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## COMPARING RESTRUCTURING STRATEGIES OF ELECTRIC POWER COMPANIES IN THE EU AND SERBIA\*

Poređenje strategija restrukturiranja elektroenergetskih  
kompanija u Evropskoj uniji i Srbiji

### Abstract

The electric power sector is the most important and the most complex segment of the entire energy system. It consists of four interrelated operations: electricity generation, electricity transmission, distribution of electricity, and supply to final customers. Guided by the positive experience of other countries worldwide, and believing in the superiority of market competition versus monopoly, the EU started the restructuring process of this sector twenty years ago with the aim to create a single competitive electricity market. Bearing in mind the complexity of the activity itself and great differences between the electric power systems of the Member States leads us to conclude that the creation of a single electricity market of the EU is a very complex and time-consuming process. For this reason, the liberalization of the electric power market has been one of the most radical changes and major challenges for the EU since its foundation. Restructuring process usually includes following activities: corporatization and privatization, change of top management and introducing of performance contracts, unbundling of enterprises, outsourcing, etc.

In 2004 with the adoption of the Energy Law and Energy Sector Development Strategy according to requirements of the EU Electricity Directives, the implementation of reforms of Serbian electric power sector started. The process is just partially completed. The electricity market in Serbia has been opened since 1 January 2013. All electricity customers who are connected to the transmission system have lost their right to public supply, or supply at regulated prices. Final customers of electricity have the right to freely choose their supplier on the market. The exceptions are households that will exercise their right as of 1 January

2015. Taking into account the fact that reforms in Serbia concerning the electric power sector are overdue, it has the possibility to learn from the experience and mistakes of the EU electric power companies and to implement reforms successfully.

**Key words:** *electric power companies, electricity market, restructuring strategies, corporatization, Electric Power Industry of Serbia*

### Sažetak

Elektroenergetski sektor je najvažniji i najkompleksniji deo celokupnog energetskog sistema. Sastoji se od četiri međusobno povezane delatnosti: proizvodnje, prenosa, distribucije električne energije i snabdevanja krajnjih potrošača. Vođena pozitivnim iskustvima drugih zemalja širom sveta i verujući u superiornost tržišne utakmice naspram monopola, EU je započela proces restrukturiranja ovog sektora još pre dvadeset godina sa ciljem da stvori jedinstveno konkurentno tržište električne energije. Reč je o veoma kompleksnom i dugotrajnom procesu imajući u vidu tehnološku kompleksnost same delatnosti, kao i velike razlike između elektroenergetskih sistema zemalja članica. Stoga, liberalizacija tržišta električne energije predstavlja jednu od najradikalnijih promena i najvećih izazova EU od njenog osnivanja do danas. Proces restrukturiranja obično uključuje sledeće aktivnosti: korporatizaciju i privatizaciju, promenu top menadžmenta i ugovore o performansama, razdvajanje preduzeća, seljenje aktivnosti itd.

Proces reformi elektroenergetskog sektora Srbije je krenuo dosta kasnije, 2004. godine, donošenjem Zakona o energetici i Strategije razvoja energetike u skladu sa zahtevima direktiva EU. Ovaj proces je samo delimično završen. Tržište električne energije Srbije je otvoreno od 1. januara 2013. Svi kupci električne energije koji su povezani na prenosni sistem izgubili su pravo na javno snabdevanje, odnosno na snabdevanje po regulisanim cenama. Krajnji kupci električne energije imaju pravo da slobodno biraju svog snabdevača na tržištu. Izuzetak čine domaćinstva

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koja će to pravo ostvariti od 1. januara 2015. godine. Imajući u vidu činjenicu da kasni u procesu reformi, Srbija ima mogućnost da uči na iskustvu i greškama elektroenergetskih kompanije iz zemalja EU i da dalji put reformi sprovede na najbolji mogući način.

**Ključne reči:** *elektroenergetske kompanije, tržište električne energije, strategije restrukturiranja, korporatizacija, Elektroprivreda Srbije*

## Introduction

Electricity is the existential source and driver of modern civilization. It represents the most flexible and most commercial form of energy. Automation, computerization, the development of telecommunications, as well as the continuous pursuit of comfortable and easier work, result in growing electricity needs [18]. Because of its socioeconomic importance, electricity is often viewed as a public good, and the electric power industry is organized as a monopoly activity. The cost of electricity is an inevitable component of the generation cost of each product and service, but also of the cost of living in general. The price of electricity is an instrument that protects the standard of living, encourages the development of certain industries and increases the competitive position of the entire economy. Therefore, the availability of electricity and its price are in the focus of macroeconomic policy creators.

