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THE POLICY OF CONSUMER PROTECTION IN THE ELECTRICITY MARKET

ABSTRACT: *The provision of a safe and reliable electricity supply has a central place in modern social life. The rise of electricity prices and the process of liberalisation of the electricity market are the two main factors which have made it necessary to modify the current traditional ways of protecting vulnerable customer categories. The Internal Energy Market Directives provisions ensure that citizens have access to energy of a specified quality level at reasonable, cost-reflective prices and to the conditions of real competition and free choice. This objective implies intervention due to the fact that some consumer classes are less attractive for the companies (remote consumers, low consumption consumers or low-income consumers). The aim of this paper is to analyze the current forms of vulnerable customer protection from the critical point of view and to point out possibilities for their application in the case of Serbia.*

KEY WORDS: *liberalisation, competition, vulnerable customers, consumer protection.*

JEL CLASSIFICATION: K23, L51, L94

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1. Introduction

The global liberalisation process that started more than two decades ago resulted in considerable changes in the electricity market. Until the implementation of sector reforms, the electrical power industry of most countries was organized as a vertically integrated monopoly. This form of organization meant that electricity production, transmission, distribution and supply were organized within the same company, which was most frequently state-owned. As such, the electrical power industry was frequently considered to be a part of general social policy, primarily via the mechanism of low electricity prices. This idea that the electrical power industry, independent of its legal status, is a public service that should in its business operations think about the highest economic benefit for society in general, has now been significantly modified.

New solutions in economic theory have contributed to the fact that the electrical power industry is no longer considered a natural monopoly at branch level. The production of electricity and the supply of end users have been recognized as segments useful for the introduction of competition, while network activities (transmission and distribution) have remained regulated activities due to their natural monopoly features.[1] Further changes resulted in restructuring, i.e. the separation of vertically integrated monopolies into separate activities. This was followed by new organization of the market based on the development of competition where possible. The place and the role of the state in the regulation of this strategic industrial branch has also changed.

Traditional economic regulation mechanisms in the form of state intervention and the resulting market imperfections are increasingly being abandoned, and new market business conditions adjusted to. The factors that determine changes in economic regulation are numerous – the development of new production technologies and requirements, economic arguments that the introduction of competition will improve business and energy efficiency, pressure of consumers who think that regulation is not an efficient way of protection, etc. The process of deregulation has resulted in the appearance of new forms and mechanisms of regulation whose aim is no longer control of a natural monopoly but improvement of competition, protection of consumer rights and control of environmental effects.

1 Tanić, G. (2001), *Electric power and market*

In general, customers are best protected by well-functioning competitive markets. The establishment of competition in energy supplies should therefore be a prime objective. When it comes to transmission and distribution, efficient regulation is needed for the protection of customers and the organisation of a competitive energy market. Even in the best of worlds there are requirements for customer protection. Network supply activities are a regulated monopoly business.

In a mature and well functioning competitive market competitive forces will ensure the right allocation of resources from a macroeconomic point of view, and consumer protection is secured by the ability of customers to effectively choose their supplier. The regulation of the network business is designed to secure the same objectives. For both generation/supply and for networks this market model implies that the costs of energy companies will be covered and a reasonable (market-based depending on risk) return on capital allowed for. In principle, energy companies not realizing these two requirements will leave the market: however, for reasons of supply security, in the case of network owners/operators regulators must ensure new owners/operators to take over the businesses.

Some countries traditionally have below-cost energy prices reflecting the concept of energy being a public good. The transition to pricing covering costs plus a reasonable return on capital will imply a rise in end-user energy prices, which might not be affordable to certain consumer groups. This social problem must be addressed. This process – in the case of small customers – is the focus of this working paper.

2. Liberalisation of the electricity market in the European Union

As far back as the beginning of the 1990s the European Union started a deregulation process based on the concept of market liberalisation. The creation of a single energy market, via the gradual opening of national markets, meant stronger competition and the introduction of the consumers' right to select their electric power supplier independently. The introduction of competition into the production segments and end consumer supply meant establishment of market business conditions, which was frequently followed by the complete privatization of these fields of activity.

These changes in the electrical power market were not followed by the introduction of adequate measures for protection of consumer interests. For the most part they remained as before and in most cases they are not only incapable of meeting the

requirements of the liberalized market, but are also unable to meet the needs of socially vulnerable consumers. The issue of consumer protection has become a current issue only after the rise of electricity prices. This problem is especially present in the countries of the region that, in addition to implementation of power supply reforms, have been faced with the considerable social consequences of the general economic reforms undertaken after their entry into the process of economic transition.

In the countries of the region, there are some characteristic institutional and historical issues, of varying degree[2], which have to be taken into account:

- Tariffs do not reflect costs[3];
- Cross-subsidisation between large and small consumers;
- Low collection rates, both non-payment and non-invoicing as a result of poor customer data bases;
- Lack of transparency in data and harmonisation of accounts;
- Lack of competition in the wholesale and retail markets;
- TSO bundled with dominant (wholesale) supplier/dominant or sole importer;
- DSO bundled with retail;
- Unclear situation on cross-border issues (capacity allocation procedures and balancing regimes).

The integration of national markets means the adjustment of prices to an economically justified level; which means that the prices of electricity cover all justified costs and provide a reasonable rate of return on invested resources. The rise of electricity prices is an unavoidable link in this chain of changes and is of crucial importance to the outcome of market reforms, but the rise of prices also has social consequences and a satisfactory solution to this problem must be found. In order to do this it is necessary to engage not only power supply but also society in general, where the state must take a special role in this process via competent institutions. In these attempts the following principles have to be respected:

2 Energy Community Secretariat's Benchmark Reports, at: www.energy-community.org

3 The underlying report does not display the current levels of electricity and gas prices in individual countries and UNMIK. The concept of cost, as well as the different methodologies for tariffs, need to be tackled by the Working Group with a view of possibly harmonising methodologies across the region.

