

ENERGY POVERTY AND SOCIAL ASSISTANCE OF THE ENERGY POOR PEOPLE IN BULGARIA

The article is focused on energy poverty and the Bulgarian programme aiming at its alleviation through targeted heating allowances. Issues researched include current situation, key changes and problems in the regulatory framework for targeted social assistance for heating since 2008. Key concepts, factors and amendments, related to energy poverty are analysed. Assessments and recommendations are made for improving national strategies and policies through the prism of the concept on energy poverty in the context of pan-European requirements and practices in this field.

JEL: E61; H41; H55; I30; I38; I30

Targeted social assistance for heating – development, evaluations, future directions

The main strategic objective of the Programme for targeted social assistance for heating, launched in 1995, is to contribute to alleviation/reduction of poverty by reducing the social burden of increasing electricity and heating prices, thus providing additional social protection of low-income and vulnerable groups of the population during the heating season. The immediate specific objective is "providing means for heating to people in a difficult social situation".¹ A feature of the programme is that it is closely linked to the programme for monthly social assistance, which guarantees minimum income; yet it builds upon and complements the monthly social assistance, as follows:

First, the target groups, similar to the monthly social assistance, are individuals and families.

Second, targeted assistance for heating is based on similar principles and mechanisms for determining eligibility criteria, in particular:

- The income threshold of potential beneficiaries (i.e. differentiated minimum income for heating - DMIH²) is determined based on the guaranteed minimum income (GMI) for social assistance and a system of percentage coefficients, differentiated for the different social groups. Personal incomes of applicants should be under the so calculated threshold in order to be eligible for heating allowances.

- The criteria applied regarding property, labour, health and social status are the same as those applied for monthly social assistance.

¹ The typical definition used in the annual reports of the activities of the Social Assistance Agency.

² According to the definition in Ordinance 5 from 16.05.2008 on terms and conditions for granting targeted social assistance for heating, DMIH is „the individual threshold for access to target social assistance for heating of each person according to his age, marital status and health“.

- Both programmes are administered by the Ministry of Labour and Social Policy (MLSP) through the Social Assistance Agency (SAA), which - given their common features, mechanisms and target groups - helps to reduce the administrative costs of implementation of the programmes.

Third, the application of eligibility criteria (quite restrictive in the Bulgarian practice) narrows the scope of coverage of both programmes, but contributes to their better targeting.

Fourth, both programmes are financed from the state budget through the budget of MLSP at the expense of general tax revenues instead of targeted tax revenues, as is the practice in other European countries.³

However, the provision of targeted assistance for heating has its own distinctive features compared to the monthly social assistance, contributing to mutual complementarity of both schemes and ensuring a more comprehensive social protection. The most substantial ones are:

- in determining the income threshold (DMIH) for the different social groups, higher percentage rates are applied to the targeted heating allowances compared to percentages applied for determining the differentiated minimum income for monthly assistance. Therefore, the Programme for targeted assistance for heating is more open and more accessible for wider range of vulnerable persons and families compared with the monthly social assistance;

- targeted heating allowances are granted for the winter season - from November to March, while the monthly benefits are not seasonal;

- the amount of monthly benefits is defined as a difference between the differentiated minimum income DMI (calculated based on GMI and a system of percentage coefficients (for more details see Shopov, 2013) and the personal income of assisted beneficiaries, while the heating allowances are calculated by multiplying the nominal value in BNG of a regulated standard of electricity consumption of 385 kWh (280 kWh daytime and 105 kWh night-time) and the average final market price of electricity for households as of 31 October of the respective calendar year. It is implicitly assumed that this standard can provide minimum temperature comfort in at least one room of the dwelling of the assisted person or family⁴ In other words, the criterion applied is reflecting absolute instead of relative electricity consumption;

³ In France, for example, the sources of financing similar social allowances are the so-called social security tax, some of the revenues from excise duties on tobacco and alcohol, etc.

⁴ Historically, regulated energy consumption standards stem from the practice, introduced early in 1995. However, the initial approach was differentiated depending on the size of the beneficiary's dwelling – 560 kWh energy (390 daytime + 170 nighttime) for one-room dwelling; 840 kWh (590 daytime + 250 nighttime) for a two-rooms dwelling. Furthermore, initially energy consumption included "other energy needs in addition to heating", but this practice was abolished in 1998 (see Tsanov et al., 2012, p. 238 etc.). Thus, initially in the Bulgarian practice of social assistance for heating during the winter season, the conception of energy poverty has been implicitly accepted and applied, understood as the minimum quantity of energy necessary for lighting, cooking and heating one's home.

- by economic form, both monthly benefits and heating allowances are cash assistance, but by way of allocation and usage the latter are in the form of a service (provided by district heating, gas or electricity distribution companies) or in nature (in case of solid fuels for heating⁵);
- beneficiaries may choose the type of heating – district heating, electricity, solid fuel or natural gas;
- heating allowances are granted directly to beneficiaries with the exception of central heating and solid fuel, in which cases accrued allowances shall be paid by the social assistance directorates directly to the district heating companies and solid fuel traders. This approach helps solving the problem of indebtedness of the district heating companies;
- unlike the monthly cash benefits which are spent at the discretion of recipients, the targeted heating allowances cannot be used for purposes other than for heating during the winter season, for which appropriate regulatory mechanisms have been adopted to monitor and sanction the behaviour of beneficiaries.

From the point of view of the legal framework regulating the analysed Programme, it should be pointed out that in May 2008, on the eve of the coming economic crisis, a new Ordinance №5 on terms and conditions for granting targeted social assistance for heating⁶ was adopted (amended in the coming years), that is still in force in mid-2016. The main changes and requirements introduced with the Ordinance are in the following directions.

First, in terms of income eligibility criteria. The period considered for calculating the personal income of assisted individuals and families is refined. It was set to six months before the month of filing an application with the social assistance directorate by permanent residence of the applicant. An amendment of 2009 specified that the incomes should be declared for the month of their real receipt, regardless for which period they are due.

The percentages of the guaranteed minimum income (GMI⁷), applicable to calculate the GMIH of different assisted social groups, increased twice - in 2008 and in 2013 (see Table 1). As already mentioned, this is a prerequisite for the energy assistance scheme to open up to more beneficiaries.

The analysis of the above data shows that in terms of categories of assisted persons and families, the structure of the system of percentages generally has remained stable. The only change was made in 2014 by adding the category "child placed in a family of relatives or a foster family." The obvious purpose was to specify the amount of assistance for such children and apply a relatively higher rate to further promoting foster parenting.

⁵ In rare cases based on the assessment of the social worker, monthly allowances or part of them can be granted in kind.

⁶ See Official Gazette N 49 of 27.05.2008.