The electric power sector is the most complex segment of the overall power system. It consists of four interrelated activities: electricity generation, electricity transmission, distribution of electricity, and supply to final customers. The complexity of the electric power system results from the technological complexity of the process but also from the fact that its generation, transmission, and distribution take place simultaneously. Unlike oil, gas and other energy generating products, electricity cannot be stored and spent later, when the need arises. There must be a continuous balance between the supply and demand for electricity which is why its generation is effected in accordance with the foreseen needs.

Electricity generation includes its generation in hydro power plants, thermal power plants, thermal power plants – district heating plants, and other power plants that use renewable energy sources. Electricity is generated by transforming various forms of energy (thermal, nuclear,

wind, tide, sun, etc.) or energy generating products into electricity. Electricity transmission is transmission of electricity from its producers to the distributors and/or final customers through a high-voltage grid. The distribution of electricity is the transmission of electricity via low-voltage and mid-voltage grids to the final customers. The supply to the final customers includes all the activities related to the sale of electricity and provision of services to final customers.

## Characteristics of the electric power sector in Serbia

The electric power sector is a capital-intensive activity that carries a number of risks: a long period of capacity building (2-7 years on average), fluctuations in fuel prices, electricity price changes, rigorous regulatory requirements, costs of externalities, freedom to choose suppliers, etc. The absence of competition and low price elasticity of the demand for electricity provide room for monopoly electric power companies to transfer the costs increased due to their inefficiency to the consumers, taxpayers [16].

Main characteristics of Serbian electric power system are: electricity market liberalized for all customers except households and small companies, low electricity price on regulated market, slow growth of electricity demand<sup>1</sup>, modest efforts for faster growth of renewable electricity generation, opened for foreign investments in electricity generation, good electricity generation mix, obsolete generation capacities, good power interconnections with neighbouring countries [1, p. 5].

Serbia is one of the few countries in the region whose electricity export exceeds its import. During the spring and summer, Serbian electric power system produces greater amounts of electricity than necessary, which allows for significant export (about 15% of total generation), while it is imported during the winter months. The total generation capacity of the electric power system of Serbia constitute sources of power amounting to 7,120 MW, of which lignite thermal power plants comprise 55% of the capacity, hydro power plants 40%, while the remaining 5% are thermal power plants that use crude oil and/or natural gas. The

<sup>1</sup> Except in recent years with a small decrease in demand caused by financial crisis

electric power distribution system of Serbia consists of a 141,482 km long network, transformers whose power is 25,413 MVA and meters infrastructure for approximately 3.5 million customers. The electricity transmission system is an 8,932 km long grid.

Total number of electricity customers in Serbia is about 3.5 million, 3.1 million of which are households. At the same time, the share of households in total electricity consumption in Serbia has been over 50% (in 2013, it amounted to 53%) in recent years, almost the highest in the region<sup>2</sup>. In the EU countries, the share of households in total consumption of electricity usually does not exceed 30%. The electricity balance of Serbia for the last three years is shown in Table 1.

Serbia has the lowest electricity prices in Europe. The unrealistically low price of electricity has led to multiple consequences. First, the price of electricity covers current operating costs and partly the costs of the depreciation of fixed assets. Such a pricing policy does not provide the necessary funds for the construction of new facilities and the purchase of new technology, which are preconditions for development. This is demonstrated by the fact that

the age of the hydro power plants ranges between 38 and 47 years, and the thermal power plants between 24 and 47 years. Second, substantial resources are invested in the service and maintenance of the existing technology which further increases the costs of the whole process. The negative impact on the environment requires additional investment in order to meet environmental standards and obtain environmental permits. Third, the price level is counterproductive in attracting investors. Finally, low electricity prices encourage wasteful consumption, which is reflected in (bad) energy efficiency indicators in Serbia.

