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Reduce Energy use And Change Habits

Energy poverty in South-East Europe: challenges and possible solutions

Policy recommendations

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Introduction

Between 50 and 125 million people (about 10 – 25%) of EU citizens are estimated to be 'energy poor' [1]. The variation in energy poverty estimations is significant, mostly because there is no universal definition of energy poverty, and as a result, no comparable statistics across countries are available [2]. Energy market liberalisation and other geographical and historical specificities of the region make energy poverty situation especially severe in the South-Eastern European (SEE) countries [2, 3]. It is estimated that in SEE countries, 30% or more households are struggling with energy poverty [4].

In order to highlight the regional differences of the SEE in the EU-wide debate on energy poverty, partners of Project REACH have composed a set of policy recommendations that are specific to the SEE region. During the course of the project, these recommendations have been discussed with various decision makers at different occasions, one of them being a debate in the European Parliament in June 2016. This document collects the set of recommendations on how to tackle energy poverty in the SEE region.

A key step in the SEE region is to define and agree on indicators which need to be monitored in order to understand energy poverty. Data collection should be improved. Energy poverty should be included in energy efficiency programs at the national levels. National programs for energy poverty should offer implementation mechanisms specifically designed to improve energy efficiency for the vulnerable consumers. Apart from implementing low-cost energy efficiency measures, measures to tackle energy poverty should also encompass: replacement of household appliances, replacement of inefficient heating system (with the use of renewables when possible), different levels of retrofitting building envelope, deep renovation of the buildings, subsidies, which are suitable and useful for energy poor households (e.g. high financing rates), loans with no interest should be supported, and all state-owned social housing should be renovated to improve the housing conditions.

Energy efficiency programs for the energy poor should be carefully designed so that they would be available and accessible to those in need. It is important to minimise bureaucracy and if necessary free assistance should be provided in completing documentation and applications for receiving various forms of support for energy efficiency. Financial support, such as deduction of energy bills, should be used as a measure after all cost-effective energy efficiency options have been implemented. EU funding, i.e. through the cohesion funds, should offer funding lines targeted specifically at tackling energy poverty. On the national levels, funds available through different schemes, i.e. through the Emissions Trading Scheme

and other polluter-pays principles, or national lottery, should also be considered for funding energy efficiency improvements in vulnerable households.

To improve the planning and implementation of energy poverty measures, long-term strategies should be developed in addition to short-term measures. Local actors should be involved in designing strategies, but the responsibility should be carried by high-level decision makers. Policies related to energy poverty must be designed in a fully participatory manner, involving wide range of interested stakeholders in the process, especially focusing on creating links between the social, energy, health and environmental sector. It is necessary to work towards harmonization of energy and social policies, as well as towards integration of energy poverty policies with a wider array of policies, such as employment, housing or pension policies.

The importance of energy poverty definition for the SEE region

Defining energy poverty has and still is causing numerous debates [5-10]. Nevertheless, it is a crucial first step in addressing energy poverty. Boardman [2] explains the challenge in the following manner: All of these definitional issues are compounded by the circular argument: who is energy poor depends on the definition, but the definition depends on who you want to focus on, and this involves political judgment.

Applying the Boardman 1991 definition [11] (household that would need to spend more than 10% of its annual income on having adequate energy services is in energy poverty) to Macedonia results in almost the entire population to be energy poor [12]. A similar situation exists in Croatia [13, 14], hence one could assess that the Boardman 1991 definition is not suitable for application in the SEE region. Taking into consideration possible misjudgements of energy poverty levels, Bouzarovski [15] argues that energy poverty is a situation where a household is unable to access a materially and socially–necessitated level of energy services in the home. When discussing possible definitions of energy poverty in the SEE context, it is important to understand the impact of households' physical and institutional settings – in particular the inheritance of an inefficient residential stock built at a time of heavily subsidized energy prices and, very often, connected to an outdated energy supply system [3].