- Process of energy production and services has to be at a level which ensures economic efficiency and reliable supply to consumers, i.e. which disables discriminatory positioning of market players;
- Electric power, as essential wealth, must be available to everyone at least to the level which provides for life's bare necessities;
- Administrative procedure for establishment, control and verification of socially vulnerable categories has to be transparent and simple in order to maximize protection effects and to minimize administrative costs;
- It is necessary to provide long-term and consistent implementation of energy product pricing policy.[4]

Aware that due to the size of national markets they are unable to introduce competition, the countries of the region have gone in the direction of integration and the creation of a regional electricity and gas market. The European Commission initiated the process in 2000 when the Memorandum of Understanding for power supply markets in South-Eastern Europe was signed. Led by development motifs, the countries of the region have agreed that they will harmonize the national regulatory framework with the legislation of the European Union and that they will establish a structure to monitor market functioning.[5] These commitments have been taken by signing the Memorandum of Understanding (Athens Memorandum), which was extended in 2003 to the gas market. The Creation of an Energy Community contract was signed by eight countries in the region and UNMIK in October 2005 and came into effect in July 2006.

Expectations of the regional market are high. First the Energy Community endeavours to ensure more reliable electricity supplies. Recognizing the importance of providing high quality, accessible and affordable services to meet the needs of citizens and enterprises, article 3 of the Electricity and Gas Directives 2003/54 and 2003/55 provides the framework to build on. Art. 3 (2) of the Directives decrees that any Public Service obligation shall guarantee, inter alia, equality of access for EU electricity companies to national consumers. According to Art 3 (5) member states shall in particular ensure high levels of customer protection and adequate safeguards to protect vulnerable customers. This includes measures to help them avoid disconnection and measures to protect customers in remote areas. Through the introduction of competition and market conditions of doing business it is expected that efficiency will grow and

4 _, (2003), "Can the Poor Pay for Power? The Affordability of Electricity in South East Europe", EBRD.

5 Filipović, S. (2008), Održivi razvoj energetike – uporedna iskustva i preporuke za Srbiju, doktorska disertacija.

there will be a reduced pressure on price increases,. Secondly the aim is to reduce corruption through the definition of transparent procedures and the introduction of market discipline overseen by independent regulatory bodies. Integration and liberalisation of national markets will enable more rational planning through regional consideration and justification of investments .

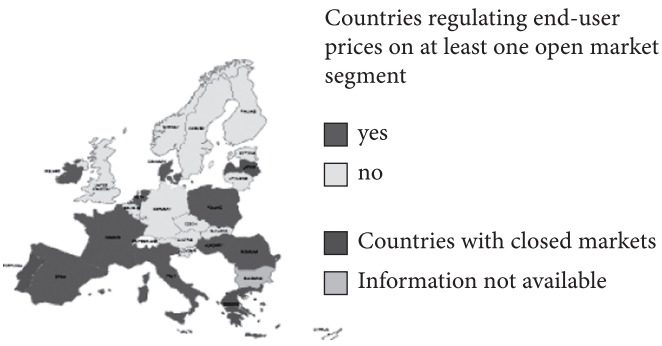
The first step in the direction of liberalisation is the separation of production and sales from network activities in which there is natural monopoly (at least at the accounting level). This is the precondition for opening the market, and means that customers have the right to choose the most favourable producer based on prices offered and supply conditions. In accordance with Directive 2003/54 and 2003/55 all EU members are obliged from 1 July 2007 to completely open their markets for gas and electricity. The countries of the region have committed to opening the market from 1 January 2008 for all consumers except households, which will have the right of free choice of supplier starting from 1 January 2015.

Complete opening of the market gives each electricity or gas customer the right to select to purchase energy in the free market at market formed prices, or to continue purchasing energy at regulated prices in accordance with the methodologies and tariff system relating to this field. In this way the supply monopoly is directly terminated, where the institution of supplier in extraordinary circumstances (Supplier of Last Resort) who should provide continuous supply of consumers in extraordinary situations (e.g. bankruptcy of supplier) is introduced in order to protect consumers.

As far as EU member countries are concerned, only Portugal, Greece and Latvia still have closed electrical power markets.[6] In the following figure, dark blue indicates the countries that give their end customers the right of choice when paying for electric power. End users may choose whether to pay their electricity bills according to a tariff system or to switch to the system of market prices. Light blue shows the countries that do not have tariff systems, but where end customers buy electric power from suppliers at prices freely formed in the market.

6 Nikolić, M., Tanić G. (1997), "Transformacija elektroenergetskog sektora", *Ekonomski anali*, vol. 41.

Figure 1. Regulated prices in the electric power free market



Source: Tanić, G, Filipović, S. (2008).

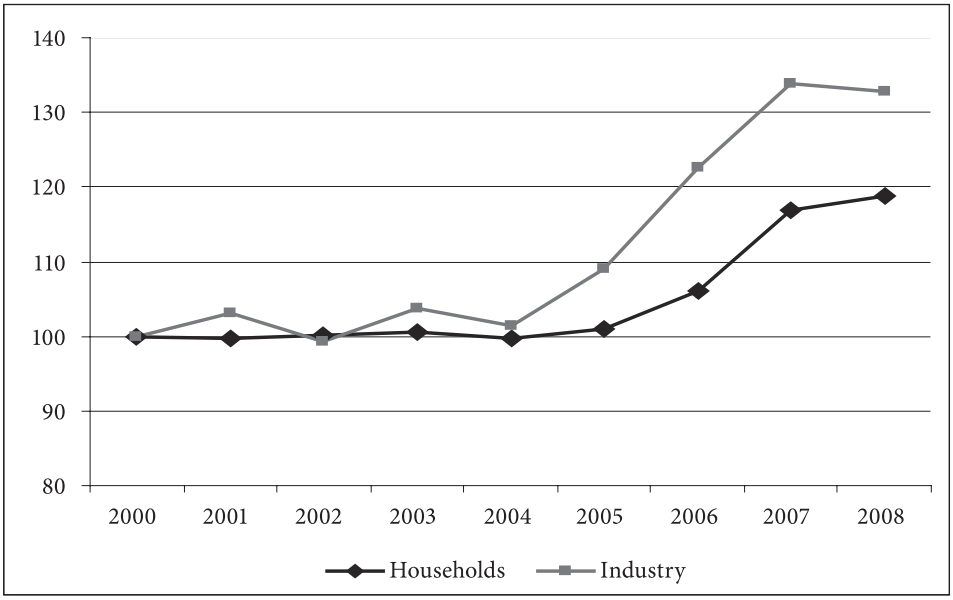
3. Electricity prices in the liberalised market