A key player and holder of the Serbian electric power system is a public enterprise Electric Power Industry of Serbia (hereinafter referred to as EPS). EPS is a vertically organized company that is 100% owned by the Republic of Serbia. It has founding rights in 13 companies and three public enterprises in Kosovo and Metohija<sup>3</sup>. The main activity of EPS is the supply of electricity, while electricity generation, electricity distribution and the distribution system management, generation, processing and transportation of coal, steam and hot water in combined processes is performed in affiliated companies

**Table 1: Energy Balance of the Republic of Serbia for the period 2011-2013**

Description	2011 GWh	2012 GWh	2013 GWh
Import	6,701	5,781	4,077
Export	6,979	5,392	6,614
<b>Gross inland consumption</b>	<b>-278</b>	<b>389</b>	<b>-2,537</b>
<b>Transformation input</b>			
<b>Transformation output</b>	<b>29,357</b>	<b>26,885</b>	<b>29,024</b>
Thermal power plants	28,672	26,275	28,620
(TE-TO) / CHP	455	439	202
Autoproducers	230	171	202
Exchange and transfers (hydro energy)	9,243	9,914	10,853
<b>Consumption in the energy sector</b>	<b>4,487</b>	<b>4,412</b>	<b>4,936</b>
Losses	5,844	5,609	5,501
<b>Energy available for final consumption</b>	<b>27,991</b>	<b>27,167</b>	<b>26,903</b>
<b>Final non-energy consumption</b>			
<b>Final energy consumption</b>	<b>27,991</b>	<b>27,167</b>	<b>26,903</b>
Industry	7,147	6,614	6,769
Construction	326	317	310
Transport	529	492	478
Households	14,665	14,517	14,146
Agriculture	321	309	301
Other users	5,003	4,918	4,899

Source: [27], [28], [29]

<sup>2</sup> Record household consumption was recorded in 1990, when it reached 60% of total electricity consumption

<sup>3</sup> Since 1999 EPS has no longer been managing the capacities in Kosovo and Metohija

established by EPS. The development of EPS will be the subject of analysis later.

## The regulatory framework for the electric power sector in the EU and Serbia

Earlier regulation of the energy sector was based on the predominant belief that the sources of primary energy (such as coal, oil, gas) were natural resources that needed to be controlled by the state. Given the fact that the primary forms of energy actually provide input for generating electricity, the electric power activity was treated in the same manner. Many economic theorists who focus on the theory of monopoly have pointed out that it is wrong to equate the electric power industry with a natural monopoly. Practice has shown that monopoly as a model in the organization of the electricity market is not effective either in terms of the efficiency of the process or in determining the real price of electricity. Systemic deficiencies of monopoly and technological advances in the generation and transmission of electricity have led to the abandonment of the existing legal provisions or replacement of economic regulations with competition in the segments where it is possible to do so [16], [18].

A pioneer in the liberalisation of electrical power market is Chile, which implemented changes in the mid-1980s. Subsequently, this practice has been applied by many Latin American countries, followed by individual states within the USA. At the time of formation of the EU, the liberalization wave had largely spread and come to Europe. Guided by the positive experiences of other countries (notably the UK), and believing in the superiority of market competition versus monopoly, the EU opted for a single market for electricity. The creation of a single electricity market of the EU is very complex and time-consuming process, bearing in mind the complexity of the activity itself but also the great differences between the electric power systems of the Member States. For this reason, the liberalization of the electric power market has been one of the most radical changes and major challenges for the EU since its foundation.

After several years of preparations, in 1996, the EU adopted the First Electricity Directive (Directive 96/92/

EC) which marked the official beginning of the creation of the internal European energy market. This Directive laid the foundations and initiated the process of liberalization and reform of national legislations of Member States. The guidelines were defined in such a manner that allowed for the Member States to choose between different options. For example, the Directive provides for the right to choose between three different solutions for access to operating systems: regulated, negotiated or single buyer. Soon, it became obvious that such an approach did not lead to synchronization and equalization of national regulations of the EU Member States [4].

The Second Directive (Directive 2003/54/EC), which was adopted in 2003, had more binding elements and reduced the discretionary powers of the national legislations. It set a deadline of July 2007 when all consumers can freely choose their supplier of electric power. Compared to the first directive, it comprised a number of additional requirements: mandatory legal separation and unbundling<sup>4</sup> of grid operating activities from generation and supply (management unbundling and separate accounting are not enough); using regulated access to the network (no choice); establishing an independent regulatory body responsible for implementing regulations; promotion of competition in the segment of generation and so on [5], [16, p. 108]. An overview of key demands from the first and second directives and regulations before the start of reforms is given in Table 2.

