EU research funding calls, including the identified research topics.

Study design

- **Consider alternative study designs to address challenges in vulnerable populations.** A pre-post controlled trial design may be challenging to implement in community-based intervention research, especially among vulnerable populations. As such, alternative designs may be considered. For example, stepped wedge design or cross-over design (Hooper, 2021). Alternative designs would specifically allow all (vulnerable) participants to receive the interventions under study.
- **Ensure recruitment strategies are similar and consider randomisation.** In case of a controlled design, recruitment strategies for both research conditions should be similar and, when possible, randomisation may be applied to realize comparable participant profiles in both research conditions. Consider providing control group participants with the intervention after the evaluation study has ended.
- **Use mixed methods research for comprehensive insights.** Mixed methods research, including quantitative (e.g. surveys) and qualitative (e.g. interviews) methodology, is recommended. Where it is impossible to control changes in society and beyond, qualitative research is particularly important for documenting the broader social impacts on the intervention. Also, qualitative research can help understand the mechanisms through which an intervention did or did not work.
- **Plan timelines carefully and engage stakeholders early.** When planning a project timeline, allocate enough time for recruitment and involve stakeholders and end-users early to ensure strategies suit your target groups. Avoid overly long recruitment phases (e.g., over six months) if piloting hasn't started, as participants may lose interest or withdraw. To maintain engagement during extended recruitment, organize activities like lectures or events to keep participants motivated and connected to the project.
- **Adopt an action-based research approach for ongoing optimization.** An action-based research approach that includes frequent monitoring of effect and implementation of the interventions, could allow for a closer evaluation of what is happening and what impact this is

having on participants health and wellbeing. Such an approach would also allow for optimizing interventions and research during implementation.

- **Recognise that the health impact of interventions can often take a long time to materialise**, often several years. Impact on mental health and wellbeing can be immediate, but impact on physical health can take longer.

Data collection

- **Monitor all additional interventions and support provided to participants.** Monitor and register all interventions and support participants may receive, alongside the intervention under study. This might be done via self-report questionnaire to participants or via pilot coordinators, including a broad range of support options that may be offered to vulnerable groups (e.g. energy-, social-, financial).
- **Simplify research engagement to retain participants.** Make research engagement simple and convenient to retain participants, focusing on collecting only essential data through appropriate methods. For instance, health monitoring can be done via nurse visits or self-reporting, while data collection can involve short or long questionnaires, delivered digitally or on paper.
- **Tailor methods to participants' needs and abilities.** Adapt methods to participants' needs and abilities, providing facilitators where literacy is low. Younger participants often prefer digital self-reporting, while older participants may favor phone calls or home visits, appreciating the opportunity for interaction and socialization.
- **Ensure participants understand monitoring equipment.** Ensuring that participants fully understand the purpose and functionality of any monitoring equipment (e.g. home sensors devices to measure comfort parameters) to avoid rejection.
- **Allow for longer follow-up periods to capture health evolution.** A longer follow-up period may be needed to capture health evolution over time and the impacts on health over time.
- **Align the measurement instruments with the expected impact of the intervention.** Specific health assessments, such as anxiety, stress, depression instruments, might capture impact better than more general assessments. Also, impact might be on the broader spectrum of health and wellbeing such as social support or loneliness (for example, UCLA 3-item Loneliness Scale; Item 1 of Adult Social Care Outcomes Toolkit for Control over Life; Item 5 of Adult Social Care Outcomes Toolkit for Social Support) or community involvement.
- **Include measures to capture the impact of overheating.** Overheating is, especially in warmer countries, more worrisome than problems related to cold. Measures need to be included to capture the impact of heat problems.

- **Allow enough time from the final data collection until the delivery of results** (considering a precautional time lapse in case data collection is slightly delayed).

Intervention programs

- **Involve the target end-users (both citizens and professionals) in the development of the interventions and tailor them to their needs.** End-users need to benefit from the intervention, therefore involving them should be the starting point. In addition, involvement will aid research participant retention as participants will feel more ownership over both the intervention and the research.
- **Interventions across multiple domains and multiple layers are needed for people in vulnerable positions.** For example, interventions on financial-, social- and energy support and, interventions on awareness of energy poverty as well as structural housing improvement.
- **Monitor the implementation of interventions to evaluate the levels of exposure and the intensity of the interventions exposed to.** The planned interventions often are implemented slightly different due to (unforeseen) circumstances in practice or lower participation to activities. Monitoring implementation therefore provides important information for interpretation of findings and recommendations for policy and practice. Implementation research including qualitative research is needed.
- **Establish trust through ongoing, open communication with participants**. This is fundamental to foster long-term engagement in similar projects with vulnerable populations.

General

- **Establish trust through ongoing, open communication with participants**. This is fundamental to foster long-term engagement in similar projects with vulnerable populations.
- **Allow enough time from the final data collection until the delivery of results** (considering a precautional time lapse in case data collection is slightly delayed).

Topics for future research

The following topics for future research have been identified and could be included in EU funding lines:

- **Summer energy poverty** – our research found extensive evidence of the challenges faced by our participants in the face of extreme summer heat. While some of our interventions attempted to

address this, there is a need for better understandings of the extent of people's experiences, the coping practices they adopt, and means of making more substantial changes to their lives.