⁷ The value of GMI is determined by the Council of Ministers and used to calculate the DMI on which basis the amount of monthly social assistance shall be determined. In 2016 the GMI is equal to 65 BGN.

Table 1

Percentages used for calculation of differentiated minimum income
for heating - DMIH (2008-2016)

	2014-2016*	2013-2014*	2008-2013*
Person living alone	233.08	233.08	210
Person living alone with permanent disability 50 % and over 50 %, Orphan child	272.68	272.68	249.6
Single parent with a child up to 18 years or until secondary or professional school graduation, if the child studies, but not more than up to 20 years	219.88	219.88	196.8
Each of the spouses living together	272.68	272.68	249.6
Child between 0 to 18 years or until secondary or professional school graduation, if the child studies, but not more than up to 20 years	167.08	167.08	144
Child with permanent disability	180.28	180.28	157.2
Child placed in a family of relatives or a foster family (new since 2014)	219.88	219.88	196.8
Person living with another person (s) or family	224.68		
Parent raising a child up to 3 years	224.68	224.68	201.6
Person aged over 70	206.68	206.68	183.6
Person aged over 65, living alone	206.68	206.68	183.6
Person aged over 75, living alone	297.88	297.88	274.8
Person with permanent disability of 50 or above 50%	311.08	311.08	288
Person with permanent disability 70 or over 70%	206.68	206.68	183.6
Person with permanent disability 90 or over 90%	246.28	246.28	223.2
	297.88	297.88	274.8

* Overlapping of years occurs because changes are generally made in the middle of the respective year, i.e. before the new heating season.

In 2008, with the adoption of the new Ordinance, the MLSP applied a uniform increase of all percentage coefficients used until then. This approach, *ceteris paribus*, has enabled more people to benefit of heating allowances because of increased income threshold (DMIH).

With the next increase of percentage rates in 2013, „the scope of the programme for targeted energy assistance has been expanded by about a quarter“ (see National Social Report of the Republic of Bulgaria 2013-2014, p. 39). A differentiated approach has been applied, with a higher increase in the percentages for each of the spouses living together (1.16 fold increase) and children who study (1.15 fold increase), which has been an additional tool to promote school attendance. The lowest increase was applied to persons for whom the percentage rate was highest, e.g. elderly living alone (1.08 fold). This resulted in narrowing the differentiation between percentage rates - the coefficient of variation fell by more than two percentage points from 20.5 to 18%.

It is noteworthy that the percentage for "person living with another person" is higher than the percentage for "each of the spouses living together." This is inexplicable discrimination of legal families in favour of people living in concubinage.

In conclusion, in terms of the updating of analysed percentage coefficients, it may be summarized that, on the one hand, the changes reflect some instability of

this component of the system for targeted assistance for heating. On the other hand, they are illustrative of the system's adaptability to external and internal factors and conditions in which it operates.

Second, in terms of changes in monthly electricity consumption standard, used to determine heating allowances. This standard is an important and positive element of the mechanism for targeted assistance during the heating season. It (should) perform the functions of an automatic regulator of the amount of assistance depending on changes in the average electricity price for end users and independent of conjuncture political attitudes and decisions. In 2008-2015, the average nominal value of heating allowances increased from 282.50 BGN in season 2008-2009 to 361 BGN in the last two seasons, or by about 130%. This represented 57% of the average annual electricity cost per household in the country, which according to NSI data was about 634 BNG.⁸

However, in assessing the increase, one should bear in mind that during the analysed period, due exactly to political attitudes and decisions, the trend towards reduction of the electricity consumption standard continued: as already pointed out, since the heating season 2008-2009 it has been 385 kWh, being until then 450 kWh. This compromises the role of the standard as automatic and neutral regulator of the functioning of the mechanism for energy assistance. Cuts have allowed the budget to save 8.4 million BGN, or about 10 percent of expenditure for energy assistance. Once again, this shows that priority is given to the conservative fiscal policy over the need to provide better social protection to the poor during the winter season, given the rising retail electricity prices for households. As an example, the average electricity price for households with annual consumption below 1000 kWh (i.e. group D1 - with very low consumption) only in 2015 rose to 0,191 BGN / kWh, against 0.179 BGN/kWh in the second half of 2014, or about 7% in just 12 months. Namely, electricity is the main method of heating of Bulgarian households, especially of poor households.

In addition, it should be pointed out that if at the time of introduction of the energy consumption standard in 1995 its value was differentiated and was based on the size of the dwelling of beneficiaries, two years thereafter, the differentiation has been removed and the change in consumption levels has been done without clear and transparent criteria.

Third, another manifestation of the traditional restrictive policy trend is the option introduced before heating season 2013-2014, which provided for keeping the amount of the allowance at the level of the previous heating season, if the change in electricity price leads to change in the monthly amount of the heating allowance up to 10% for the upcoming heating season. Additional research in MLSP for the purposes of this study showed that in discussing and determining the amount of the monthly heating allowances, data from the energy regulator (Commission for Energy and Water Regulation) for the electricity price have been used; however,

⁸ http://www.capital.bg/politika_i_ikonomika/bulgaria/2016/01/17/

the mentioned option for correction of the amount of allowances has not been used.

Fourth, as positive practice may be evaluated the practice in setting the criteria for entitlement to heating allowances the amount of pensions determined after 1 July 2008 to be reduced by a coefficient whose value has progressively increased. The increase of the coefficient aims to avoid depriving pensioners of targeted heating assistance during the upcoming heating season because of updates (increase) of the amount of pensions in the middle of the year. This is one of the rare good examples of synchronization of the changes occurring in segments of the two major subsystems of the social protection system - social insurance and social assistance.

Fifth, temporary retreat of the restrictive policy on public expenditure on social assistance for heating was done in February 2014, when the government granted one-time financial support of 8387.3 thousand BGN. Individual beneficiaries received a one-time support of 30 BGN.

In addition, in October 2013, legal provision was introduced to keep the amount of heating allowances at the level of the previous heating season, despite the reduced electricity price used for determining the amount of allowances. Thus, better social protection of the most vulnerable groups included in the programme for targeted assistance for heating has been guaranteed. The application of hitherto existing mechanism for determining heating allowances assumed reduction by more than 6 BGN per month of the amount granted for the heating season 2016-2017.

Based on the above it can be *summed up* that, in general, the design of the mechanism for granting targeted monthly heating allowances is well shaped in terms of goals, principles, tools and relationships with other social assistance elements (mainly the scheme for monthly benefits). It applies a differentiated approach to different vulnerable groups and includes automatic regulators of the amount of allowances that are a function of changes in electricity prices. The administrative capacity of the national structure for social assistance is used, which leads to lower administrative costs of implementation of the programme for targeted social assistance for heating of low-income population.