Electric power price reduction should be one of the main results of market liberalisation. Although a decreasing trend in electricity prices was noticed during the 1990s, especially for industrial consumers, electricity prices have been constantly increasing since 2000. There are numerous factors which contribute to this: the constant rise of oil prices resulting at the same time in the rising price of gas and coal, increased demand for electricity, considerable impact of ecological taxes, increased business risks. All these factors mean that the price of electricity is considerably higher than at the beginning of market liberalisation. Moreover, given that some of these factors are unlikely to change it is expected that this trend will continue in the future.

In the European Union Eurostat keeps data on the electricity pricing trends. The following illustrations show the price trend only for EU-15 for the period 2000-2008, because new EU members have only been obliged to report prices since 2004. The trend of price increases is especially prominent in industrial consumers where the prices compared to the referent year of observation (2000) have increased by 33%, while the prices for households have increased 19%. Prices have increased differently by country: Spain had an increase of 39%, Germany 49%, Finland 67%, Sweden 77%, Great Britain 81%, while the prices in Denmark have increased by as much as 92%. The experience of France is interesting, where the price of electric power for the companies that have remained connected to the state regulated sector (company EdF) has increased by 11%, while the price of the bidder in the market has increased by 76%. There has been a similar situation in

the USA where prices increased faster in the states where electric power industry was deregulated than in those where regulated prices were implemented.

Figure 2. Trend of electric power price increases in EU-15 in the period 2000-08



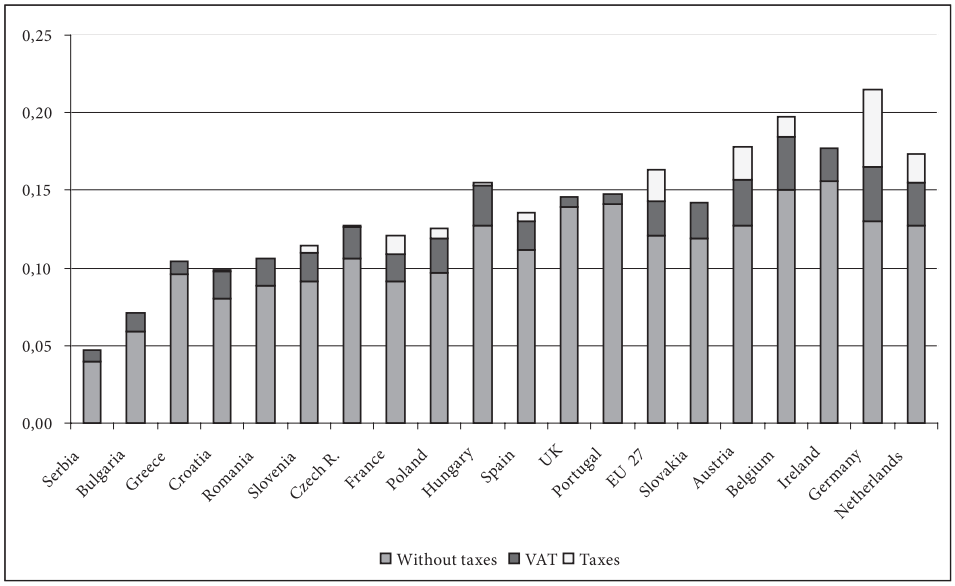
Source: http://epp.eurostat.ec.europa.eu

In almost all EU-15 countries the structure of the final price for households and industrial consumers has included other taxes in addition to VAT. These tax burdens[7] are especially high in Denmark, Germany and Italy. The following figures show the structure of electric power prices for households and industrial consumers in European Union countries and Serbia.[8] The next table shows comparative electricity prices for households according to Eurostat methodology. According to this methodology the reference consumer who is considered to be the standard consumer in the household category consumes 3.500 kWh per year, of which 1.300 kWh is during the night,. The standard industrial consumer is considered to have a consumption of 2.000 MWh per year, with maximum power of 500 MW and 4.000 hours of usage. The data refers to electricity prices in January 2008.

7 Filipović, S. (2004), "Primena eko – poreza u zemljama u tranziciji", *Economic Annals* No. 162

8 See more about the new methodology at http://epp.eurostat.ec.europa.eu

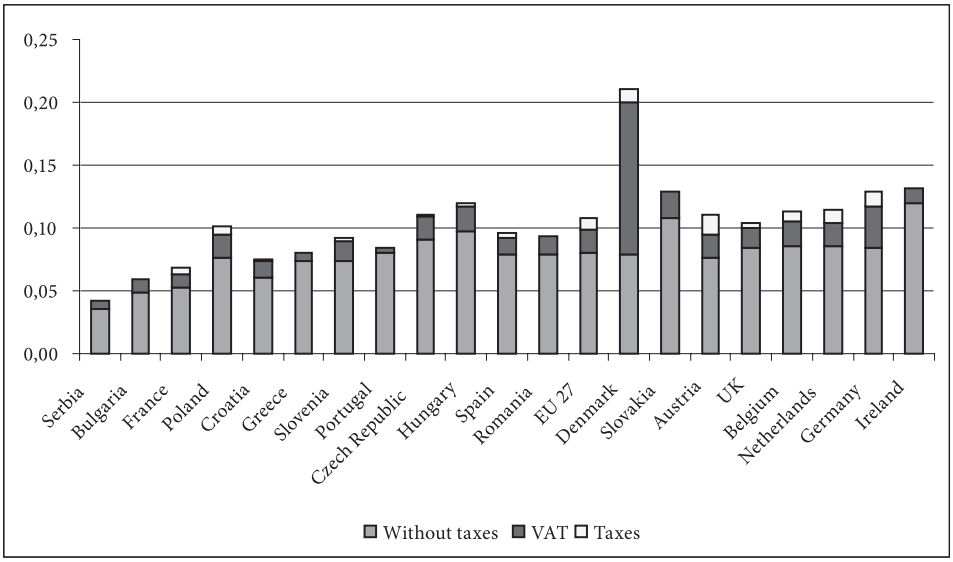
Figure 3. Comparative survey of electricity prices for households