- **Continue work developing health and energy poverty indicat**ors. Energy poverty is complex to measure and indicators need to be continuously monitored on their appropriateness and reliability across countries. Moreover, given the importance of the link between energy poverty and health, there is a need to monitor prevalence and impact of energy poverty on health. Although some health indicators are already part of the energy poverty monitoring structures, further research is recommended to develop these health indicators. .
- **Participatory work on designing interventions**: given the importance of designing interventions that work for the populations that they target, there is a need for more in depth participatory research which engages these populations in intervention design, to contribute to intervention impact and involve end-users.
- **Systems approaches to intervention development and evaluation of interventions for energy poverty**. Energy poverty is a multilayered problem that requires a systemic approach involving actors in different domains. These systemic approaches should be integrated both in intervention development as well as evaluation designs. Moreover, future research calls should emphasize collaboration of research, policy, practice and education across domains in all phases of the research project.
- **Further study to generate evidence on co-benefits of interventions**, for example health impact, healthcare cost savings, Social Return of Investment (SROI).
- **Expand research on alternative indicators for Social Impact Bonds (SIBs).** As the WELLBASED project used a single indicator (energy savings) to assess SIB feasibility, further research should explore additional or combined indicators (e.g., health outcomes) to better capture the complexity of energy poverty.
- **Investigate synergies between Urban Financial Models (UFM) and Social Impact Bonds (SIBs) to enhance financial transparency and fundraising** (see Balás et al., 2024)**.** The UFM can improve transparency by calculating costs and expected returns, making it easier to attract investment for SIBs. When clients understand the financial and social benefits of a contract, they are more likely to invest. However, leveraging this synergy will require further data collection and research.

CONCLUSIONS AND REFERENCES

Conclusions

The findings of the WELLBASED project highlight the urgent need for integrated policy approaches to effectively address the intersection between energy poverty and health. Despite existing policy efforts, significant gaps remain in ensuring that energy policies consider health impacts and that health policies adequately recognize energy poverty as a key social determinant of health. This deliverable provides actionable policy recommendations to bridge these gaps and support evidence-based urban policymaking at local, national, and EU levels.

By leveraging empirical data on Energy Poverty Indicators and exploring coping strategies, WELLBASED reinforces the importance of holistic intervention models that combine energy and health considerations. The recommendations outlined in this document focus on effective implementation of holistic urban programmes as well as governance, capacity building, monitoring mechanisms, and funding strategies—key areas identified by the European Commission to tackle energy poverty.

A key takeaway from the project is the crucial role of local action and community engagement in designing and implementing effective interventions. Addressing energy poverty requires place-based solutions that are tailored to the specific needs of vulnerable populations. Collaboration with local authorities, community organizations, and residents ensures that policies are both inclusive and impactful, fostering social cohesion while improving health and well-being.

Moreover, integrating a rights-based approach to energy is essential to empower individuals and communities, shifting the narrative from assistance to entitlement. Recognizing access to energy as a fundamental right helps to combat stigma, promote social justice, and strengthen collective action.

The **WELLBASED Urban Programmes** have demonstrated the need and the impact of interventions based on the **socioecological model of health determinants**, which recognizes the multiple and interconnected levels influencing health outcomes—from individual behaviors to community, policy, and environmental factors. This comprehensive approach highlights the need for multi-level strategies that not only provide immediate relief to energy-poor households but also drive systemic change by promoting healthier living conditions, improving social support networks, and fostering long-term resilience against energy poverty.

Furthermore, the project offers valuable insights for replication, emphasizing best practices from pilot experiences with high potential for scalability. The compilation of lessons learned serves as a guide for both future interventions and scientific research, reinforcing the necessity of a multidisciplinary approach to combat energy poverty and its health consequences effectively.

Moving forward, sustained commitment from policymakers and stakeholders will be crucial to transforming these recommendations into impactful actions that promote social and environmental justice while improving public health outcomes, particularly for the most vulnerable communities.

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Annex I

This annex presents the five policy briefs that outline key policy recommendations derived from the project's findings, presented in Section 5 of this document. Each policy brief addresses a specific Action field of that section, containing a summary of the context, identified needs, challenges and the actionable solutions proposed to support evidence-based decision-making.

The recommendations are designed to enhance the effectiveness, sustainability, and scalability of innovative approaches within the project's scope. By providing concrete policy guidance, these briefs aim to facilitate informed policymaking and foster the adoption of best practices at local, national, and international levels.

After 4 years of gathering evidence on the ground, WELLBASED shares its learnings. They are designed to guide local and other policymakers in shaping comprehensive, impactful policies that promote a healthier, more equitable future for all: Policy Recommendations: Tackling Energy Poverty as a Public Health Priority

Links for each of the Action Fields policy briefs:

Policy brief 1: Local action programs to fight against energy poverty through the health lense

How to design effective urban programs to fight against energy poverty through health lenses

Policy brief 2: Collaborative governance with a Health in All Policies approach

Suggestions on how to promote collaborative frameworks for multilayer and multidimensional action at local level to ensure urban programs implementation from a HiAP (Health in All Policies) approach.

Policy brief 3: Capacity-building pathways

Pathways to increase capacity of stakeholders to identify and address the health implications of energy poverty

Policy brief 4: Monitoring and evaluation around the health-energy poverty-nexus

Advice for decision-makers and pracitioners on how to improve monitoring and evaluation to track energy poverty and health indicators

Policy brief 5: Funding to fight against energy poverty through the health lense

How to adjust and optimise funding streams to tackle energy poverty considering health

Additional briefs on sections "Tips for interventions" and "Lessons learnt for future research projects" will be available in March 2025.

Annex II

This annex presents a compilation of public policies in the field of energy implemented in the WELLBASED pilot sites in recent years. The geographical level of the policy making authority is specified for each policy, a brief description is provided and, when possible, a link is included for further details.

This analysis of energy policies at pilot sites highlights the current complexity of legal frameworks and thus, the barriers to achieve an appropriate and effective governance to implement multidimensional and multilayer plans to address Energy Poverty and health. If we add the other policy domains necessary to define holistic plans and interventions (such as health, housing, social services) governance for action becomes a major challenge.