A significant flaw of the Programme's management and funding (and of other social programmes) is its dependency on the restrictive budgetary policy conducted with justifications of financial stability. The development of the mechanism for granting targeted monthly heating allowances during the analysed period after 2009 may be characterized by positive changes in the system of rates to calculate DMIH that led to opening up the programme to more beneficiaries, as well as by restrictive changes (especially in the energy consumption standard used to determine the amount of allowances) that resulted in lowering the level of social protection provided through this programme.

The principle position is that the clarification of the conceptual framework is a prerequisite for the formulation and implementation of the "enlightened" policy

based on knowledge of its object and possible mechanisms for managerial impact. It is from a conceptual point of view that as a shortcoming of the programme precluding its further development and targeted improvement may be considered its insufficiently clear link with issues of vulnerable energy consumers, the conception of energy poverty and policies for its softening and reduction as part of the overall policy / policies to combat poverty. In this respect, Bulgaria is part of the large group of European countries that have not yet integrated explicitly the conception of energy poverty as part of their national policies. Only one third of EU member states recognize energy poverty at official level, and only four (UK, Ireland, France and Cyprus) have their own official definitions of it (see Pye & Dobbins, 2015, p. 43).

On this occasion, we can challenge the expressed doubt that in countries like Bulgaria, where much of the population is poor, energy poverty can be regarded as a separate specific problem whose solution should be seen by developing separate policies. It is believed that in the case of Bulgaria, the recognition of the conception of energy poverty "as an independent and specific issue makes little sense when the national socio-economic indicators are well below the EU average" and given that "there are no comprehensive criteria of eligibility for the support schemes, so that the effects of such measures are generally limited" (Pye, Dobbins, 2015, p. "v", p. 34 et al.).

We leave aside the ignorance in the Bulgarian practice of targeted social assistance, which applies very strict criteria and requirements in terms of income, wealth, and other status of applicants. However, it must be said that recognizing the conception of energy poverty makes sense (even greater sense than in rich countries) when much of the country's population is poor. Therefore, there is a scheme to guarantee minimum incomes (i.e. monthly social benefits), which is complemented by a scheme for energy assistance, plus a scheme for assistance for children and a scheme to help people with disabilities. This does not mean at all that "the concepts of poverty and energy poverty are separated". Rather, in Bulgaria at research level and at the level of development of strategic frameworks of social policies, broad and thorough attention is not paid to the problems of energy poverty, its relationship to poverty and to the synergy of relevant policies for reducing or softening poverty, energy poverty respectively. This is a manifestation of a segmented and non-complex approach, which adversely affects the achievement of the national targets for combating poverty.

Energy poverty in the context of EU requirements – key concepts and factors

Energy poverty issues are explicitly mentioned in Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and in Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules

for the internal market in natural gas. As part of the Third Energy Package, the two directives are compulsory for the member states.⁹ They require the following:¹⁰

- Member States shall take appropriate measures to protect final customers, and shall, in particular, ensure that there are adequate safeguards to protect vulnerable customers. In this context, each Member State shall define the concept of vulnerable customers which may refer to energy poverty and, inter alia, to the prohibition of disconnection of electricity to such customers in critical times. Member States shall also take measures to protect final customers in remote areas.

- Member States shall take appropriate measures, such as formulating national energy action plans, providing benefits in social security systems to ensure the necessary electricity supply to vulnerable customers, or providing for support for energy efficiency improvements, to address energy poverty where identified, including in the broader context of poverty.

The European Parliament (EP), on its side, in a special Resolution of 14 March 2013 on the Energy roadmap 2050, a future with energy¹¹ “Welcomes the inclusion of the social dimension in the Energy Roadmap 2050; considers that, in this respect, special attention should be given to energy poverty and employment; insists, with regard to energy poverty, that energy should be affordable for all, and calls on the Commission and the Member States, and on local authorities and competent social bodies, to work together on tailored solutions to counter such issues as electricity and heat poverty, with a special emphasis on low-income, vulnerable households that are most affected by higher energy prices”.

In addition to these passive protection measures, EP underlines the importance of energy efficiency and savings “as this is one of the most effective ways to reduce energy bills, and should analyse national measures such as taxation, public procurement and heat pricing, etc.”. The message is that the approach to tackling energy poverty should be complex, including a combination of economic, social, political and technological measures.

The issue of protecting vulnerable consumers is discussed once again by the European Commission in its Communication on Energy Union Package. It states that energy poverty “has many causes, mostly resulting from a combination of low income and general poverty conditions, inefficient homes and a housing tenure system that fails to encourage energy efficiency”. The Commission points out that the energy poverty can only be tackled by a combination of measures, mainly in the social field and through the energy market: “When phasing out regulated prices, Member States need to propose a mechanism to protect vulnerable customers,

⁹ Specific article „Transposition“ of both Directives obliges Member States to “enforce the laws, regulations and administrative provisions necessary to comply with this Directive by 3 March 2011“. Bulgaria is still working on the fulfilment of this requirement.

¹⁰ See article 3, points 7 and 8 of Directive 2009/72/EO. The texts of article 3, points 3 and 4 of Directive 2009/73/EC are identical.

¹¹ See point 57 of the Resolution (<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2013-0088+0+DOC+XML+V0//EN>).

which could preferably be provided through the general welfare system. If provided through the energy market, it could be implemented through schemes such as solidarity tariffs or discounts on energy bills. The cost of such schemes needs to be covered by non-eligible consumers collectively” (Energy Union Package, 2015, p. 12.) The latter means that the cost of implemented anti-energy poverty policies is to be covered through redistributive relations.¹²

Based on these official EC documents dealing with energy poverty, the following *conclusions* may be made:

First, solving the issues related to energy poverty and protection of vulnerable customers is a key component of the pan-European energy policy on liberalization of energy market, including phasing out of regulated energy prices.

Second, EC member states, when transposing the provisions of both Directives, are free to define the concept “vulnerable customers” in an appropriate for the specific country manner, but they also should ensure their adequate social protection.

Third, reducing energy poverty is placed in the larger context of general poverty.

Fourth, causes of energy poverty are low incomes, rising energy prices, energy inefficient homes and a housing tenure system that fails to encourage energy efficiency.

Fifth, two main paths of safeguarding vulnerable groups may be outlined: through the social protection system (by applying schemes of targeted social assistance plus assistance for improving energy efficiency) and through the energy market (e.g. use of social tariff rates). The cost of social protection shall be (should be) covered mostly through re-distribution processes, based on the principle of national solidarity in the aspect “poor-rich”.