In order to introduce competition in the electric power market, it was first necessary to separate market-oriented activities such as the generation and sale of electricity from its transmission and distribution as natural monopolies. Each new requirement defined by the directives had to pass the test phase so that it could be applicable for all in the next iteration. This evolutionary path is quite understandable if we take into account the number of Member States and their differences. The best examples of this are the leading European countries: Germany, France and the United Kingdom. Germany did not have nationalized monopoly electricity market

<sup>4</sup> The deadline for the completion of legal unbundling of the transmission network operator was 1 July 2004, and for the operator of the distribution network, it was 1 July 2007

Table 2: EU Electricity Directives

	Most common form pre-1996	1996 Directive	2003 Directive
Generation	Monopoly	Authorisation Tendering	Authorisation
Transmission (T) Distribution (D)	Monopoly	Regulated TPA Negotiated TPA Single buyer	Regulated TPA
Supply	Monopoly	Accounting separation	Legal separation from T and D
Customers	No choice	Choice for eligible customers (=1/3)	All non-household (2004) All (2007)
Unbundling T/D	None	Accounts	Legal
Cross-border trade	Monopoly	Negotiated	Regulated
Regulation	Government department	Not specified	Regulatory authority

Source: [19]

but mixed public-private energy market. Even before the start of the reform, it had privately-owned companies with public or mixed companies being the predominant ones. France, like our country, had a nationalized market (since 1947) dominated by one state-owned enterprise, Electricite de France (EdF). A complete opposite of which was the United Kingdom, which liberalized its market and privatised the electricity supply industry already in the 1980s [3].

Implementation of the Second Directive left a number of unresolved issues such as the high degree of market concentration, lack of cooperation and trade across national borders, favouring of national players, lack of transparency, etc. In order to rectify the deficiencies identified, the European Parliament adopted a new set of measures in 2009, the so-called Third Energy Package, which comprises two directives and three regulatory decisions. The documents relevant for the activity of the electric power sector are: Directive 2009/72/EC - concerning common rules for the internal electricity market, Regulation No 714/2009 on conditions for access to the network for cross-border electricity exchanges, and Regulation No 713/2009 on establishing an Agency for the Cooperation of Energy Regulators. The main objectives of the Third Package are [16, p. 122]:

- effective unbundling of the transmission network in terms of ownership unbundling the Independent System Operators (ISO) and the Independent Transmission Operator (ITO),
- establishing a European regulatory agency (ACER) whose function is to coordinate national regulators and

also to serve as an advisory body to the Commission for Energy,

- cooperation between transmission system operators (ENTSO),
- ensuring greater powers for national regulators in order to maximize their independence from governments and allow better control of the operation of the electricity market.

When it comes to Serbia, the energy sector reform started much later, in 2004, with the adoption of the Energy Law and Energy Sector Development Strategy. Through this law, the national legislation incorporated the requirements of the first two EU directives and began the process of liberalization of Serbian electricity market. Serbia became a full member of the regional energy community a year later. The Energy Community Treaty was signed in Athens obligating all state members to open completely the electricity and gas market until 2015. Having in mind rapidly changing European energy policy, domestic regulations have been changed too. In 2011, the government adopted the new Energy Law in accordance with the main requirements from the Third Energy Package [15].

Electricity market includes: bilateral market<sup>5</sup>, balancing market<sup>6</sup> and the organized<sup>7</sup> electricity market.

<sup>5</sup> Bilateral market is a market where market participants buy and sell electricity based on agreements on electricity sales and purchase

<sup>6</sup> In the balancing market, the transmission system operator buys and sells electricity from market participants to balance the entire system

<sup>7</sup> The market operator organizes and administers organised electricity market and its liaisons with organized electricity markets of other countries, in accordance with international commitments