Pilot	Policy Name	Geographical Level	Policy description	Link
LEEDS	**Warm Home Discount**	National Level	Applicants could get £150 off their electricity bill for winter 2023 to 2024 under the Warm Home Discount Scheme if they either: get the Guarantee Credit element of Pension Credit or are on a low income	https://www.gov.uk/the-warm-home-discount-scheme
	Winter Fuel Payment	National Level	If applicants were born before 25th September 1957 they could get between £250 and £600 to help them pay their heating bills. This is known as a 'Winter Fuel Payment'. The amount to get includes a 'Pensioner Cost of Living Payment'. This is between £150 and £300. There is also an extra amount in winter 2023 to 2024. This is due to be means-tested under new government legislation.	https://www.gov.uk/winter-fuel-payment
	Energy Price Guarantee	National Level	The Energy Price Guarantee (EPG) automatically limits the amount you can be charged per unit of gas or electricity. The EPG will remain in place until the end of June 2023. This will continue to limit the average household bill to £2500 a year. From 1 July 2023, households without a pre-payment meter no longer receive an Energy Price Guarantee discount on their gas and electricity bills. This policy has now been withdrawn.	https://www.gov.uk/government/publications/energy-bills-support/energy-price-guarantee-up-until-30-june-2023

Pilot	Policy Name	Geographical Level	Policy description	Link
	Energy Price Cap	National Level	The Energy Price Cap is a limit on how much energy suppliers can charge for each unit of energy and standing charge. It's designed to ensure that customers pay a fair price for their energy while also allowing suppliers to recover their costs. Ofgem, the energy market regulator, updates the cap every 3 months to take account of changing wholesale energy prices. Between 1 October to 31 December 2024 the energy price cap is set at £1,717 per year for a typical household who use electricity and gas and pay by Direct Debit. This is an increase of 10% compared to the cap set between 1 July to 30 September 2024 (£1,568). The price cap is based on typical household energy use.	https://www.ofgem.gov.uk/energy-price-cap
	Energy Bills Support Scheme	National Level	The Energy Bill Support Scheme gave every household a £400 discount on their energy bills for winter 2022 to 2023. This ended in March 2023.	https://www.gov.uk/guidance/energy-bills-discount-scheme
LEEDS	**Alternative Fuel Payment**	National Level	The Alternative Fuel Payment (AFP) was a one-off £200 payment to households that use alternatives to mains gas for heating, such as heating oil, liquified petroleum gas (LPG) or coal. This came as a credit on your electricity bill from February 2023. Thisscheme ended in May 2023.	https://www.gov.uk/guidance/apply-for-the-150-non-domestic-alternative-fuel-payment-if-you-have-not-got-it-automatically
	Cold Weather Payment	National Level	The payment is provided to people in receipt of certain means tested benefits if the average temperature in their area is recorded as, or forecast to be, zero degrees celsius or below over 7 consecutive days.	https://www.gov.uk/cold-weather-payment
	Council Tax Rebate	National Level	A £150 non-repayable council tax rebate for all households that were liable for council tax in bands A to D in England.18 This was expected to benefit 80% of homes in England. The rebate would be made directly by local authorities from April.	https://www.gov.uk/apply-council-tax-reduction

Pilot	Policy Name	Geographical Level	Policy description	Link
	Energy Company Obligation (ECO)	National level	Government energy efficiency scheme designed to tackle fuel poverty and help reduce carbon emissions. Medium and large suppliers are required to install energy efficiency measures in the homes of low income, fuel poor and vulnerable households. Measures are generally free for recipients. ECO is funded through a levy on energy consumers' bills and is worth about £1bn pa.	
	The Great British Insulation Scheme (GBIS)	National level	Government energy efficiency scheme designed to complement ECO and provide help for those on the lowest incomes plus a wider range of households living in the least energy efficient homes and in the lower council tax bands. GBIS is also funded through a levy on energy consumers' bills and is worth £831m over a 3 year period (2023-2026)	
	Home Upgrade Scheme (HUG)	National level	Provides grants for energy efficiency upgrades and low-carbon heating in low-income households in off-gas properties in England. HUG is a government funded scheme; the current phase 2 is worth £630m (2023 – 2025).	https://www.gov.uk/apply-home-upgrade-grant
	Boiler Upgrade Scheme	National level	Provides upfront grants of up to £7,500 to help with the cost of installing renewable heating systems, e.g. air source heat pumps in domestic properties and small non-domestic properties in England and Wales. The scheme is open to all households in the private sector (owner occupiers and private landlords). The scheme is funded by government; current budget is £205m (2022 – 2025)	https://www.ofgem.gov.uk/environmental-and-social-schemes/boiler-upgrade-scheme-bus

Pilot	Policy Name	Geographical Level	Policy description	Link
	Social Housing Decarbonisation Fund	National level	Government funded scheme to improve social housing to EPC C standard. Around £900m funding provided between 2022 and 2025	https://www.gov.uk/government/statistics/social-housing-decarbonisation-fund-statistics-june-2024/summary-of-the-social-housing-decarbonisation-fund-statistics-june-2024
	Warm Homes Plan	National	The new Labour government's energy efficiency programme will replace some of the above schemes, such as HUG and the social housing decarbonisation fund. Labour's manifesto stated its intention to double the previous government's total public spend on energy efficiency schemes of £6.1bn to £13.2bn. These figures do not include ECO or GBIS, which are funded through consumers' bills	https://www.gov.uk/government/news/help-to-save-households-money-and-deliver-cleaner-heat-to-homes
HEERLEN	**Energy allowance**	Nacional Level	One-off energy allowance (2022) of €1,300 in the energy costs allowance for people with an income of up to 120% for the applicable social assistance standard (ends in 2023)	Energietoeslag aanvragen (heerlen.nl)
	Energy allowance	National Level	One-off energy allowance of €800 (2022) in the energy costs allowance for people with an income between 120% and 130% of the social assistance standard that applies to them (end in 2023)	Energietoeslag aanvragen (heerlen.nl)
	Energy compensation	National Level	Twice €190 (total €380) in the months of November and December 2022 for every household in the Netherlands. (ends in 2022)	Hoe krijg ik de € 190 korting op mijn energierekening in november en december (2022)? | Rijksoverheid.nl