Energy poverty, poverty associated with costs for heating, vulnerable groups – toward definition of the concepts in relationship with the development of targeted social assistance

The clarification of these concepts is discussed in many publications (see for example Pye & Dobbins 2015; European Commission, 2013; Bouzarovski, Petrova, Tirado-Herrero, 2014; Bouzarovski, Petrova, and Sarlamanov, 2012; Bouzarovski 2011; Anamari, 2015; Energy Community Secretariat, 2013; Sagar, 2005; Kisiov, 2012) but their detailed analysis is not a task of this article. The intention here is to review the most common understandings and to offer views that may be useful in the further development of the national programme for targeted assistance for heating. In this context, it should be recalled “that it is not possible to have a single,

¹² The vice versa, or on-going movement of these processes occurs in cases well-known in our country whenever vulnerable energy consumers, especially clients of district heating companies, do not pay their bills and thus transfer the financial implications on service providers and especially on clients who regularly pay their bills.

EU-wide definition of the concept of vulnerable customers" (European Commission, Vulnerable Consumer Working Group, Brussels, 2013, p. 16); therefore Directive 2009/72/EC stipulates that Member States are free to define both concepts of vulnerable customers and energy poverty.

Energy poverty is often defined as a situation where individuals or households are not able to adequately heat their homes or use other necessary energy services at affordable cost (Pye & Dobbins 2015, p. „v“). Other publications also state that „energy poverty is a situation where a household is unable to access a socially, and materially, necessitated level of energy services in the home“ (see Bouzarovski, 2011, p. 1; Project EVALUATE, cited according to Pye & Dobbins 2015, p. 22) as adequate heating, cooking, lighting and use of appliances at home. Similar is the definition „energy poverty is a lack of access to modern energy services. These services are defined as household access to electricity and clean cooking facilities (e.g. fuels and stoves that do not cause air pollution in houses)“.¹³

Energy poverty (and our opinion is the same) should be considered in the following causality: This type of poverty is a problem-effect of a problem-cause, such as the lack of access to "modern" energy services necessary to meet individuals' *needs* of appropriate temperature conditions at home (cool in summer and hot in winter), light, food preparation or preservation of its quality for use, etc. In other words, energy poverty is considered as inability of people to meet at home their basic *needs* (of "warm", "light", "cool", storage of food, clean cooking, usage of ICT as part of modern social networking, etc.) due to lack of adequate access to energy services. This inability in turn, from an economic point of view, largely stems from low income of consumers and high prices of energy services, leading to unaffordable costs to disposable income, poor housing conditions contributing as well. In remote areas, a cause of difficult access can be the underdeveloped technical infrastructure of the energy distribution network.

Therefore, the objective of combating energy poverty is not providing consumption of "X" kWh electricity but a means by which conditions are created to satisfy specific basic needs of people. Namely, the provision of such conditions should be considered as *a strategic policy objective to combat energy poverty*. In this sense, defining electricity consumption standards for the purpose of social protection makes sense if they ensure meeting the minimum (or "reasonable") needs of the recipients of the social allowances.

Heating (fuel) poverty relates to coverage of costs for heating needs and sometimes is defined in a similar to the energy poverty way, understood as "inability to ensure adequate energy services to the household" (see for instance Bouzarovski, 2011, p. 1). Poverty related to costs for heating needs (*fuel* or *heating* poverty) however is defined in a narrower way as difficulty and even inability to receive suitable heating at home at reasonable price, i.e. the inability to access energy services "is more often used in reference to the lack of affordability energy for

¹³ https://energypedia.info/wiki/Energy_Poverty

heating” (ibid., p. 1.) Often, as affordable are accepted prices, at which the costs of heating on the recommendations of the World Health Organisation (WHO) do not exceed 10% of household income. Such practice of defining cost affordability has been introduced in UK, Ireland, Italy.¹⁴ These states apply the expenditure method that “employs a measure of household expenditure on energy as a share of a particular income” (Pye & Dobbins, 2015, p. 23).

Another definition focuses on three main elements/factors of energy poverty - low income, heating the home and reasonable costs: “A person is to be regarded as living “in fuel poverty” if he is a member of a household living on a lower income at home which cannot be kept warm at reasonable cost”.¹⁵

Illustration of the application of different views regarding the concepts of energy poverty and heating poverty is found in the experience of some European countries (Pye & Dobbins, 2015, p. 34).

In *Cyprus*, energy poverty is officially defined based on the “significant” proportion of energy costs in disposable income of consumers, and therefore they are unable to respond to the costs for their reasonable needs.

In *Ireland*, energy poverty is officially defined as a situation whereby a household is unable to attain an acceptable level of energy services (including heating, lighting, etc.) at home due to the high and unaffordable level of costs. The criterion applied is a threshold of 10% of disposable income on energy services at home.

In *France*, to be entitled as in a situation of energy poverty, a person should encounter particular difficulties to have enough energy supply at home to satisfy his/her basic needs, due to “inadequacy of resources or housing conditions”. The disadvantage of this definition is that it is not quite specific and operationalized for the needs of social protection.

In *Italy* the national regulator of the energy market has defined a threshold of 5% cost for electricity and 10% for gas.

In *England*, energy poverty is defined based on *Low Income, High Consumption - LIHC*. Energy poverty exists when (1) *the remaining* income (after deduction of energy costs) is below the poverty line (*Low Income*) and (2) the energy costs are higher than is typical for the respective type of household (*High Consumption*). In addition, England continues to monitor in a comparative aspect the 10% threshold for determining heating poverty, i.e. households whose costs on all heating sources are more than 10% of their income and are used to ensure the standards recommended by the WHO: 21 degrees C in the living room and 18 degrees C in the rest of the house – the temperatures recommended by the World Health Organization” (see Pye & Dobbins, 2015, p. 22, 34-35).

¹⁴ The project EC-LINC highlights that “A fuel poor household is one that cannot afford to keep adequately warm at reasonable cost, where acknowledgement is made that this definition may vary by country. This is generally defined as 21 degrees C in the living room and 18 degrees C in the rest of the house – the temperatures recommended by the World Health Organization” (see Pye & Dobbins, 2015, p. 22, 34-35).

¹⁵ https://en.wikipedia.org/wiki/Fuel_poverty

in the living room and 18 degrees C in the rest of the house for 16 hours per day for households with elderly or disabled or persons with chronic illnesses.

A similar threshold is officially applied in *Wales* where fuel poverty is defined as when costs on all heating sources for “satisfactory” (according to the WHO standard) heating at home exceed 10% of household income. If costs exceed 20% of the income, households are defined as in severe fuel poverty.

It is evident that to determine this kind of poverty, United Kingdom countries use the 10% threshold of costs from the income of the consumers, and it is bound also with a reasonable consumption of energy services for heating according to WHO standards.