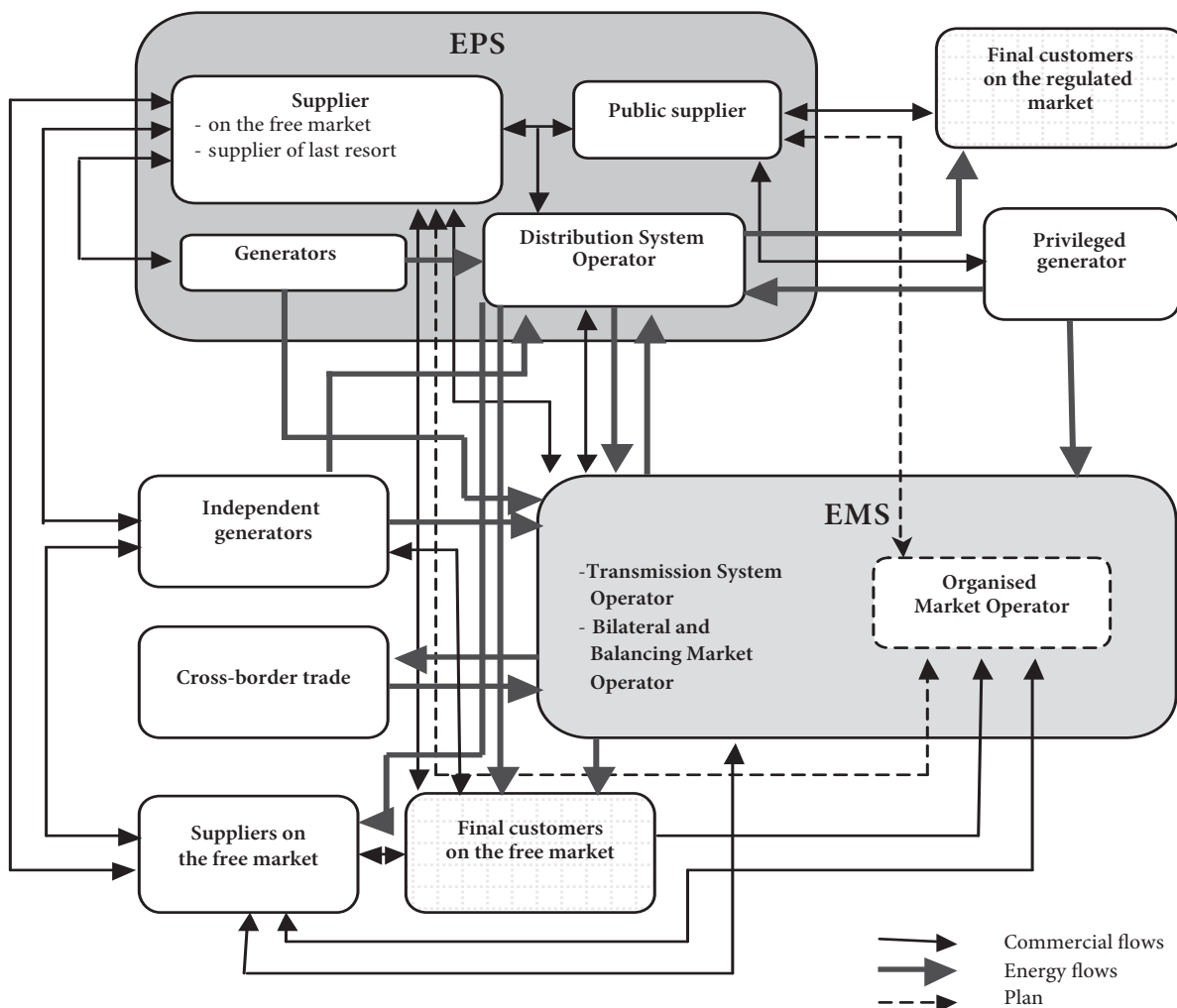


It can comprise the following participants: the generator, the supplier, public supplier, the final customer, the transmission system operator, the distribution system operator and market operator [11]. The structure graph of the electricity market in Serbia is given in Figure 1.

Unlike the oil market which has been liberalized since 1 January 2011 [20], the electricity market in Serbia has been opened since 1 January 2013. All electricity customers who are connected to the transmission system have lost their right to public supply, or the supply at regulated prices. Final customers of electricity have the right to freely choose their supplier in the market. The exceptions are the households that will realize this right as of 1 January 2015. Customers who are not eligible for public supply of electricity purchase their electricity from the suppliers on the free market.

Progress in the liberalization of the electricity market is certainly there, but it is far smaller than expected. At the very beginning of this process, it was expected that the effects of liberalization of electricity would be similar to the effects of liberalization of telecommunications, another network-based infrastructure activity. Telecommunications have experienced expansion and competition has led to an increase in quality and a decrease in prices of services. However, the introduction of competition in the electricity market has not led to such effects. In order to achieve positive effects of the introduction of competition in the electricity sector, it is necessary to meet three conditions [18, p. 260]: 1) there must be an excess of generation capacity, i.e. the amount exceeding the level of demand that would further encourage competition and the competitive cost reductions; 2) a sufficient number of competitors that

Figure 1: Electricity market in Serbia



Source: [25]

prevents an oligopoly agreement; 3) the amount and level of generation costs should be similar, and the transmission cost should not be an obstacle to competition between geographically distant generators. It is obvious that these conditions have not been met.