Pilot	Policy Name	Geographical Level	Policy description	Link
	Price ceiling for Gas and Energy	National Level	From January 1 to December 31, 2023; - Gas: max. €1.45 per cubic meter up to a consumption of 1,200 cubic meters and - Electricity: max. €0.40 per KWh up to a consumption of 2,900 KWh for every household in the Netherlands.	Prijsplafond voor gas, stroom en stadsverwarming | Koopkracht | Rijksoverheid.nl
	ISDE subsidies	National Level	Various subsidies for making your own home more sustainable, including investment subsidy for sustainable energy and energy conservation (ISDE)). Various schemes are also available for VvEs	Investeringssubsidie duurzame energie en energiebesparing (ISDE) (rvo.nl)
HEERLEN	**SPUK gelden**	Local Level	Delivery, installation, maintenance and financing via the municipality (until December 31, 2024)	Hulp bij energiekosten (heerlen.nl)
	Warmtefonds	National Level	Energy savings loan from the Heat Fund (0% interest for owners with a combined income of less than €45,013) (on going until 2028)	Groen licht voor jouw verduurzaming - Warmtefonds
	MilieuCentraal	National Level	Various awareness campaigns and online advice to save energy and make homes more sustainable (e.g. via mileucentraal.nl)	Milieu Centraal - Praktisch over duurzaam | Milieu Centraal
	Special assistence	Local Level	Provide special assistance for energy costs (is possible on the basis of current policy)	Hulp bij energiekosten (heerlen.nl)
	SPUK gelden	Local Level	Free energy saving coach to advise residents on how to save on rising energy costs for everyone in the municipality of Heerlen ends 31-12-2024)	Hulp bij energiekosten (heerlen.nl)
	SPUK gelden	Local Level	A credit of €250 via the Parkstad E-wallet app to buy energy-saving products from affiliated hardware stores or the one stop shop (WoonWijzerWinkel) for anyone with an income of up to 130% of the social assistance standard that applies to them. (ends 31-12- 2024)	Hulp bij energiekosten (heerlen.nl)

Pilot	Policy Name	Geographical Level	Policy description	Link
	SPUK gelden	Local Level	A credit of €100 via the Parkstad E-wallet app to buy energy-saving products from affiliated hardware stores or the one stop shop (WoonWijzerWinkel) for anyone with an income between 130% and 175% of the social assistance standard that applies to them. (ends 31-12-2024)	Hulp bij energiekosten (heerlen.nl)
	SPUK gelden	Local Level	Exchange campaign in which 1 large energy consumer can be exchanged for a more energy-efficient device for people with an income of up to 175% of the social assistance standard. There is a subsidy ceiling here. (ends 31-12-2024)	Hulp bij energiekosten (heerlen.nl)
	Under construction	Local Level	Municipal sustainability fund with more compensation measures than just for solar panels (to replace the regional solar panel project).	
	SPUK gelden	Local Level	insulation and sustainability program, aimed at encouraging and facilitating residents to take energy-saving measures around the home, for example by improving the insulation level. (until 2028)	
	Türkiye National Renewable Energy Action Plan	National Level	In Article 4, the need to set targets for the share of energy from renewable sources consumed in transportation, electricity, heating and cooling in 2020 is emphasized in order to develop a national action plan.	https://www.ebrd.com/documents/admin/trkye-ulusal-yenleneblr-enerj-eylem-plani.pdf
	Türkiye Climate Change Action Plan (2011-2023)	National Level	To increase the national preparedness level and capacity in line with reducing the negative effects of global climate change and adapting to these effects; To share the experience and gains gained in these efforts with the countries of the region and to develop bilateral and multilateral joint research projects for mitigation and adaptation.	iklim_degisikligi_eylem_plani_EN_2014.pdf

Pilot	Policy Name	Geographical Level	Policy description	Link
EDIRNE	**Edirne Sustainable Energy and Climate Action Plan (SECAP)**	Local Level	The goal for the Edirne SECAP process is to become a carbon-neutral city. They plan to achieve this goal by the year 2050. The preparation work for the plan is completed.	https://adminweb.edirne.bel.tr/Upload/iklim-eylem-plani_20240831212401475.pdf
	Türkiye Adaptation Strategy and Action Plan	National Level	The preparation of the national climate change adaptation strategy and action plan is nearing completion, along with detailed studies conducted in pilot cities for climate change adaptation.	https://webdosya.csb.gov.tr/db/iklim/editordosya/file/eylem%20planlari/uyum_stratejisi_eylem_plani_EN_Final.pdf
	Energy Efficiency 2030 Strategy and 2nd National Energy Efficiency Action Plan (2024-2030)	National Level	The "Energy Efficiency 2030 Strategy and 2nd National Energy Efficiency Action Plan (2024-2030)" aims to significantly reduce energy consumption and emissions in our city through targeted initiatives, incentives, and community engagement, fostering a sustainable and resilient future.	https://enerji.gov.tr//Media/Dizin/EVCED/tr/EnerjiVerimlili%C4%9Fi/UlusalEnerjiVerimlili%C4%9FiEylemPlan%C4%B1/Belgeler/EnerEffi2030Str2ndNatEnerEffiActPlan2024-2030.pdf
EDIRNE	**Türkiye National Energy Plan**	National Level	The "Türkiye Ulusal Enerji Planı" for cities focuses on sustainable urban energy management, integrating renewable energy sources, improving energy efficiency, and enhancing infrastructure to support smart city initiatives.	https://enerji.gov.tr/Media/Dizin/EIGM/tr/Raporlar/TUEP/T%C3%BCrkiye_Ulusal_Enerji_Plan%C4%B1.pdf
	Estrategia Urbana Valencia 2030	Local Level	The aim is for València to become by 2030 in a resilient city against climate change, by caring of the biodiversity of the city and the water cycle, reducing the GHG and focusing in a local and fair consumption.	Inicio - Estrategia Urbana Valencia 2030 (estrategiaurbanavlc2030.es)