Other specifics of energy poverty in the SEE region[1]

It is commonly falsely assumed that energy poverty has the same characteristics everywhere, regardless of the cultural, climatic or political background. Through practice it was shown that regional and historical differences play a significant role in prevalence and characteristics of energy poverty. The SEE region has some specific characteristics as compared to other parts of the EU, especially Western Europe. Energy poverty is still an issue of little or no political interest in the region, and hence the problem is less defined, monitored or tackled than in Western European countries like UK or France. It is estimated that in the SEE, the prevalence of persons who are not poor, yet cannot afford adequate energy services, is likely to be higher than in other parts of Europe. However, research is needed in most SEE countries to confirm these assumptions and to deliver adequate responses. Immediate action is needed as this leads to higher occurrence of families being forced to take actions that severely impact their well-being, such as self-disconnection from heating energy and water grids.

This is why it is important for the region to be careful in defining indicators of energy poverty. It is important not to focus on measuring what share of income the households spend on energy costs, but rather on calculating the share of income that a household would need to spend on energy costs if it would be using adequate energy services. If the indicators says 'Spend more than 20% of their income', many energy poor households would not categorize as such because they spend less than 20%, since they cannot afford to spend that much if they want to afford i.e. food. So instead, they cut down on energy use and limit their own energy services in order to spend less on energy costs. Many households would rather reduce their 'energy comfort' and spend less money to save for some other basic needs.

The housing stock in SEE countries is in a relatively poor state as compared to the rest of Europe. Poor construction materials, poor insulation and poor maintenance contribute to the inadequate state and high inefficiency of many dwellings. This, combined with the old, inefficient and poorly maintained heating systems and domestic appliances, contributes to deeper energy poverty in the SEE as compared to the Western Europe. In some cases, the buildings are in such a deteriorated state that it is doubtful whether full energy efficiency retrofitting would be possible even if they would have the opportunity to do so. Many buildings are of substandard construction quality, and it would not be cost-effective to undergo refurbishment, hence re-settlement programs would be needed.

[1] Section is based on [16] and [17].

In SEE countries, the share of households not attached to the electricity grid is higher than in Western Europe. In such situations, it is hard to address energy poverty with measures for improving energy efficiency, so alternative programs for ensuring access to electricity would be needed. In some cases, the grid exists, but the households cannot afford to connect to it; in other cases, the grid is relatively close, but not at the location of consumption; and in some other cases, it would not even be cost-effective to consider grid connection, so that installation of off-grid PV systems and similar solutions need to be considered.

All aforementioned specifics lead to an often seriously impaired life quality of the energy poor. Living conditions are sometimes shockingly bad: mould, cold, draft, damp, completely unheated rooms – all adversely affecting the health of the inhabitants. In SEE countries, there is very limited social or other support for energy poor households as compared to the rest of the EU. While some minor positive cases appear (e.g. 100% subsidy for insulation of energy poor households in Slovenia), these cases are almost negligible in comparison with the support programs that exist in Germany or the UK.

Unlike in other parts of the EU, some of the currently existing funding programs for abating energy poverty in SEE countries function in a way that majority of funds are granted for the direct purchase and utilization of low-quality coal and briquettes with high humidity content burned in inefficient heaters. The undesired and negative effect of existing assistance mechanisms is the excessive pollution with PM10 produced by household heating, which threatens and deteriorates the population's health.

In SEE countries, no clear division between social housing and non-social housing buildings or areas can be detected. This means that measures for eradicating energy poverty cannot be targeted at specific areas or neighbourhoods, which complicates both the identification of the most vulnerable areas and the actions that need to be taken (measures have to be more dispersed). Citizens of SEE countries had to make a switch from subsidized energy prices to market-based prices, which resulted in continuous and significant increase in energy bills. Behaviour and habits of the people, arising from subsidized energy prices, represent a significant barrier to abating energy poverty in the SEE. People do not have the understanding that energy use needs to be managed properly, leading to often wasteful use of energy and consequently higher energy bills.

Whereas in some Western European countries it makes sense to shape measures for stimulating landlords to invest in increasing energy efficiency of their building stock, this is less applicable in SEE countries. Namely, these countries have a significantly higher share of home ownership than the rest of Europe [18]. While landlords might have funds to invest in the needed improvement, this is not the case with the poorer owners of their flats; hence

different approaches must be taken, such as providing subsidies for energy efficiency of the energy poor households.