Other possible approaches to defining energy poverty are:¹⁶

- Determination of a minimum quantity of energy necessary to satisfy basic needs such as heating, cooking, lighting. Similar is the Bulgarian practice on energy assistance. However, in Bulgaria minimum energy consumption level is defined for calculating the amount of heating allowances instead of an explicit “heating” poverty line. The main challenge here (and in the definition of 10 per cent or x-per cent threshold) consists in well justifying the chosen level, reaching social consensus on it and ensuring compliance.

- Identification of energy type and consumption used by people living below the poverty line. For this purpose, it is necessary to obtain reliable sociological data. This way of tracking energy poverty would provide the specifics of the profile and the development of the common poverty.

- Income level, below which energy consumption and costs, incl. for basic needs, do not change significantly when changes in incomes occur. In other words, it comes to energy costs that are not elastic to income. For poor people this means that even with an increase in their income, energy consumption does not change because they remain with relatively low incomes, which does not allow them to change their consumer behaviour. This approach also requires gathering specific sociological data.

Defining “*vulnerable groups*” is the other issue, which, pursuant to the provisions of above cited two Directives concerning common rules for the internal market in electricity and in natural gas, EC member states shall be free to regulate according to national specifics. This is necessary to enable best targeting of appropriate policies on social protection and energy market that will ensure their effectiveness, efficiency and adequacy.

The international standard ISO 26000:2010 „Guidance on social responsibility“ defines vulnerable groups in a wide and versatile way as “group of individuals who share one or several characteristics that are the basis of discrimination or adverse

¹⁶ See https://energypedia.info/wiki/Energy_Poverty The first two approaches are based on the so called „expenditure method“, while the others – on the so called „consensual method“ that is using the results of specific sociological surveys (see Pye & Dobbins, 2015, p. 23).

social, economic, cultural, political or health circumstances, leaving them without means to achieve their rights or otherwise enjoy equal opportunities¹⁷.

The Energy Community Secretariat¹⁸ in relation to the development of its social strategy, generalized that the typical indicators in use for defining vulnerable customers are level of monthly income per household; seniority; children; disability; health; remoteness; unemployment (see Energy Community Secretariat, 2013, p. 7).

The working group on vulnerable consumers at the European Commission structured the main factors that generate or can exacerbate the vulnerability of consumers. These are market conditions, individual circumstances and lifestyle, social or natural environment. The group also concluded that it is impossible to have a single, EU-wide definition of the concept of vulnerable groups (see European Commission, 2013, p. 16).

In the context of energy poverty, the social characteristics are perceived as most significant for the vulnerability of consumers. About 40% of EU Member States provide a definition of vulnerability, which is based on social welfare payments. Several countries identify as a prevailing characteristic the health status¹⁹; others define as vulnerable specific socio-economic groups. A leading trait in other countries is the affordability of energy services as a function of service prices and incomes of consumers. On this occasion, it deserves to pay attention to the opinion, that defining vulnerability through "purely social categories" such as households with very low incomes, incl. pensioners, women, single parents and recipients of social benefits, ignores the role of housing and socio-technical factors influencing the inability of a household to meet its energy needs (see Bouzarovski et al., 2014, p. 17).

Bulgaria belongs to the large group of member states (incl. Cyprus, Germany, Denmark, Malta, Poland, Portugal and six others) which define vulnerability of consumers by linking it to granted social payments (Bouzarovski et al., 2014, p. 26-27).²⁰ Pursuant to Art. 66 „c“ of the Energy Act, "vulnerable clients" are end users who receive target assistance for electricity, district heating or natural gas under the terms and provisions of the Social Assistance Act and regulations on its application". This definition of vulnerability corresponds to the current practice for targeted social assistance for heating, links vulnerability with poverty and demonstrates that the current focus of the policy on protection of vulnerable consumers is on social protection, implemented through the social protection system. An advantage of the definition is that it includes, although in an unclear way, a range of other factors with

¹⁷ <https://www.iso.org/obp/ui/#iso:std:42546:en>

¹⁸ www.energy-community.org

¹⁹ In Ireland, for example, vulnerable are considered persons who (a) are critically dependent on medical equipment powered by electricity or (b) in case of disconnection during the winter season are at risk for reasons related to age, physical, mental, sensory, intellectual or mental health (see European Commission, 2013, p. 30).

²⁰ The definitions in Poland and Germany are similar to the Bulgarian definition.

impact on sensitivity to poverty, incl. heating poverty. This is because the access to heating allowances is subject to meeting a range of criteria related to – as clarified in the previous section – income, social, employment, age, health, etc. status. This way, flaws of "purely social categories" have been neutralized to some extent (see Bouzarovski et al., 2014). On the other hand, the definition does not address the possibility and the need of implementing the policies for supporting vulnerable groups in the field of energy market through the energy services.

Based on the analytical review of the literature, *it may be summed up* that there is no common opinion on the scope of energy poverty, heating/fuel poverty and vulnerable groups. There is no common definition and practice in the EU member states, as well.

From the point of view of the specifics of the Bulgarian practice on targeted social assistance for heating and the need to make the accepted definitions functional (whatever they shall be), it is logical and justified to adopt a vision whereby energy poverty as a concept shall be considered wider than heating poverty and shall cover heating costs, as well as costs for lighting, cooking, cooling etc. Given this presumption, *the following definitions may be proposed*:

*Heating/fuel poverty*²¹, seen in the three-dimensional coordinate axis "income - temperature at home - affordability of service prices" may be defined as the failure or inability of a person or family to cover the costs associated with the need for normal heating at home at affordable prices of energy services (electricity, district heating, gas).

Energy poverty in turn can be defined as a situation in which a person or family due to economic, social or other causes is unable to cover its costs associated with reasonable consumption of energy at home needed to perform different non-commercial, household activities such as heating, use of household appliances for cooking, lighting, cooling, entertainment, information exchange, etc. that are necessary to satisfy the basic needs.

The term "*vulnerable groups*" has a horizontal feature, i.e. these groups are at risk of both types of poverty, and their scope and structure are different and depend on the nature and definition of the type of poverty. Accordingly, the policy response should be different in terms of their social protection related to access and usage of energy services at home to meet their basic needs. The scope of the groups should be determined in the design and regulation of the social assistance scheme that shape its orientation to specific beneficiaries. In other words, "household customers" (within the meaning of the Energy Act) are not vulnerable *because* "they receive allowances for electricity, district heating or natural gas under the Social Assistance Act and regulations for its implementation", but *should* receive allowances *because* they are vulnerable. This may seem a formal argument only at first glance, but substantially it turns the logic in defining "vulnerable groups". On

²¹ One could consider these terms as synonyms with some preferences for "heating poverty" as more appropriate for Bulgaria.

this basis the following wording of the definition may be proposed that takes into account the said causality logic: *Vulnerable shall be considered* persons and groups who because of their relatively less favourable income, health, employment, family and/or age status are disadvantaged and are unable to provide in their homes sufficient volume of energy services necessary to meet their basic physical, spiritual or social needs or are fully deprived of access to energy services.