Pilot	Policy Name	Geographical Level	Policy description	Link
VALENCIA	**Plan de Acción para el Clima y la Energía Sostenible (PACES)**	Local Level	Local strategy to face the climate change with sustainable energies, mitigation and adaptation. Based in 2 main strategies climate justice & energy democracy	Planes y Estrategias - València (valencia.es)
	Climate Mission Valencia 2030	Local Level	Valencia to become by 2030 in a carbon neutral city	Propuestas de misiones | Conócelas aquí | Missions València 2030 : Missions València 2030 (missionsvalencia.eu)
	Valencia Green Capital 2024	Local Level	European Commission's green city award that recognises local action towards a transition to sustainability.	https://environment.ec.europa.eu/topics/urban-environment/european-green-capital-award_en
	Agenda Urbana 2030	National Level	Roadmap that will set out the strategy and actions to be carried out until 2030 by towns and cities to become into friendly, welcoming, healthy, economically active and socially balanced areas in which to live together.	Agenda Urbana Española | Agenda Urbana Española (aue.gob.es)
	National strategy against Energy Poverty 2019-24	National Level	The aim is to achieve a new sustainable, fully decarbonised, consumer-driven sustainable energy model and in which access to energy is configured as a citizen's right. EP indicators are yearly updated per region.	Microsoft Word - Estrategia Nacional contra la Pobreza Energetica 2019-2024 (miteco.gob.es)

Pilot	Policy Name	Geographical Level	Policy description	Link
VALENCIA	**Plan Nacional Integrado de Energía y Clima (PNIEC or NECP, in English) 2021-2030**	National Level	Updated in 2023 (not final) aligned to new EU policies to face climate change. 32% GHG reduction, 48% renewable of final energy consumption, 44% energy efficiency improve, 81% of electricity generated by renewables, reduction of energy dependency up to 51%	https://www.miteco.gob.es/es/ministerio/planes-estrategias/plan-nacional-integrado-energia-clima.html
	Real Decreto-ley 6/2022, Until December 2023	National Level	Temporary reduction on taxes on energy bills from 21% to 10% from June 21 to June 22, later on reduction from 10% to 5% from July to December 2022. Now it has increased again to 10%	BOE-A-2022-4972 Real Decreto-ley 6/2022, de 29 de marzo, por el que se adoptan medidas urgentes en el marco del Plan Nacional de respuesta a las consecuencias económicas y sociales de la guerra en Ucrania.
VALENCIA	**Real Decreto-ley 10/2022, 15 june to 31 December 2023**	National Level	Gas price cap during 2023	BOE-A-2022-7843 Real Decreto-ley 10/2022, de 13 de mayo, por el que se establece con carácter temporal un mecanismo de ajuste de costes de producción para la reducción del precio de la electricidad en el mercado mayorista.
	Real Decreto-ley 8/2021	National Level	Energy cuts forbidden for beneficiaries from the social bonus until 31 Dic 23	Ministerio para la Transición Ecológica y el Reto Demográfico - Cortes de suministro y Suministro Mínimo Vital (energia.gob.es)

Pilot	Policy Name	Geographical Level	Policy description	Link
	Social bonus	National Level	25-65% discount on electricity for vulnerable consumers and for sever vulnerable consumers 40-80%. The discounts are expected to lower some during 2025.	https://www.bonosocial.gob.es/
OBUDA	**Protected Consumer Status**	National Level	This provides a deferral and instalment payment option to repay the debt, however, it does not provide a discount or other support. In order to avoid repayment and future debts, utility service providers can often install prepaid meters, which, in addition to their benefits, can increase consumer vulnerability.	
	Overhead reduction	National Level	The overhead reduction that came into effect in 2013 reduced household energy prices in three steps, regardless of social status.	
	Social fuel subsidy	National Level	Municipalities of settlements with a population of less than 5,000 can apply for the social fuel support program, and from the amount thus obtained, they purchase fuel, which is distributed among households in need according to locally determined conditions.	
	Warmth of Home Program	National Level	It provided state support for residential energy renovations through tenders, primarily to improve the energy efficiency of residential buildings and households eg. energy renovation of buildings, replacement of doors and windows and modernization of heating. These grants required pre-financing.	

Pilot	Policy Name	Geographical Level	Policy description	Link
OBUDA	**Housing renovation subsidy**	National Level	Within the framework of the housing renovation subsidy program, between the 1st of January 2021 and the 31th of December 2022, those who raise children under the age of 25 in their own property and renovate their residential property with a support intensity of 50% were able to receive a maximum of 3 million HUF from the state in the form of a home renovation subsidy. The program will be available again in 2025.	
	Home renovation subsidy	National Level	Starting from the 3rd of June 2024, you can apply for Home renovation subsidy from the state specifically for energy efficiency investments (e.g. facade thermal insulation, replacement of doors and windows, modernization of the domestic hot water system, modernization of the heating system). The support is for families living in detached houses throughout the country. The amount and intensity of the support depends on the development of the region where the property is located. In total, a maximum of 6 million HUF support is available, approx. 50-50% in the form of non-refundable grants and bank loans.	
	Residential solar panel subsidy	National Level	The purpose of the Solar Energy Plus Program is to support systems that are billed gross, with the installation, connection, and commissioning of solar panels, storage and other related devices (e.g. inverter, galvanic switch, etc.).The intensity of non-refundable support is 66%, but a maximum of 5 million HUF.The amount of self-reliance required: 34% of the total initial cost.Place of implementation: Throughout the country.Time available for implementation: Maximum 24 months	