Source: http://epp.eurostat.ec.europa.eu

The average electricity price for households minus taxes and contributions at the level EU-27 is 12.11 EUR per 100 kWh. For this category of consumers Ireland has the highest price (15.59), while Bulgaria has the lowest (5.93). However, if VAT and other taxes are included the price for households is highest in Germany. The price of electricity in Serbia was calculated according to the new Eurostat methodology. In January 2008 the price (including VAT) of electricity for households was 4.71 EUR cents. Since then there has been an increase in electricity prices, so the current price level (including VAT) for households in Serbia is 5.50 euro cents.

Figure 4. Comparative survey of electricity prices for industry



Source: http://epp.eurostat.ec.europa.eu

According to the new Eurostat methodology, the average price for industrial consumers minus taxes and contributions at EU-27 level in January 2008 was 8.09 EUR per 100 kWh, and was highest in Ireland (12.01), and lowest in Bulgaria (4.91). If taxes and contributions are included the price for industrial consumers was highest in Denmark (21.11), which has by far the highest contributions of all EU countries. The price (including VAT) of electricity for industry in January 2008 in Serbia was 4.20 EUR cents, which now after the latest increase is 4.90 EUR cents.

It is evident that electricity prices in all countries of the region are still considerably lower than the EU average. However in the last few years they have increased considerably. The reasons for this are the opening of national markets, increased demand due to rapid economic growth, bad weather conditions in certain countries, and also the closure of blocks of the Kozlody nuclear power plant in Bulgaria, which has considerably reduced the regional electricity production level. Inclusion of the regional power market into the Pan-European will certainly dictate the trend of electricity prices.

The expectation that electricity prices will continue to rise, the fact that electricity has the status of essential wealth, and the imperative that its price must not be a

social category if it is intended to liberalize the market and initiate investment to ensure a reliable consumer supply, all necessitate paying much greater attention to the protection of vulnerable consumers in the coming years. In order to achieve this it is necessary to define a legal category of the vulnerable consumer, to determine the extent and mechanism of their protection, to find a modality for its financing, and to continuously monitor the complete process. Through analysis of current practices in EU countries and the region, taking into consideration the countries' specific issues, and based on consideration of the advantages and disadvantages of applied solutions, we will try to point out some possible solutions which may be implemented in our country.

4. Consumer protection policy in the liberalised electricity market

The liberalisation of the market has imposed the need for protection of the rights and interests of consumers who are less interesting to market-focused energy companies (remote settlements and households, small consumers or households with low income). In the liberalised electricity market consumer protection can be considered in a wider and a narrower sense. The wider approach to consumer protection means clear and transparent establishment of the

- mutual obligations of consumer and supplier,
- definition of quality of supplied electric power and
- protection of specially vulnerable categories of consumers.

As far as the mutual obligations of consumer and supplier are concerned, the protection domain covers the right to network access, type of contract, the way of paying the bill, procedures for delays in paying bills, procedures during disconnection from the network, treatment of energy theft and so-called commercial losses, and settlement of disputes. General conditions of delivery that define the quality of delivered power have become standardized in most EU countries, while in the countries of the region their definition is still underway. The protection of especially vulnerable categories of consumer is in the framework of the narrower approach to consumer protection and will be discussed further below.

The first step in defining the policy for protection of vulnerable consumers is to establish the category i.e. to identify vulnerable consumers based on generally accepted criteria. There is no consensus on the criterion that defines a vulnerable consumer. Most frequently the level of monthly income is taken as the criterion

by which it is established whether or not somebody is socially vulnerable. In this case it is necessary to establish whether the level of monthly income is taken at the individual or at the household level. It is important to define whether the income or expenditure approach is implemented, i.e. whether income per individual or per household is observed, or whether the individual share of the cost of the total basket of expenditure is taken as the criterion. For example, in Europe income below 60% of the national average income per capita is taken as "relative poverty" and is the level below which social transfers are allocated.

In most countries of the region (except Romania), the legal framework for the protection of vulnerable customers is based on acts of the social welfare system, customer protection laws, or acts that regulate competition. The institutional actors are responsible ministries and government and the role of regulatory bodies is concentrated on promotion of competition in energy markets and on regulation of the monopoly activities of network operators. Definition and particular regulation on protection of vulnerable energy customers does not exist in these countries, with the exception of Romania where this group is defined by the Electricity Law or by Ministerial Decree. In Serbia protection of vulnerable customers is the responsibility of government ministries and is covered by the Law on Customer Protection and Law on Social Protection.. Vulnerable customers are defined by the welfare centre as follows: customers using financial/welfare support; pensioners on the lowest pensions; handicapped in care; foster families; and families that receive financial support for the third and fourth child.

In the context of defining the vulnerable consumer the term energy poverty is frequently used. Definitions of energy poverty tend to vary with the average economic and climatic circumstances of the country or region. The most basic definitions of energy poverty specify a *resource threshold,* the maximum acceptable proportion of household income devoted to energy consumption. In Hungary, for example, the criteria for energy poverty are as follows: the household's monthly energy expenses reach or exceed 35 per cent of the total monthly household income; and the household's monthly heating expenses reach or exceed 20 per cent of the total monthly household income; and per capita income in the household does not exceed twice the lowest old-age pension amount.