Drivers of energy poverty

This issue has already been raised on several occasions above in the article. One could conclude that energy poverty is due to a complex influence of various economic, social, health or technical factors, which drive the capacity of individuals to meet their basic needs at home and / or affect the living conditions at home. Key drivers are low individual incomes, high prices of energy services and low energy efficiency of housing (see Pye & Dobbins, 2015, p. 9-10; Buzarovski, 2011, p.1²²). They are supplemented by the influence of factors such as source of heating (solid fuel, gas or district heating - with horizontal or vertical installations), energy efficiency of household appliances, size and structure of family/household, health status; the two former factors having also specific importance on the types of needs of energy services, e.g. for people who use permanent life-saving medical equipment.

Proxy composite indicator for measuring heating poverty – an attempt for empirical evaluation

The comparative evaluation for Bulgaria in regard to the EC 27 average is based on a method pioneered by Healy (2004, according to Buzarovski, 2011, p. 2). A proxy composite indicator is used, calculated as a sum of:

- the average value of the following three indicators: share of total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames, doors; share of total population having arrears on utility bills; households with heavy financial burden due to the housing costs;
- share of total population unable to keep their homes adequately warm.

Thus, in this case heating poverty is measured by the so-called "consensual method", which assesses whether the household is energy poor based on SILC data used for the four indicators above mentioned.

The results show (see Table 2) that, on the one hand, Bulgaria keeps a stable trend towards improvement of the indicator - the rate of heating poverty analysed in 2014 decreased compared to 2008 by more than 31 percentage points. On the other hand, the distance to the European average rate of energy poverty remains high - more than 2 times. This means that our country lags behind the other member states in the field of low energy poverty.

²² https://en.wikipedia.org/wiki/Fuel_poverty

Table 2

Heating poverty (2008-2014)

	2008	2009	2010	2011	2012	2013	2014
EC 27 (%)	29,8	28,6	29,2	29,7	31,3	31,8	30,8
Bulgaria (%)	101,8	98,0	98,3	75,5	76,1	75,5	70,3
Difference between Bulgaria and EC 27							
Nominal (p.p.)	72,0	69,4	69,1	45,8	44,8	43,7	39,5

Source. Author's calculations based on Eurostat data.

Bulgaria's practice through the prism of the concept on energy poverty - assessments and recommendations

The analysis above of the national practice in terms of implemented policy on targeted social assistance for heating and the analysis of EC documents and studies on energy poverty and related concepts and categories give grounds to make some *assessments, conclusions and recommendations*.

First, despite the positive trends in the last years, the rate of energy poverty and particularly heating poverty in Bulgaria is over twice higher than the average in EU. Together with all other issues, this trend may be considered as a challenge to the future formation and implementation of national policies in this field.

Second, Bulgaria still has not articulated the issue of tackling energy poverty, in its policies, including in the field of social assistance clearly enough, definitely and comprehensively. Very important components have been introduced such as the Programme for targeted social assistance for heating and a legal definition of "vulnerable consumers" whose flaws have been highlighted above. However, they have not reflected sufficiently the conception of energy poverty, incl. adoption of national definitions of energy poverty, heating poverty and vulnerable groups. Therefore, the recommendations made in the previous section on these types of poverty and on the concept "vulnerable groups" may be adopted, modified or discussed.

Third, apparently, at least as far as energy poverty is concerned, Bulgaria lags behind in the implementation of Directive 2009/72/EC and Directive 2009/73/EC. In addition, the state should decide whether and to what extent the objectives of its policies in the social field, in the energy sector, etc. will incorporate energy poverty and/or only heating poverty. This is a key decision that will affect the formulation of the respective strategic frameworks that are currently missing.

Fourth, in tackling energy poverty, currently Bulgaria focuses on passive measures within the social safety net and particularly, assistance through the scheme of heating allowances.

Still in its beginning is the implementation of objectives and actions on improving energy efficiency of buildings, namely actions included in the National programme on energy efficiency of multi-family residential buildings, which are an important "not

social protection” factor for reducing energy/heating poverty. Measures concerning the energy market have not been applied, although such measures were applied until 2003 through the two different thresholds of daytime electricity tariffs (for more details see Tsanov, et al., 2012, p. 239-240).

Pursuant to the requirements of both above-mentioned Directives of the Third Energy Package, measures should be implemented on information provision and protection of consumers from disloyal behaviour of suppliers of energy services. The Bulgarian practice is full of cases of abuses of monopoly position of electricity and district heating companies. The use of so-called private arbitration courts is just an example of "legalized extortion" vis-a-vis consumers, regardless whether they belong to vulnerable groups or not.²³

Therefore, a completely relevant and acceptable recommendation is to view the social policy in the form of financial assistance as a measure with an immediate effect, while actions directed towards improved energy efficiency (of residential buildings and appliances) as long term preventive effects at lower cost. „Member States are encouraged to consider the two jointly, in keeping with the requirements of the 3rd Energy Package“(European Commission, 2013, p. 27).

Fifth, adopted definition (whatever it is) of energy poverty at national level will need to become operative regarding the implementation of the programme for target social assistance for heating. The methodological problem for selection and application of indicators that measure energy poverty at national level and indicators that measure effectiveness, efficiency and adequacy of the programmes of target social assistance of energy poor also should find reasonable solution based on adopted conceptual framework and definitions.

Accordingly, a method to define energy/heating poverty should be chosen – a consensus method or a cost method. As considered above from the empirical comparative evaluation of poverty in Bulgaria and EC27, data of SILC provide for measuring energy poverty through the first method, which is appropriate for the purpose of national evaluation of the scope of poverty, but seems hardly applicable in practice of identifying target groups and beneficiaries of social assistance. The cost method that evaluates energy poverty by counting whether the share of energy costs in household incomes is over a set threshold at national level (i.e. 10% in Wales) and seems *more appropriate for the Bulgarian practice*, requires determining:

- the range of costs - for all energy services or for heating services only, depending on the national choice in terms of type of poverty to be tackled;
- the range of incomes - gross income, cash income or net disposable income, the former being the most logical;
- the type of energy costs - costs reached/accounted for, based on the statistics of household budgets or SILC, or costs needed based on special studies for

²³ According to data provided by the national ombudsman Mrs. M. Manolova, some of these courts “solve” over 1000 cases per year and as a rule the judgements are to the detriment of the individual consumers (<http://www.segabg.com/article.php?id=798699>).

determining a “well grounded” energy consumption standard that allows for satisfaction of basic household needs of heating, lighting, cooking, etc. In the former case, if the national choice is to combat only heating poverty, then the standard should be limited only to energy consumption needed for “normal” heating at home. In this context, apparently the consumption standard currently used for the purpose of the programme for targeted social assistance for heating needs a deep analysis, justification and (probably) updating, that will involve also an increase in the respective public expenditure.