Pilot	Policy Name	Geographical Level	Policy description	Link
	Overhead subsidy	Metropolitan level	Since 2020, the support system has significantly expanded the range of Budapest residents eligible for support. Families in need and residents of Budapest receiving a pension or pension-like benefit of up to 125,000 HUF are entitled to a subsidy of 48,000 HUF per year, while Budapest residents receiving a pension or pension-like benefit of up to 214,000 HUF are entitled to a subsidy of 24,000 HUF per year.	https://budapest.hu/eselyteremto-budapest/szocialis-szolgaltatasok/fovarosi-lakasrezsi-tamogatas
	Housing Agency of Budapest	Metropolitan level	In 2022, the Municipality of Budapest launched the housing agency program, through which it can expand the number of apartments that can be rented safely and affordably in Budapest. Part of this toolkit is the utilization of privately owned apartments in the capital, as well as the renting of privately owned apartments for the purpose of utilization. The goal is to increase the number of affordable apartments.	https://budapest.hu/eselyteremto-budapest/szocialis-szolgaltatasok/lakasugynokseg
	Climate Agency of Budapest	Metropolitan level	In 2024, with the establishment of the Budapest Climate Agency, Budapest will create a platform where building renovation grants will serve the interests of the population in a targeted manner and effectively support the modernization of real estate in Budapest. Within the framework of the climate agency, together with the cooperating district municipalities, a condominium panel renovation program will be launched in 2025.	https://budapest.hu/zold-budapest/klima-es-kornyezetvedelem/klimaugynokseg
	Climate Strategy	Local Level	Defining steps in order to reduce emission	
	SECAP (Sustainable Energy and Climate Action Plan)	Local Level	Adaptation and mitigation	

Pilot	Policy Name	Geographical Level	Policy description	Link
OBUDA	**Intelligent Network Project**	Local Level	During the Project, the installation of smart meters were installed on over 4000 sites in the district. The continuous monitoring of energy consumption provides an opportunity for families in need to rationalize their energy use.	
	Housing allowance	Local Level	Established in order to reduce the monthly costs of housing maintenance and to preserve housing.	
	Rent modification	Local Level	If the tenant pays a municipal or market-based rent due to a decrease in household income that would create an extraordinary life situation before the next review of the rent rate, they may apply for a rent modification.	
	Regular arrears management support	Local Level	Available to households who accumulate debt through no fault of their own and has entered into an instalment agreement with the service provider to settle the debt.	
	Overhead subsidy	Local level	As a new form of local support, households living in Óbuda-Békásmegyer who are unable to pay their overhead costs, regardless of income limit, can receive a subsidy (amount up to 72 EUR) once a year starting from 2022.	https://obuda.hu/rezsitamogatas/

Pilot	Policy Name	Geographical Level	Policy description	Link
SKOPJE	**Energy Law of 2018**	The whole state	The first Energy Law was adopted in 2005 and had several changes. In the 2018 Energy Law, for the first time, Energy Poverty is mentioned in section 4, specifically addressing the reduction of Energy Poverty and the protection of vulnerable consumers. The Law on Energy governs: (1) The aims and the manner of implementation of the energy policy; (2) the construction of energy buildings; (3) the status and competences of the Regulatory Commission for Energy and Water Services of the Republic of North Macedonia; (4) Markets for electricity, natural gas, heat energy as well as the market of petroleum, petroleum derivatives and transport fuels; (5) The manner and procedure for determining and fulfilling obligations for providing public services in the markets for electricity, natural gas and heat energy, as well as the rights and responsibilities of energy consumers and users of energy systems; (6) The manner and conditions for incentivizing the use of renewable energy sources and (7) other energy-related issues.	https://www.ea.gov.mk/regulations/zakoni/?lang=en
	Energy Efficiency Law of 2020	The whole state	This law governs energy efficiency, covering efficient energy use, policy, responsibilities of the Ministry and Energy Agency, public sector obligations, mandatory schemes, energy audits, efficiency in energy systems, energy services and financing, building efficiency, and product labeling. Local governments, including the City of Skopje, must adopt a triennial energy efficiency program proposed by the mayor and approved by the Energy Agency.	https://mkiee.ea.gov.mk/wp-content/uploads/2021/03/Law-on-Energy-Efficiency_English-translation_April-2020.pdf

Pilot	Policy Name	Geographical Level	Policy description	Link
	Regulation for Energy control		This regulation governs the implementation of energy control, including assessing primary energy consumption, defining energy control reports, and training programs for energy controllers. It specifies the selection, training, examination, and licensing processes for energy controllers, as well as the issuance, renewal, and revocation of their authorizations and licenses. It also outlines application formats, registers for authorizations and licenses, consolidated and annual reporting requirements for public sector energy controls, and the methodology for measuring and verifying energy savings.	https://www.ea.gov.mk/regulativa/pravilniczi/
	Regulation for energy characteristics of buildings		This regulation establishes guidelines for determining building energy characteristics, setting minimum energy efficiency requirements for new and reconstructed buildings, and ensuring compliance. It outlines conditions for designing and constructing energy-efficient buildings, control methods for heating systems over 20 kW and air conditioning systems over 12 kW, and mandates solar collectors in certain public sector buildings. It specifies energy labeling, compliance statements for designs, energy performance certificates (including format, content, validity, and display obligations), and supervision of certificates and heating/air conditioning system controls.	https://www.ea.gov.mk/regulativa/pravilniczi/