Although there are numerous overlaps between energy poverty and social vulnerability these two terms are not synonymous. Social vulnerability is a much wider term and includes all categories of the population that are not able to provide the essential minimum for themselves and the members of their household. This category includes: those who are over 60 years old, disabled

persons, families with young children and low income, ill persons who need long-term medical treatment, households which receive state social benefit. It is common to all definitions that vulnerable consumers are not able to maintain themselves and their family due to objective financial poverty, which could be either permanent or temporary. Permanent poverty is when the consumer, due to various objective circumstances, is not able to provide sufficient income, and therefore he/she receives permanent benefit. Temporary poverty appears due to sudden changes of life conditions (being fired, death in family, health problems, unexpected losses, etc.). Such consumers require higher flexibility in payment, which may mean extension of payment terms, provision of one-shot support or special terms of payment.

Based on the aforementioned, the vulnerable consumer can be defined as a person who, due to objective circumstances which are the consequence of social or personal factors they cannot affect, is unable to settle his/her electric power bill. Due to their failure to pay[9] these persons risk having their electricity disconnected.

When defining consumer protection it is necessary to establish the minimum level of consumption necessary for meeting basic needs. Establishing a generally acceptable level of minimum electric power consumption per household is a complex issue due to local differences and specific conditions in different countries. Minimum levels of electric power are established based on observation of the quantity that is necessary for meeting basic household needs (electricity for lighting, cooking, water heating, use of basic electric appliances). Heating and cooking power may be provided from other energy sources such as coal, wood, oil, LPG, etc. If there is no alternative to electricity as a heating source this issue can be treated separately via the introduction of seasonal quantity criteria. The representative household is taken as a standard that can be observed in a differential way according to the number of household members, i.e. per specific conditions.

One of the important issues that is closely connected to the definition of a vulnerable consumer category is the definition of the payment capacity of the population. The basic premise on which payment capacity is based is that households are able to satisfy certain needs for electricity by allocation of a socially acceptable proportion of their annual income. Such an approach can help in determining

9 _, (2004), "Supplying low income and vulnerable customer groups", No. 272/04, GB Office of the Gas and Electricity Markets.

the general electricity price by demonstrating the percentage of the total number of households that is able to pay its electricity bills. In the text below we will discuss this issue in further detail, considering its importance in the analysis of electricity price trends and their influence i.e. observing the number and identity of consumers who are not able to ensure minimum electricity requirements.

Payment capacity can be defined as the power of consumers or consumer groups to pay for the minimum requirements for electricity or some other product. Payment capacity can be expressed as the percentage amount of the monthly income of the household consumed for certain needs (in this case for electricity). Alternatively, payment capacity can be expressed as the percentage participation of the cost of electricity in the total monthly expenditure of a household. Establishment of this percentage amount depends on components that are taken for the observation of the total expenditure of a household, i.e. on its size and the structure of its consumer goods basket. Alternatively the share of cost for electricity can be considered per intended use (e.g. for heating).

When defining the bottom limit of the share of the individual cost in the total expenditure, certain governments as well as international institutions and organizations have developed ad hoc rules to determine the acceptable share of electricity cost in the total monthly income of the household.[10] According to the Word Bank, World Health Organization and IPA Energy, the socially acceptable level of the electricity cost in the total household expenditure would be from 10 to 15%. The following table shows the share of electricity costs in the countries of the region, the countries that became EU members and the Commonwealth of Independent States.[11]

10 Frankhauser S, Tepic S. (2005), "Can poor consumers pay for energy and water? An affordability analysis for transition countries", Working Paper No. 92, EBRD.

11 More about electricity indicators in Sebia see in: Filipović, S. (2006), "Energetska stabilnost i održivi razvoj Srbije", *Miločerski ekonomski forum – Evropski prioriteti i regionalna saradnja*, Savez ekonomista Srbije, Beograd.

Table 1. Electricity expenditure as a percentage of total household income

South East Europe		*Central Eastern Europe and the Baltic States*		*Commonwealth of Independent States*	
Albania	4.2	Czech Republic	4.2	Armenia	6.2
Bosnia and Herzegovina	5.4	Estonia	3.2	Azerbaijan	1.8
Bulgaria	7.3	Hungary	5.3	Belarus	2.2
Croatia	3.9	Latvia	2.2	Georgia	2.8
FYR Macedonia	5.3	Lithuania	2.8	Kazakhstan	1.7
Romania	4.8	Poland	4.5	Kyrgyz Republic	2.2
Serbia and Montenegro	5.5	Slovak Republic	3.5	Moldova	3.5
		Slovenia	4.5	Russia	1.6
				Tajikistan	1.4
				Turkmenistan	0.1
				Ukraine	2.1
				Uzbekistan	1.7
average	*5.2*	*average*	*3.8*	*average*	*2.3*

Source: Frankhauser S, Tepic S. (2005).

Some authors call this approach current payment capacity, as it is calculated based on the current share of this cost in the monthly income of an average household. However the shortcoming of this approach is that it does not take into account the fact that some households do not settle their dues regularly or to the full amount. Also in payment capacity data from other countries there is a possibility that the price of electricity, and therefore its share in the total expenditure, is underestimated. This is why in transition countries the share of electric power in total household costs is considerably lower than that used by international institutions. The other explanation for such a low share of electric power cost can be the amount of electricity consumption, i.e. availability and presence of other forms of energy sources in meeting household needs.

5. Forms of protection of vulnerable consumers

The major criteria for customer protection and transparency are: transparent information about supply prices and network tariffs, comprehensible bills, non-discriminatory contracts, dispute settlement mechanisms and guaranteed quality of supply standards. Almost all countries recognize these criteria in their legislation and include it in their regulation.