Sixth, the quantification of the consumption standard, respectively, the level of the threshold of eligible energy costs in the incomes (if this option is chosen), will contribute also to determine an affordable electricity price (similar to social affordability of prices of water supply and sewerage services²⁴). Social affordability means households to have sufficient income to pay the bills without depriving themselves of basic goods and services.

Adopting a mechanism of determining the affordability of electricity prices by applying the presented approach is another challenge and task of the national policy to combat energy poverty. However, this challenge, as well as the other recommendations made here, are consistent and fit into the conception of energy poverty, and logically correspond with the proposed sample definitions of the key concepts related to energy poverty.

Finally, in parallel with the debate and work on drafting a comprehensive national policy to combat energy poverty, measures can be identified and taken to optimize the current scheme of targeted assistance for heating. They concern introduction of some adjustments to solve the problem of inequality of assisted beneficiaries and the risks of falling into the poverty trap that derive from the equal amount of benefits for all beneficiaries. In general, the Bulgarian practice has already gained experience in this field.

At the time of introduction of the programme in 1995, the amount of the heating allowances was calculated as a difference between the real incomes and the protected income line (formed as a sum of GMI and the BGN equivalent of the electricity consumption standard). By applying this method of calculation, heating allowances varied from 0 BGN to the maximum threshold depending on the household income. Thus, the sharp confrontation has been avoided between households with incomes slightly below the eligibility line and households with incomes a little above the line who are not eligible to assistance. If the assistance was provided in full amount of the standard for all eligible persons, then the unemployed (whose families make up a significant proportion of assisted people) would see fewer incentives to start work on the formal labour market. If they started a low-paid job and their incomes exceeded by a negligible amount the protected

²⁴ "Social affordability of the price of water supply and sewerage services applies when service prices determined based on the minimum monthly consumption of drinking water of 2.8 m³ per person do not exceed 2.5% of the average monthly household income in the respective service district" (Law on regulation of water supply and sewerage services, 2005).

income line, they would lose the right to receive a sum approximately equal to the then half the monthly minimum wage - a significant demotivating factor. Thus, the mechanism for targeted energy assistance intended to take into account the effects of the different mechanisms of social protection of the poor on their behaviour on the labour market.

The introduction of a single rate of heating allowances - as evidenced by the arguments stated above - is a controversial measure from the point of view of social justice and impact. Its inconsistency has been softened in 2002 by the application of the "first level" of payment of daytime consumption of electricity under the previous lower prices (which was abandoned later), and to some extent justified by the lower administrative costs for implementation of the programme for targeted assistance for heating during the heating season (for more details see Tsanov, et al., 2012, p. 239-241).

In light of these conclusions and recommendations, *the proposals of the Ministry of Energy* (ME), which are long term in essence, deserve special attention. In late May 2016, ME published their concept on definition and protection measures of vulnerable consumers.²⁵ They also resulted from the efforts to transpose the requirements of "electricity" Directive 2009/72 of the Third Energy Package.

One of the proposals of ME refines the concept of "vulnerable consumers" as follows: "Vulnerable consumers" are household clients, in whose premises supplied with electricity live persons who because of age, health or income are at risk of social exclusion with regard with supply and consumption of electricity and who benefit from social protection measures ensuring the necessary supply of electricity."

This definition is definitely better than the definition in the Energy Act. It largely describes the characteristics of vulnerable consumers caused by age, health and/or income status. Through the prism of the definition given above in this section, the opportunities to refine the proposed definition are in the following directions:

- include factors such as family status (lonely persons and parents are at higher risk of poverty); employment status (unemployment leads to higher risk of poverty, although this driver was indirectly accounted for through its impact on reduction of incomes); residence in isolated remote villages (although their number is small, they are deprived of power supply services because of lack of built electric network);
- specify that "the necessary supply of electricity" is to satisfy the basic physical, spiritual or social needs of consumers;
- in the context of the concept of energy poverty, resp. heating poverty, the definition should refer to vulnerability in terms of access not only to electricity, but also, as already said, to other energy services for households.

Another proposal concerns a package of measures for protection of vulnerable consumers. It may be assessed as comprehensive, as it includes short-term financial

²⁵ https://www.me.government.bg/files/useruploads/.../ppt_26may.pdf. Accessible for the public is only the posted on this web-site presentation. This is why the present assessments of the suggestions are based only on its limited information.

measures, long-term non-financial measures, including long-term measures to improve energy efficiency of residential buildings.

The main financial measure proposed by the ME consists in introducing a social tariff for electricity that would provide electricity at some 30% lower prices, and the gap will be covered by the state. Potential beneficiaries of the measure shall be a group of vulnerable consumers, including:

- lonely persons aged above 70 years whose only income is from pension of an amount up to the poverty line defined for the respective year;
- persons with disability over 90% with an assigned assistant;
- families with children with disabilities and assigned assistant;
- persons and families who receive heating allowances pursuant to the provisions of the Social Assistance Act.

The scope of beneficiaries is very limited, because, with the exception of beneficiaries of heating allowances, it is based exclusively on social criteria²⁶ which specify the "vulnerability" of the group of consumers, but it is not clear why other groups that would qualify remain outside its scope, given the definition of vulnerable consumers proposed by ME, i.e. unemployed people with incomes below the poverty line, retired persons under 70 years with incomes below the poverty line for the respective year, and others.

The social tariff would apply to limited monthly quantity of electricity, which covers the basic households' needs of electricity outside the heating needs, respectively:

- up to 100 kWh per month for a household which uses the services of district heating or natural gas to heat water for domestic purposes, or
- up to 150 kWh for a person/household using electricity boiler for hot water.

At current electricity price, the maximum monthly amount of the aid would be around 11.40 BGN, which is about 16% of the current targeted assistance for heating (72.20 BGN).

A positive fact is that ME justifies the extent of the social tariff with sample consumption rates to meet the *minimum* basic households' needs of electricity – by electrical appliances and in general. Without raising a question of formation of these rates,²⁷ they may be considered as a result of implicit adoption and application of the cost method for determining the poverty line and of the understanding of the role of combating energy poverty (which is that ensuring a certain amount of energy is not an end but a means to meet the needs of people). The list does not include heating appliances, probably because the social tariff is expected to complement existing heating allowances. On this basis, it may be *assumed* that the proposed measures are

²⁶ It should be reminded that such allowances are granted based on complex criteria on income, property, employment, family and health status.

²⁷ The approach of their determination is subject to constructive criticism in the report of Open Society Institute (see Zahariev, Grigorova, Yordanov, 2016, p. 10 et al.).

wider oriented and targeting formulation and implementation of policies aimed at energy poverty, not just heating poverty, which is a better approach.