Difficulties in implementing reforms in the electricity market, both in the EU and in our country, are the consequences partly due to the state's industrial policies that encourage particular, strategically important industries. It is a new concept of economic policy that is focused on strengthening the competitiveness of domestic industry through supporting its growth and development. According to the Reindustrialization Strategy of Serbia, the energy sector is at the top of the list of priority sectors with comparative advantages [6].

We must note that nowadays no one is denying that there are numerous weaknesses of regulation. However, this certainly does not mean that deregulation is always better than regulation, and the experience in the case of the electricity market is the best example for this. The issue of (de)regulation is actually an issue of its degree. Consequently, the prevailing attitude is that crisis 2008-cannot be overcome by undertaking the measures that were its direct causes (such as deregulation, deindustrialization, securitization and outsourcing) [7, p. 11].

### Elements of restructuring strategies of electric power companies in the EU

Experience shows that public enterprises (as well as state-owned enterprises) that obtain a monopoly position often operate at a loss and are not focused on consumers, neither do they work to improve the quality of their products. In addition, the state often uses these companies for making populist decisions, develops non-core activities, and restricts the impact of commercial market and labour market. Also, they have easier access to financial markets (because the state is the guarantor of their repayment), and there is no big risk of bankruptcy and liquidation of those companies. For these reasons, and in order to improve the efficiency of the sector in the achievement of general interest, public enterprises go through restructuring processes.

From the perspective of our research, it is important to note that the Law on Public Enterprises of the Republic of Serbia stipulates that public enterprises are established by the state in order to perform activities of general interest which include, among other things, the production, transmission and distribution of electrical energy [23]. In this context, this paper further discusses the need and possible elements of the restructuring strategy of PE Electric Power Industry of Serbia (EPS) as the pillar of the power system of the Republic of Serbia. The experience of countries in the European Union is a solid starting point for the formulation and implementation of such a strategy.

Implementation of restructuring process includes several major activities:

- Corporatization and privatization;
- Change of top management and introducing of performance contracts;
- Unbundling of enterprises;
- Outsourcing;
- Downsizing.

Prior to the beginning of the restructuring, it is necessary that there is a willingness and vision of key stakeholders, which in this case is the state (government). The consensus on the need of restructuring more easily is achieved if the company has entered a phase of strategic, rather than operational or tactical crisis. "Hopelessness of the desperate situation" makes drastic changes in the business portfolio, marketing, organization, management, finance, or technology more obvious.

More or less organisations which are part of the electric power industry in all countries across the globe, as well as in the European Union, had the characteristic of a vertically integrated natural monopoly, which was owned by the state. A great number of electric power industries were organized within a single economic entity – a company. Solid control of the state was the main feature of managing this sector. That was until the 1980s, when the belief that the electric power industry should be viewed as a natural monopoly, became forsaken. This led to the unbundling of production and supply of electricity and their transformation into competitive businesses, while the transmission continued to remain regulated by the state [16, p. 25]. This was followed by privatization and

corporatization as the initial elements of the strategy of restructuring electric power companies.

Company Electricite de France (EdF) was founded in France in 1946 by nationalization of 1,450 companies in the field of generation, transmission, and distribution of electricity and gas [31]. Consolidation of capacity within a single state-owned enterprise enabled further large investments, especially in the field of electric power transmission. These investments were followed by the growth in demand for electricity, which almost doubled every 10 years. After the global oil crisis in 1974, France in the name of gaining energy independence started the construction of nuclear power plants which became the dominant source of energy in this country. In 1991 EdF transformed into a joint stock company, and in 2004 this company was transformed into a limited company. Today, the French government owns 84.49% of the company. Viewed by the market value, EdF is the world's largest electric utility, and it is worth over USD 75.5 billion [26]. Revenues from sales in 2013 amounted to EUR 75.6 billion, and the number of employees was over 158 thousand. The second world's largest electricity utility comes from France, too. It is GDF Suez with a market value of USD 64.6 billion and an annual turnover of over EUR 81 billion. In this company the French government holds 33.6% of ownership.

Italian ENEL, according to the market value is the third world's largest electricity utility with a value of USD 53.2 billion. Revenues of the company in 2013 amounted to over EUR 109 billion. The company was created by nationalization and unification of more than 1,270 companies in the field of electricity. In 1992 ENEL was transformed into a joint stock company. It has been listed on the Milan Stock Exchange since 1999. After the partial privatization, the Italian government has remained the largest shareholder, but not the majority. It owns 31.2% of the company [9].