In practice policies of protection for vulnerable consumers appear as part of general social policy or in the form of direct support to vulnerable consumer categories. When consumer protection forms part of the general social policy it includes all vulnerability domains and not just energy vulnerability.. This kind of protection is based on nationally established criteria that most frequently are based on minimum income per household, and the financial support is not strictly intended for power needs. This form of consumer protection is applied in Germany, Scandinavian countries, the USA and others. There is a similar practice in Serbia where general social protection provides the basis for allocation of special funds from the budget. Funds intended for socially vulnerable categories are not limited to paying for electricity.

Unlike this general way of giving help the policy of helping vulnerable consumers can be realized via direct pecuniary support, by issuing vouchers or a guarantee letter, or via the introduction of a social component in the tariff system. In other words a mixture of tariff and non-tariff based support mechanisms.

Direct pecuniary support to consumers who are poor in terms of power, as implemented, for example, in Austria, has its shortcomings as there is no guarantee that these funds will be used for payment of electricity bills. In this sense, issuing a voucher is a much more acceptable solution as these funds are used for the intended purpose, as they are paid directly into the accounts of the power companies which serve the socially vulnerable consumers. This approach means that the power companies keep records of their socially vulnerable consumers, which are the basis for those consumers' power entitlement.. The total amount of power consumed and the amount deducted from it is shown in the consumer's account. The voucher method in the form of direct payment to the power company restricts the possibility of support misuse, i.e. reduces the risk of unpaid power bills. However successful implementation of the voucher method requires transparency and continuous oversight of funds allocated to power companies. Voucher financing can give a strong stimulus to competitive pricing as it provides an incentive for poor consumers to choose the cheapest

supplier, as in this way they can purchase more power for the same amount of support. The issue of a guarantee letter, where a certain percentage of the bill is financed from the general social programme, also stimulates competition.

Serbia uses a non-tariff based support mechanism. Social allowances are provided from the state budget and go directly to the beneficiaries. Provision of support to the most vulnerable consumers in Serbia is carried out based on decisions about discounts made by the public company Electric Power Industry of Serbia (EPS). Consumers who have the right to support and consumers who are in social need (retired persons with the lowest pensions, disabled persons and person under medical care, poor people as well as families receiving child benefits for the third and the fourth child) have the right to use the discount. Identification of target consumer categories is entrusted to social care centres which send lists to distribution companies. In accordance with the latest decision of March this year, the discount for used electric power is as follows:

- 35% reduced price for tariff element 'active power' for monthly consumption of electric power up to 450 kWh (tariff customers who receive financial benefit) and
- 35% price reduction for rational consumption ('green zone') for tariff element 'active power' for monthly consumption of electric power up to 350 kWh (tariff customer who is in position of social need).

The target consumer category (tariff customer who is the user of financial benefit and who is in a position of social need) comprises 40,000 consumers monthly, which is 2% of the total number of consumers in Serbia. The prerequisite for these discounts is reliable bill payment. Additionally EPS gives a discount of 5% to all tariff consumers who have regular payments. On average 1.2 million consumers in Serbia or 40% of the total get this discount. Taking into account these three categories, the total amount of discount that EPS approved during 2007 was 14.6 million EUR.

Bosnia and Herzegovina, Montenegro, Austria and Slovenia also have various non-tariff based support mechanisms. In Bosnia and Herzegovina there is no single support mechanism at the national level. However, non-tariff based support mechanisms exist in the Republika Srpska and Sarajevo Canton. Republika Srpska adopted the Vulnerable Customer Protection Programme which is applicable from 1.01.2008. Defined groups can get monthly support of 100 kWh free of charge. Funds are provided from the entity budget with power utilities, paid directly by the Ministry. In Sarajevo Canton, there is a social allowance

during 5 winter months (26€). The funds are from the cantonal government budget. If the allowance is used for electricity, district heating or gas, the amount is credited to the designated invoice. Otherwise, the allowance is paid to the vulnerable customer in cash. 7% of the total number of households in Sarajevo are subsidized.

In Montenegro the Government have plans to subsidize vulnerable groups of customers with 10.3 million euros. The targeted group consists of 20,000 customers which are divided into two – in the first group are users who already have the right to subventions, while the second one is customers whose electricity bill is between 15 and 60 euros. The last group receives a 15% discount if their total income per household does not exceed 1,000 euros. Recipients of financial benefit (families that receive financial support, handicapped on care, etc.) whose electricity bill is up to 60 euros have the right to a discount rate of 40%.

In the Austrian social system there is an Unemployment Benefit which is a percentage of the last net income paid by the state (national compensation). After a certain period of unemployment people receive a reduced Continued Unemployment Benefit. There is also a system of Social Aid that is the responsibility of Austrian federal states. Conditions for granting this aid are different throughout Austria. People eligible for Social Aid are mostly defined by their low income (percentage of medium household income). Compensation schemes range from recurring payments to aid for rent or heating costs to payments for nursing or special needs.

In Slovenia the vulnerable customer has to ask for help with proof that s/he does not have the means to live and because of that her/his life or health and the life of persons living with her/him is threatened. The resulting costs to the supplier are covered by revenues from the use-of-network price. The price of supply of last resort is determined by the system operator. This price has to be higher than the market price for comparable consumers, but it should not exceed it by more than 25%.