Households in SEE countries can benefit from installation of 'low-tech' devices, such as draft proofing or efficient light bulbs, while this is often not the case in Western European countries (e.g. in Germany or UK, where double glazing is standard, so installed devices tend to be 'high-tech', for example wireless switchers). This different context needs to be taken into consideration when discussing EU-wide attempts at addressing energy poverty. It is often possible to extend these characteristics to Central and Eastern European region.

Based on the experience gained through the implementation of Project REACH and its predecessor, Project Achieve, a set of policy recommendations has been developed. Their aim is to not only to highlight the specificities of the SEE in the energy poverty policy debate, but also to contribute to overall development of much needed energy poverty policy framework on the EU level.

Definition and monitoring

The first step in getting a real measure of energy poverty is to define and agree on indicators which need to be monitored for understanding energy poverty. To this end, the following steps would be recommended:

- make a more specific analysis of the problem on the national levels in the SEE;
- continue discussions to adopt measurable definition of energy poverty – at the national and EU levels;
- develop and adopt national and EU-wide indicators for monitoring energy poverty;
- improve the data collection based on selected universal indicators in order to obtain comparable results between countries, monitor changes through different time periods, and monitor energy poverty statistics continuously;
- define vulnerable groups at the national and EU levels.

When discussing policies and impacts of energy poverty abatement measures, especially energy efficiency, it is important to emphasise the multidimensional nature of the problem of energy poverty: solving this issue contributes to decrease in general poverty, improvement of health, energy security, and fighting climate change (by decreasing CO_2 emissions).

Energy poverty is a social issue requiring primarily technical solutions!

Energy efficiency measures

Energy efficiency measures should be given a priority when discussing possible tools for tackling energy poverty. Benefits of energy efficiency have been proven, and, whenever possible, it should always be the first step. Improving energy efficiency of the dwelling and appliances improves quality of life, reduces adverse impacts on health, and contributes to decreasing energy bills. Energy efficiency measures should be followed by education and dissemination of information about the benefits of rational energy use. Financial support and other social support schemes should be the last, not the first resort in eradicating energy poverty.

Financial support, such as reduction of energy bills, should be used as a measure after all cost-effective energy efficiency options have been implemented. It should not be the first measure, as it generally does not contribute to overall improvement of quality of life and it does not promote rational energy use.

Energy poverty should be included in energy efficiency programs at the national levels. National programs for energy poverty should offer implementation mechanisms specifically designed to improve energy efficiency for the vulnerable consumers. Measures designed for tackling energy poverty through implementation of energy efficiency measures should focus on:

- low-cost energy efficiency and energy saving measures (efficient indoor lighting, draft-proofing of doors and windows, reflective foils for radiators, thermometers, etc.);
- replacement of household appliances (‘old for new’);
- replacement of inefficient heating systems (using renewables when possible);
- different levels of retrofitting building envelope;
- deep renovation of the buildings whose occupants are vulnerable should be promoted and, if impossible due to deteriorated state of the building, replacement homes should be ensured;
- subsidies, which are suitable and useful for energy poor households (e.g. high financing rates), should be shaped, especially for deep renovation of dwellings;
- loans with no interest should be supported, mainly for deep renovation;
- all state-owned social housing should be renovated to improve the housing conditions.

More specifically, when designing national level energy efficiency programs, specificities of SEE need to be taken into consideration. For example, the analysis of the available statistical data and findings of more than 400 energy audits of residential buildings completed in Bulgaria within the national energy efficiency program for retrofitting of multifamily buildings (2016–2017), shows a dramatic discrepancy between the objective energy performance of buildings and the actual energy consumption in them. While the average integrated energy performance of these buildings (kWh/m²) corresponds mostly to energy classes D and E, the real energy consumption is equivalent to classes C and B. The reason for this discrepancy is well known – most of the heating appliances are shut down voluntarily or even removed and the premises are not heated according to the established norms.

For a large share of households, including the energy poor, a retrofitting program that is limited to energy class C will only lead to the improvement of the energy performance of the building, creating conditions for improving the households' comfort, but it will not ensure real savings. Energy poor dwellings will continue to consume the amount of energy they can afford, increasing the average temperature in their homes without achieving significant energy savings. For example, if a household consumes 4000 kwh/y, which costs them 400 EUR, to maintain a temperature of 14°C, it will continue to consume the same level of energy after the retrofit, only increasing their temperature to 18 or 19°C. Actual energy savings would only be achieved if the residents would continue to maintain low thermal comfort in their homes.