This assumption is supported by the proposed non-financial measures that are fully consistent with Article 3 "Public service obligations and customer protection" of Directive 2009/72/EC. These measures are targeted to vulnerable customers and involve positive actions - establishment of a register of vulnerable customers, who cannot be disconnected from electricity services due to their health condition; banning suspension of electricity to persons over 90% disability, with an attendant during the winter period for 30 days after the date due for bill payment; possibility of debt restructuring; Code of Ethics for suppliers; implementation of information campaigns. The latter is markedly a long term measure and envisages actions for improving energy efficiency in multifamily buildings, with priority for sanitation will be given to buildings where over 30% of the residents benefit from the new measures to protect vulnerable consumers. This priority concerns some 90 thousand buildings, mostly prefabricated, with approximately 1.3 million people living in them. The measure will save financial resources to the people in these buildings, will improve the quality of housing and prolong their life.

If the assumption is true that by offering a package of measures, ME, complementing current multiannual practice for targeted social assistance for heating, seeks to redirect the national policy from combat "heating" poverty to combat energy poverty, it is noteworthy that the social tariff for electricity would function for five years - until the full liberalization of the energy market. The arguments of ME for the chosen period of functioning of the social tariff are not clear. It seems unjustified from the point of view the scope and sustainability of the policies to combat energy poverty, because it would mean that after five years the state policy will "shrink" again only to combat heating poverty. On the other hand, similar positive but temporary measure as the social tariff can be seen as a bad follow-up of the already mentioned "flexible" practice of periodically reducing the size of energy consumption standard, applicable for determining the amount of the heating allowances.

A general weakness of the proposed measures is that they do not include at least tentative funding costs. Moreover, only some of them are indicated to be at the expense of the state budget (social tariff) and European funding (increasing energy efficiency of residential buildings). There is no clarity concerning the administration of the measures - particularly regarding the application of the social tariff.

The conclusion that can be drawn is that in general there is a positive step in the implementation of important European requirements regarding the fight against energy poverty and what is more important - regarding guidelines for updating the state policy in this aspect. The proposed measures are on the regulated electricity market, where ME has direct functions for formation and implementation of the state policy. These measures upgrade and complement the existing long-term practice of targeted social assistance for heating during the winter season. In formulating the views, the institutional views have been prevailing more or less. The disadvantage of this approach is the lack of clarification in advance of important conceptual issues crucial to

the performance of the state policy to combat energy poverty, such as determining the scope of the policy and defining the associated general concepts, the main directions and policy areas, the system of objectives and so on. In other words, specific issues have been proceeded without having (publicly known) clarity on general issues. From the viewpoint of the principles and practices of strategic planning, without having developed a strategic framework with its inherent objectives, priorities, tasks, stakeholders and risks, “measures” have been proposed which in general are tools for implementation of a strategy.

Therefore, a lot of questions are still open, that should be answered by elaborating a *national strategy to combat energy poverty*. As intrinsic to a strategic document, the strategy should clarify the basic concepts and the scope of national policy in this sphere, its place in the overall fight against poverty, outline goals, objectives, priorities, actions, mechanisms (incl. coordination of measures to tackle poverty in social protection and energy market), and action plan, specifying, among others, the amount and sources of funding. This task can be solved best with the participation of all stakeholders, who may later be involved in the implementation of the strategy and in reduction of energy poverty in the country.

References:

Anamari, A. (2015). Energy poverty – proved of the effectiveness of the public heating systems? - In: Proceedings of the 9th international management conference „Management and Innovation for Competitive Advantage“. Romania, November 5th-6th.

Bouzarovski, S. (2011). Energy poverty in the EU: a review of the evidence. University of Birmingham.

Bouzarovski, S., S. Petrova, and R. Sarlamanov (2012). Energy poverty policies in the EU: A critical perspective. - Energy Policy Review, October.

Bouzarovski, S., S. Petrova, S. Tirado-Herrero (2014). From Fuel Poverty to Energy Vulnerability: The Importance of Services, Needs and Practices. University of Sussex, SWPS.

Healy, J. D. (2004). Housing, Fuel Poverty and Health: A Pan-European Analysis. Ashgate.

Pye, S., A. Dobbins (2015). Energy poverty and vulnerable consumers in the energy sector across the EU: analysis of policies and measures. INSIGHT_E, www.insightenergy.org

Sagar, A. D. (2005). Alleviating energy poverty for the world's poor. - Energy Policy Review, N 33.

Shopov, G. (2013). Targeted social assistance in the periods the economic development. - Economic Studies, 1 (*in Bulgarian*).

Tsanov, V. et al. (2012). Labour market and social protection in the economic development of Bulgaria“, Sofia (*in Bulgarian*).

Zahariev, B., V. Grigorova, I. Yordanov (2016). Energy Poverty in Bulgaria. Open Society Institute, <http://osi.bg/downloads/File/2016/energy4.pdf> (*in Bulgarian*).

Energy poverty and social assistance of the energy poor people in Bulgaria

Directive 2009/72/EC of the European Parliament and the Council dd. 13 July 2009 concerning common rules on the internal market in electricity (*in Bulgarian*).

Directive 2009/72/EC of 13 July 2009 concerning common rules on the internal market in natural gas (*in Bulgarian*).

Energy Union Package. Communication of the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank. Brussels, 25.2.2015, COM (2015) 80 final.

Energy Community Secretariat (2013). Outline of the social strategy in the energy community, https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3182029/0633975AD22B7B9CE053C92FA8C06338.PDF

European Commission (2013). Vulnerable Consumer Working Group Guidance Document on Vulnerable Consumers. Brussels: Vulnerable Consumer Working Group.

Law on regulation of water supply and sewerage services, in force since 20.01.2005, supplementary provisions – SG, N18/2005.

National Social Report of the Republic of Bulgaria 2013-2014 (*in Bulgarian*).

Web sources:

https://en.wikipedia.org/wiki/Fuel_poverty

<http://www.investor.bg/ikonomika-i-politika/332/a/k-staikov-lipsva-adekvatna-metodologija-za-opredeliane-na-energiinata-bednost-196730>

https://energypedia.info/wiki/Energy_Poverty

<https://www.iso.org/obp/ui/#iso:std:42546:en>

www.energy-community.org

<http://www.segabg.com/article.php?id=798699>.

http://www.capital.bg/politika_i_ikonomika/bulgaria/2016/01/17/

https://www.me.government.bg/files/useruploads/.../ppt_26may.pdf.

<http://osi.bg/downloads/File/2016/energy4.pdf>.

http://www.standartnews.com/biznes-energetika/33_poevtin_tok_za_bedni-334194.html

30.IX.2016