The German electricity market is dominated by the companies E.ON and RWE. E.ON was founded in June 2000 by the merger of VEBA and VIAG (founded in the 1920s). Those enterprises were privatized in the 1960s and 1980s. Nowadays they are investor-owned companies. RWE is a company that was for many years owned by the local

government. It is founded in 1898, and its shares have been quoted on the Berlin Stock Exchange since 1922. In terms of revenues from the electricity sales, it is in the third place in Europe, and the first in Germany. In 1914, about half of the shares of the company were in the hands of local government, and the other half in the hands of private companies [24, p. 135]. Today, the largest number of institutional investors comes from Germany (about 32%) and the largest shareholder is RWEB GmbH, in which municipal shares are pooled together, culminating at 15%.

Great Britain also underwent a similar scenario regarding electrical power companies. They have their electric utility made up of three sectors which were found in private ownership: transmission network, regional distribution network, and production (excluding nuclear power stations) [16, p. 42].

In the Czech Republic, electric power industry was organized as a vertically integrated company until 1990, when the restructuring program was launched. First of all, they unbundled regional distribution companies, which were gradually privatized. Production and transmission were an integral part of CEZ for more than nine years before separation. Nowadays, CEZ is a company with majority state ownership (69.78%), although there were attempts to privatize it. Its development strategy significantly relies on mergers and acquisitions, and at the moment they are expressing interest in expanding into the countries of Central Europe [2]. Here, we can mention even the Spanish company Iberdrola, which is owned by several institutional investors, the largest of which is Qatar Investment Holding. Other significant shareholders are ACS, Kutxabank and Bankia [17]. Also, there is a Swedish company Vattenfall as one of the largest producers of electricity and heat. The company is 100% owned by the state [34].

Considering ownership structure of presented electric power companies, it can be seen that in one group of these companies the state is getting out of the ownership, while in other companies it retains 100% of ownership. Also, globalization and international mergers and acquisitions activities have not bypassed this sector, and we can talk about the fact that on the global electricity market there are already strong multinational companies emerging.



They base their growth not only on organic growth, but also on M&A and strategic alliances.

However, the state's concern is the protection of its citizens' interests, which relate to the quality of the delivered product, correctly formed prices, business sustainability (avoiding bankruptcy, etc.). This leads to the conclusion that citizens as owners can influence public companies only indirectly (through voting in elections and through the formation of a new government). Again, citizens lack the mechanisms of control over the ministers who are members of the government [32].

Corporatization is seen as one of the initial steps in the restructuring process. This is a translation of state-owned enterprises into the form of joint stock company or the form of a limited liability company, i.e. the formation of a separate legal entity independent of the state. Corporatization usually precedes the privatization process, but it can also be implemented independently. In any case, it facilitates the transformation of business operations on a commercial basis and reorganization processes that are common for the company as a business organization, not a social category.

Corporatization of public enterprises aims to solve several substantive issues. These include the appointment of an agent who will represent the state in consultations with the management as well as the improvement of corporate governance. State agent can come from [33, pp. 9-11]:

- the relevant sector ministries (in our case the Ministry of Energy) – decentralized or sector model,
- two ministries; one that controls all public companies (usually the Finance Ministry or the Ministry of Economy and Finance) and the sector ministries – the dual model, or
- one ministry or agency that is responsible for these companies (the Finance Ministry and the Ministry of Industry) – a centralized model.

Establishing clear ownership relations and corporate governance bodies that will enable owners to exert a strong pressure on managers to meet their goals is a prerequisite for further steps in the restructuring process.

The change of top management is considered as one of the most important steps in the process of restructuring. Such a scenario is almost inevitable in the situation where

the existing management led the company to a crisis. When the crisis is caused by external reasons, it is not uncommon that the existing top management runs the recovery process [8, p. 450]. These companies should be headed by experienced and motivated managers with expertise in running similar businesses. They have to create the vision and form a team that will lead changes. The new management should have a strong support from key stakeholders. In the case of electric power companies with dominant state ownership, it means the support of the government or the ministry.