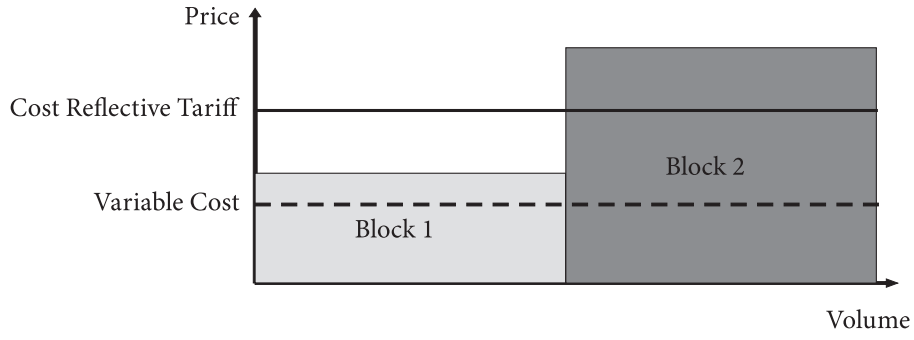
Lifeline tariffs[12] are the most common means of protecting vulnerable customers in developing and emerging market countries. They can come in two or three-block versions. Two-block lifeline tariffs simply have a lower tariff for energy consumed up to a certain limit, usually set quite low at a level approximately

12 Tanić, G, Filipović, S. (2008), "Zaštita potrošača u uslovima liberalizovanog tržišta električne energije", *Industrija* 4/08, Ekonomski institut, Beograd.

minimal or 'lifeline' energy consumption. Three-block lifeline tariffs introduce a third, higher tariff for energy consumed over a certain limit, to discourage very high levels of use (which may be a sign of inefficiency) and/or to encourage fuel switching. The latter is particularly important in cases where electricity is used for heating and cheaper more efficient alternatives such as gas may be available.

The following figure shows how electric power is priced in the double tariff system. The solid line indicates the tariff that covers all costs, while the dotted line indicates variable costs. The first block tariff covers variable and a part of fixed costs, while the second tariff covers all variable and fixed costs. The price for the second block tariff is higher than the real tariff for the part of the fixed costs that are not covered by the first block tariff.

Figure 6. Example of increasing block tariff



Source: Tanić, G, Filipović, S. (2008).

The tariff system with a social component is based on the presumption that low-income households are small consumers of electric power so their electricity needs can be met within the first tariff block. It is expected that consumers with a higher income consume more electric power so by payment of higher bills will compensate for costs accrued in the first block. Different countries' definition of the first block tariff varies enormously between 50 and 200 kWh of monthly electricity consumption.

This implies that unless the subsidy is provided only to those consuming a very small amount, the middle-income groups will tend to benefit more in terms of the absolute amount of subsidy received. For example, assume that the threshold for the subsidy is set at 200 kWh per month. Then a low-income household will receive a smaller subsidy in absolute terms than a middle-income household that consumes, say, 250 kWh per month. The higher the threshold for the subsidized

block, the greater the potential for this to happen. Another disadvantage of providing a high level of subsidy is that the greater the subsidy, the greater the incentive for fraud. It can be argued that because service is delivered through a meter, subsidies through utilities are well targeted. However, the wealthy may gain access to subsidies through multiple meters in a single residence, while poor families in group housing or apartment buildings with single meters may be taxed on their high consumption.

Apart from problems establishing the threshold for the subsidised block, there are several other shortcomings in the implementation of social tariffs. The other general disadvantage with reduced energy prices is that the energy utility or government in question must fund the recurring yearly costs that this approach involves for each household in receipt of reduced prices. In the long run reduced prices can create significant difficulties for the utility and ultimately poor households, when such an approach becomes financially unsustainable.

Funds for covering the costs of social tariffs are provided from contributions and taxes via a specially established mechanism of calculation (production of electric power quantity which is subsidized and the amount of difference between the average price and social price for households). Amounts obtained in this way can be transferred to suppliers so they can offer special tariffs below actual costs, or to the consumers so that the suppliers can provide a certain quantity of electric power at real cost. From the transparency point of view the use of tax schemes to provide funds is a desirable form of rendering help (the amount of subsidy can be monitored via the standard procedure of adopting an annual budget). However when establishing the amount and direction of allocation in rendering help, problems relating to transparency may arise. In order to avoid them, it is necessary to show the amount of subsidy in the consumer's account (whether it is financing or receiving benefit) and to continually monitor and report on the whole process.

Lifeline tariffs have the advantages of being transparent, predictable and very easy to administer. Where the relevant energy source is widely available they also have the advantage of having high coverage, since everyone who uses the fuel gets the benefit of the lifeline tariff. However this is also its major disadvantage, since the corollary is that it is very poorly targeted. In terms of the cost of providing a benefit per poor household, lifeline tariffs can be very expensive. They also directly distort prices, which can have the effect of encouraging the use of fuels that would otherwise be more expensive, with the result that consumers may end up 'locked in' to sub-optimal fuel choices via their purchase of appliances.

In addition to this shortcoming, the application of a social tariff may have other unwanted effects. Firstly, determination and application of the social tariff can turn out to be an extremely expensive intervention in the liberalised market. Secondly, the application of social tariffs can destimulate the application of other innovative and acceptable forms of giving support to vulnerable categories. In addition to a social tariff, there are other ways of giving support to vulnerable consumer categories. In practice the most frequently used forms are as follows: winter discounts, price freezes, financial support for replacement of heating elements and improvement of heating systems, debt management and specific possibilities of payment for vulnerable consumer categories, writing-off debt, free insulation and advice for improvement of power efficiency, common work with local government and charity and health care institutions.

Thirdly, the introduction of social tariffs usually means the existence of one electric power supplier, i.e. the restriction that the consumer cannot change supplier. Such presumption is contrary to the requirements of the liberalised market. As shown in the past when such an approach has been implemented, its application in the conditions of the liberalised market can cause market disturbances, especially when the number of socially vulnerable consumers is different from one supplier to another. In such conditions, suppliers will not be able to offer the same prices, which may lead to the "escape" of consumers to suppliers who are in a better position and who offer a more attractive service price. In extreme cases this method of consumer protection could result in the situation where socially vulnerable consumers stay with one supplier and all others switch to suppliers who do not offer the same extent or type of protection, thus reducing the possibility of transferring costs to categories which are able to finance the bills of the socially vulnerable. This situation is especially apparent in England, which has gone furthest in the process of market liberalisation and the introduction of competition in production activities and consumer supply.

A good solution can be to introduce a special compensation mechanism which is complementary to market business conditions. A compensation mechanism means that funds for suppliers are provided from a central administrative fund depending on the number of poor consumers and the amount of support they get. One example of such an approach is the introduction of a special tax on the use of the transmission system that is used for providing financial aid to vulnerable consumers. It is also possible to choose one supplier via tender procedure who would be responsible for the supply of poor consumers.