Pilot	Policy Name	Geographical Level	Policy description	Link
SKOPJE	**Regulation for Renewable energy sources**		With this regulation, the following are prescribed: 1) Types of power plants for the production of electrical energy from renewable energy sources; 2) The conditions and manner in which the surplus energy from renewable energy sources intended for own consumption is delivered to the electrical distribution network; 3) The procedure for issuing approval for wind potential measurement for electrical energy production; 4) The method of measuring wind potential for electrical energy production; 5) The procedure for issuing, transferring, and revoking guarantees of origin and their content; 6) The method, procedure, and conditions for recognizing guarantees of origin issued by other states; 7) The content, format, and method of maintaining the register of power plants producing electrical energy from renewable energy sources; and 8) The content, format, and method of maintaining the register of guarantees of origin.	https://www.ea.gov.mk/regulativa/pravilniczi/
	Program for protecting vulnerable energy consumers for the year 2023	The whole teritory	The Ministry of Economy provides financial support to households whose total monthly net taxable income in 2022 did not exceed specified thresholds, ranging from 19,000 denars (308 euros) for a single individual to 43,000 denars (699 euros) for households with five or more members. Households with members receiving disability compensation, single-parent households not receiving guaranteed minimum assistance, or those receiving compensation for bodily injury are classified as vulnerable consumers and prioritized for financial support..	https://www.economy.gov.mk/mk-MK/news/javen-oglas-za-finansiska-poddrska-za-potrosena-elektricna-energija-za-lica-koi-spagaat-vo-kategorijata-ranlivi-potrosuvaci-na-energija-za-2023-godina.nspx

Pilot	Policy Name	Geographical Level	Policy description	Link
	Program for Promotion of Renewable Energy Sources and Encouragement of Energy Efficiency in Households for the year 2023	The whole teritory	The program allocates 70,000,000 denars (1,138,211 euros) for the following measures in 2023: partial compensation for solar thermal collector systems (up to 30%, max 15,000 denars per household), PVC or aluminum windows (up to 50%, max 25,000 denars per household), and photovoltaic power plants up to 6 kW (up to 30%, max 80,000 denars per household). The Ministry of Economy manages the funds, designated from the Budget of the Republic of North Macedonia.	https://www.economy.gov.mk/mk-MK/news/programa-za-promocija-na-obnovlivi-izvori-na-energija-i-pottiknuvane-na-energetska-efikasnost-vo-domakinstvata-za-2023-godina.nspx
SKOPJE	**Program for Promotion of Renewable Energy Sources and Encouragement of Energy Efficiency in Households for the year 2021**	The whole territory	1. Partial reimbursement of the costs for purchased and installed solar thermal collector systems in households up to 30%, but not exceeding 10,000 denars (162 euro) per household for the year 2021. 2. Partial reimbursement of the costs for purchased and installed PVC or aluminum windows in households up to 50%, but not exceeding 20,000 denars (325 euro) per household for the year 2021. 3. Partial reimbursement of the costs for purchased and installed PVC or aluminum windows in households up to 70%, but not exceeding 25,000 denars (406 euro) per household for the year 2021. 4.Partial reimbursement of the costs for purchasing and installing pellet stoves in households up to 50%, but not exceeding 20,000 denars (325 euro) per household for the year 2021, in a total amount of 11,000,000 denars (178.861 euro).	https://www.economy.gov.mk/mk-MK/ns-newsarticle-oglasi-2949.nspx

Pilot	Policy Name	Geographical Level	Policy description	Link
	"Program for pomoting natural gas supply safety in households for the year 2023"	Kumanovo i Strumica	The funds from this program, in a total amount of 10,000,000.00 denars (162.601 euro), will be used to partially reimburse the costs for the preparation of project documentation for the connection to the natural gas distribution system and/or the implementation of the connection to the natural gas distribution system in households up to 70%, but not exceeding 25,000 denars (406 euro) per household for the year 2023.	https://www.economy.gov.mk/mk-MK/news/programa-za-pottiknuvane-na-sigurnosta-vo-snabduvaneto-so-priroden-gas-vo-domakinstvata-za-2023-godina.nspx
	Program of activities in the field of environmental protection and nature in the area of the City of Skopje for the year 2019	City of Skopje	1.Subsidizing citizens for the purchase of pellet stoves where there are no conditions for central heating connection. 2.Subsidizing citizens for the purchase of modern heating devices - inverter air conditioning units.	https://drive.google.com/file/d/1jlqbxqDnD7kwgR0vHYjtIC-N9zHXmjUw/view
	Program of activities in the field of environmental protection in the area of the City of Skopje for the year 2023	City of Skopje	1.Subsidizing socially vulnerable categories of citizens, residents of the city of Skopje, for the replacement of asbestos roofs with energy-efficient roofs. 2.Subsidizing citizens for the purchase of modern heating devices - inverter air conditioning units.	https://skopje.gov.mk/media/9809/javen-povik-zamena-azbestni-krovovi-2023.pdf

Pilot	Policy Name	Geographical Level	Policy description	Link
SKOPJE	**Decision to determine the maximum amount for the allocation of financial assistance to socially vulnerable individuals affected by the energy and financial crisis, residents of Skopje**	City of Skopje	Public call for the allocation of financial assistance to socially vulnerable individuals affected by the energy and financial crisis, residents of Skopje	https://skopje.gov.mk/media/9850/javen-povik-socijalno-zagrozeni-lica.pdf
SKOPJE	**Strategy for energy development in the Republic of Macedonija until 2030**	The whole territory	The following priorities have been taken into account : - Maintenance, revitalization and modernization of the existing and construction of new, modern infrastructures for the purposes of energy production and utilization, - Improvement of the energy efficiency in the production, transmission, and utilization of energy, - Utilization of domestic resources (reserves of lignite, hydropower potential, wind and solar energy) for electricity production, - Increase of natural gas utilization, - Increase of the utilization of renewable energy sources, - Establishment of economic energy prices, - Integrating the energy sector of the Republic of Macedonia in the regional and European market of electricity and natural gas by constructing new connections and by harmonizing the legislation with the existing acquis communitaire for energy, environment, competition and renewable energy sources. The Strategy addresses the energy, economic, organizational, institutional, legislative and educational dimensions of the energy sector development in the areas of energy production, transmission and utilization.	https://mkiee.ea.gov.mk/wp-content/uploads/2019/11/Strategy-for-energy-development-in-the-Republic-of-Macedonia-until-2030.pdf