In the SEE, significant share of the population is heating with electricity and solid fuels (wood and coal) burnt in low-efficiency stoves, thus creating serious environmental problems, including PM2,5 and PM10 pollution. National retrofitting programmes thus have to include measures targeting the domestic heating, even though emissions savings at times cannot be claimed (i.e. in case of fuelwood) – implementation of efficient heating systems is an effective measure to restrict the use of electricity and inefficient heating models, thus reducing the adverse impacts on the environment.

A comparative analysis of five scenarios[2] shows that in the long run, the most economically advantageous renovation is to energy class A. This is the only way to achieve a significant reduction in households' energy spending and return on investment, and to achieve real energy savings. The adoption of step-by-step refurbishment with a long-term objective of achieving energy class A allows for flexible solutions. The higher the energy efficiency class achieved, and the greater the energy savings implemented, the greater degree of state support should be provided. For example: at the moment, subsidies of 100% are obtainable

[2] http://bpie.eu/publication/accelerating-the-renovation-of-the-bulgarian-building-stock

for class C retrofit, but it would be better to implement a progressive increase in the share of subsidies according to the energy class, e.g. 70% financing for class C, 90% for class B, and 100% for class A. Deeper refurbishment also has other positive effects. It contributes to the diversification of energy sources and to the introduction of higher share of renewable energy in buildings.

Programs to increase 'energy literacy' and energy advising should be complemented with other energy efficiency programs. Vulnerable groups should be provided with information needed for understanding their energy habits and reading energy bills. Information on costs and benefits of different energy efficiency and energy savings should be available and presented in a simple manner.

Energy efficiency programs for energy poor should be carefully designed so that they are available and accessible to those in need. It is important to minimise bureaucracy, and if necessary, free assistance should be provided in completing documentation and applications for receiving various forms of support for energy efficiency.

Lack of funding for energy poverty abatement measures is a common problem in the SEE region, but also elsewhere. EU funding, i.e. through the cohesion funds, should offer funding lines targeted specifically at tackling energy poverty. On the national levels, funds available through different schemes – i.e. through the Emissions Trading Scheme and other polluter-pays principles, or national lottery – should also be considered for funding energy efficiency improvements in vulnerable households.

In SEE countries, it is often possible to find programs that support the payment of energy bills or heating fuel, which are of short-term and one-time character. It needs to be explored how funds from such programs can be reorganised to support longer-term steps, such as energy efficiency or renewables measures.

While most of the SEE region has high rate of grid electricity availability, there are still some locations without access to the grid. In addition to all aforementioned energy efficiency measures, it is necessary in such cases to ensure access to electricity. When there is no cost-effective option to connect the affected households to the power grid, the option to consider is developing support programs for installation of off-grid photovoltaic systems in remote areas, as this would enable some energy poor households to get access to energy.

Pathways to structural solutions

It is important to focus on the measures for tackling energy poverty, but it is equally important how one approaches the design of such measures.

To improve the planning and implementation of energy poverty measures, the following recommendations on how to approach the shaping of those measures are suggested:

- develop long-term strategies in addition to short-term measures;
- recognize locality-specific nature of the problem and involve local actors into designing strategies;
- ensure the sustainability of the energy poverty policies and measures by transferring the responsibility of addressing the problem from local actors and NGOs to high level decision makers;
- build capacities of decision makers to take leading role in solving energy poverty issues;
- design, implement and monitor energy poverty related policies in fully participatory manner involving wide range of interested stakeholders in the process, especially focusing on creating links between the social, energy and environmental sector;
- ensure monitoring and evaluation of energy poverty measures and programmes;
- strengthen social actors, public authorities, researchers and academia as well as NGOs through ensuring more funding specifically targeted at energy poverty;
- stimulate connections between the social, energy, health and environmental institutions and stakeholders, and ensure data exchange models;
- work towards harmonization of energy and social policies (social support related to energy poverty, and vice versa) and integrating energy poverty policies with a wider array of policies, such as employment, housing or pension policies.

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