The application of social tariffs leads to challenges that mean finding replies to numerous questions. Firstly, how to identify users who are entitled to a social tariff? What are the criteria for vulnerable consumer status? What are the additional costs of identification and communication with consumers who are qualified as users of the social tariff? Which institution would be competent to monitor and establish support? Will the possibility of using a social tariff prevent consumers from changing supplier?[13]

The European Union does not recommend the use of tariff systems for consumer protection as in this way market competitiveness is jeopardized and consumers are discriminated among i.e. there is a transfer of costs between certain categories of consumers. However social tariffs are not expressly forbidden so a number of countries still implement them.

The majority of countries (Albania, Ukraine, Greece, Romania, and Italy[14]) that have tariff-based support have established true block tariffs or social tariffs. In Albania a block tariff system was re-introduced (2007), due to lack of funds in the state budget. The first block was set at 300 kWh and is charged near the average cost of electricity supply of 5.73 Ecent/kWh; above 300 kWh the tariff applied is 9.84 Ecent/ kWh. The threshold of 300 kWh is the determined base of the average monthly consumption – there is no gas market or other efficient alternative energy resource in Albania than can be a significant substitute for electricity.

In Ukraine there are tariff and non-tariff mechanisms for the protection of vulnerable customers. Cross-subsidies between households and other consumers are present through tariffs. The costs of energy services paid to tariffs for households are refunded to suppliers by including them in the value of the State Subsidy Certificates, added to the wholesale electricity market price. There is a mechanism of subsidy calculation for public utilities payments based on the total monthly income of the family. Privileges and subsidies compensation are paid from the local (municipal) budgets. Greece uses a tariff-based support mechanism for electricity for household consumers having four or more children. In Romania there is a tariff-based mechanism for electricity while for natural gas and heating there are non-tariff based mechanisms.

13 EBRD (2003), "Can the Poor Pay for Power? The Affordability of Electricity in South East Europe.

14 Tanić G. (1990), "Prikaz tarifnog sistema Italije", *Elektroprivreda*, Beograd.

In Croatia the government has decided to exempt tariff customers with low consumption from the price increase until June 30 2009. The revenue deficit will be compensated from the state budget. Tariff customers with a yearly consumption of under 2000 kWh will have no price increase, those with a consumption of 2001-2500 kWh/yr will have a 5% increase, and customers with a consumption of 2501-3000 kWh/yr will have a 10% increase. In total the decision will affect 45% of households.

As already mentioned, in Serbia the Electricity Power Company (EPS) discounts customers as defined by welfare centres. There is no category of social tariff within the tariff system of Serbia. The green block tariff is frequently given as an example of a social tariff. Although consumption blocks are defined, there are many similarities with other countries that apply this model of consumer protection (e.g. Romania) where the block tariff in the national tariff system is formed on the cost model: block tariffs and the relation of tariff items are based on production costs, i.e. purchase of electric power. To meet the first consumption block (up to 350 kWh) it is necessary to engage the most cost-efficient power plants with the lowest costs. If all users were to use between 350 and 1600 kWh per month it would be necessary to engage more expensive power plants, i.e. import electricity. The relationship between the cost and engaging more expensive power plants, i.e. provision of imported electricity is copied in the relationship between tariff items per block. In this way, it cannot be said that consumers who use up to 350 kWh are subsidized by other consumers, which is the main objection to the application of a block tariff.

6. Final considerations

The price increase of electric power and the liberalisation of the electricity market have meant that the issue of the protection of vulnerable consumers has been put on the priority list of national policy-making. Price increases have caused a part of the population to be unable to pay their bills, while market liberalisation has asked for modification of previous protection modalities by means of social tariffs or by giving discounts to vulnerable consumer categories.

The introduction of competition in power production and sales and the possibility for consumers to choose the most favourable power supplier have imposed the need to deal with this issue in a completely different way. Regionalization and globalization of the power market also impose certain requirements. Taking into account the differences in social-economic wealth as well as the specific situation

of each country in terms of power source availability and power alternatives, this problem has been recognized as a main problem in the implementation of the concept of general liberalisation. Analyses and studies that have dealt with this topic have noticed that there is a considerable difference between the countries not only in the method and extent of protection of vulnerable consumers, but also in the definition and criteria for establishing this category of consumers.

It is obvious that in new conditions traditional forms of consumer protection have to undergo changes and to be adjusted to the requirements of the liberalised market. Various forms and modalities of implementation of the social block tariff, price discounts, etc. can be treated as acceptable solutions only on a short-term basis, until the electric power market starts in the full sense. In conditions when it is completely liberalised and when competition becomes rampant, these forms of protection of vulnerable consumer categories should be modified and adjusted in order not the become a bottleneck in the further development of the energy sector. In these conditions the role of the state becomes essential and its function of protecting socially vulnerable consumers has to be extended to the field of energy.

Reform of the energy sector should be accompanied by measures to compensate households for the diminished household budget this would normally entail. At present, there is no standard approach for dealing with this issue in the Energy Community. Income support mechanisms must be developed taking into account local characteristics, including income levels and the extent of the household price increase brought about by reform. The participants must address key issues, including the establishment of criteria for determining eligibility for support as well as the support mechanism.

Non-tariff based solutions (typically using the / introducing a social security system) should be preferred as they do not obstruct market forces. However, tariff-based solutions (regulated tariffs for certain well defined consumer groups) might for various reasons be the only available option – at least for a period of time. The timeframe of the transition period and the criteria defining this period must be carefully set, foreseeing regular assessments of the results achieved and allowing for a review of the steps to be taken to achieve the target – allowing for development of market prices. Firstly tariff-based solutions must be designed in order to have a minimum of obstructive influence on the market. Secondly it must be envisaged that any below cost solution (including a reasonable return on capital) will require compensation to the energy companies subject to this regulation, and the financing of this (PSO) compensation must be addressed.

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