Pilot	Policy Name	Geographical Level	Policy description	Link
JELGAVA	Price cap	National Level	The state compensates 50% of the price of electricity that exceeds 0.160 EUR/kWh without value added tax, but no more than 100 EUR/MWh. Any household must pay for the first 500 kWh consumed according to the electricity price set by the electricity trader, but the consumption exceeding this threshold is compensated.	
	Price cap	National Level	All households are compensated for the increase in the electricity price for the first 100 kWh every month by applying a fixed fee of 160 euros/MWh, with the state compensating the remaining difference to the market price.	
	Price cap	National Level	For firewood purchased between May 1, 2022 and April 30, 2023, the state compensates the cost increase in the amount of 50% of the purchase price, which exceeds 40 EUR/ber.m3 without value added tax, but no more than 15 EUR/ ber.m3. The maximum amount of support for which one household can receive support is 35 ber.m3.	
	Energy surcharge	National Level	For firewood that was purchased until August 31, 2022 and for which there was no document certifying payment, the state compensated a fixed support of EUR 60 per household. Applications for receiving support in the municipality had to be submitted from October 1 to November 30, 2022.	
JELGAVA	Price cap	National Level	For wood briquettes and wood pellets, the cost increase is compensated in the amount of 50% of the purchase price, which exceeds 300 EUR/ton without value added tax, but not more than 100 EUR/ton. The maximum amount of support that can be received per household is 10 tonnes.	

Pilot	Policy Name	Geographical Level	Policy description	Link
	Price cap	National Level	Households that use liquefied petroleum (propane-butane) gas for heating are compensated for the increase in costs in the amount of 50% of the purchase price, which exceeds EUR 0.91 per kilogram without value added tax, but no more than EUR 1.29 per kilogram. The maximum amount of support for which support can be received is 1 ton per household.	
	Price cap	National Level	If the user's natural gas consumption exceeds 221 kWh/month or 21 m3/month, the difference between the contract price and 0.07875 EUR/kWh will be compensated by the state.	
	Price cap	National Level	From October 1, 2022 to April 30, 2023, support is provided for the compensation of the centralized heat energy service fee. The state will compensate 50% of the tariff for centralized heat supply from 68 - 150 EUR/MWh, and will compensate 90% of the part that exceeds 150 EUR/MWh.	
	Subsidy	National Level	Support program for the use of renewable energy resources in households - the intensity of the support will not exceed 70% of the costs of the purchase of heat or electricity production equipment or the design and construction of the household connection to the centralized heat supply system, not exceeding a certain amount of support depending on the specific renewable energy equipment and its parameters.	
	Price cap	National Level	Support - electricity (for the first consumed 100 kWh), natural gas and centralized heat supply services. For electricity, natural gas, thermal energy and decentralized fuel (firewood, pellets, briquettes, etc.) state compensates price cap if the market price of electricity, natural gas, thermal energy exceeds a certain price ceiling (the ceiling will be determined in the regulations of the Cabinet of Ministers).	

Pilot	Policy Name	Geographical Level	Policy description	Link
	Price cap	National Level	Central Heating Cost Compensation: For central heating, the state provides compensation based on tariff levels. If the tariff is between €68 and €150 per MWh, the state compensates 50% of the excess above €68. For tariffs exceeding €150 per MWh, 90% of the additional cost is covered. This support applies automatically from October 2023 to April 2024.	
JELGAVA	Price cap	National Level	Natural Gas Price Cap. Households using natural gas for heating have a capped price of €108.7 per MWh. The state compensates the difference between this cap and the market price. For households consuming more than 221 kWh/month, additional compensation of €30/MWh applies. This support is covers the period from October 2023 to April 2024.	
	Price cap	National Level	Electricity Price Compensation: Households receive a discount on the first 100 kWh of electricity, capped at €160/MWh, with the state covering the difference up to the market price. For those exceed it is available, covering 50% of the cost above €0.160/kWh (up to a maximum of €0.100/kWh). This support is covers the period from October 2023 to April 2024.	
	Subsidy	National Level	State co-financing for the installation of solar panels: Households that choose to install solar panels have access to support of up to €4,000. It aims to help citizens use renewable energy, which reduces their electricity bills and promotes more sustainable energy consumption.	Energoefektivitāte | Ekonomikas ministrija
	Subsidy	National Level	Energy Efficiency Grants for Apartment Buildings: program provides grants for multi-apartment buildings aiming to improve energy efficiency. The grants cover 30-50% of the eligible project costs, with specific terms based on the energy savings achieved. This program is part of a broader initiative running from 2022 to 2026.	Daudzdzīvokļu māju energoefektivitāte 2022 - 2026 - Altum

Pilot	Policy Name	Geographical Level	Policy description	Link
	Price cap	National Level	From October 2024 to April 2025, low- and middle-income households spending 30% of their income on housing will automatically receive energy cost support if energy prices exceed a 30% threshold for three consecutive months. Measures include: an €8 discount for the first 100 kWh of electricity, up to the invoice amount; 50% coverage of heating electricity costs above €0.16/kWh, capped at €0.10/kWh; €110 for natural gas consumption over 221 kWh/month; 50% coverage of district heating costs exceeding €111/MWh; and partial subsidies for pellets, firewood, LPG, and diesel fuel. Discounts vary by consumption limits and product type, with specific caps per unit.	Valsts atbalsts iedzīvotājiem strauju energoresursu cenu pieauguma apstākļos | Ministru kabinets

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