In addition to the support, the new management should receive an appropriate reward for their commitment and achievement of goals. It is common that in these situations managers sign performance contracts with the government. Under these contracts, the government sets strategic goals, without identifying the detailed plans that lead to the achievement of the goals. Operational plans remain at the discretion of the managers themselves. In this way, the state withdraws from the direct management of the company. However, the biggest benefit of these contracts is reflected in the fact that they establish a language of communication between the government and managers in terms of the goals, sales revenue, profit, international activities, investments, and quality policy. An excellent example of the introduction of performance contracts in an electric utility is French EdF in 1970. The state, in its supervision, limited the determination of energy policy and completely excluded the possibility of subsidizing. Managers with clear agreements about their performance led EdF to the position of leading electric utility not only in Europe but also in the world [25, p. 23], [25, p. 116].

The performance system included in a contract should encompass not only accounting but also economic performance measures, such as Economic Value Added (EVA), Market Value Added (MVA), Cash Flow Return on Investment (CFROI), Total Shareholder Value (TSV). All these measures are closely associated with the real value creation that belongs to the owner and at the same time take into account the risk to which the business of an electric utility is exposed.

In addition to economic performance measures, i.e. financial measures, it is necessary to define non-financial

(operating) performance measures. These measures are taken from the perspective of consumers, business processes and development of intangible assets, which today largely affect the value creation. The conclusion is that it is logical to define performance contract using the Balanced Scorecard. A prerequisite for the use of this technique is that the strategy is described by the strategy map that has been previously developed [21], [22].

The separation of new companies from an electric power company represents a kind of disintegration of vertically integrated company. The aim is to achieve that electricity producers supply the electricity transmission company; which allows the transmission company to deliver electricity to companies for its distribution; distribution companies still deliver electricity to the enterprises that have signed electricity supply contract with customers. Unbundling of utilities allows the inclusion of several companies in the electric power system, thus achieving greater competition.

The companies from the power utilities that are vertically integrated in the process of restructuring implemented various forms of separation [16, p. 109]:

- legal unbundling of the transmission system and distribution of other activities,
- functional unbundling of distribution,
- accounting unbundling in terms of separate accounts between the operators of transmission and distribution.

Unbundling of the company may precede privatization. The good side of the sequence of activities in the restructuring process is that in this way monopoly is neutralized. A successful example of such a sequence of activities is found in Bulgaria, where seven of the distribution operators (new separated companies) were privatized in a way that they sold 67% stake in the companies to CEZ, E.ON and EVN, whereby the country achieved total revenue of EUR 693 million. Otherwise, the privatization would lead to the transmission of monopoly from the hands of the state to the hands of investors.

Restructuring, among other things, includes downsizing. Downsizing refers to the reduction in the number of employees in accordance with the new technological needs. In terms of job losses, the EU-15 cut 246,000 jobs in the period 1995-2000. New Member States experienced

a loss of 44,000 jobs in the period 2000-2004. There have been reductions in jobs with lower qualifications, then middle-level managers, while at the same time a growth in the number of higher-level managers, professionals, lawyers and technical experts has been recorded [30, p. 5].

However, restructuring (including downsizing) should not be inhumane, but socially responsible (SRR). Numerous examples of SRR best practice can be observed in the cases of the above-mentioned energy companies from developed countries, but also of the companies originating from developing countries. SRR considers several areas: social dialogue, anticipation and transparency, training, retraining and redeployment, health and psychological issues, the role of public authorities and cross border learning [30, p. 8].

Social dialogue implies an active partnership between management and employees. Employees certainly want to express their opinion on issues that affect them. An effective social dialogue is one that is timely, active, and achieved through trade unions. In addition, communication is vital to the efficient SRR. In the case of EdF, the restructuring strategy was first presented to trade unions, and then to all employees. Also, comprehensive communication means sharing information about required skills in the new company, as well as the assistance in finding new employment for the employee or his/her spouse. In Poland, Electrownia Łaziska formed Restructuring Unit which dealt with the process. The representatives of the government, primarily from the Ministry of Economy, were involved in this process. They presented predictions about the possible changes important for the company over the next 5-15 years. In CEZ, social dialogue with trade unions takes place on a monthly basis. For instance, in the case of Ireland's company Electricity Supply Board (ESB) ten years prior to market opening, i.e. in 1994, the representatives from the Department of Transport, Energy and Communications and the relevant trade unions negotiated a tripartite agreement to manage job losses and cost reductions. As for RWE, a minimum set of standards for dialogue over restructuring was defined in the Restructuring Agreement. In the early 1990s, after the transition to commercial operations, Vattenfall made a projection that about 1,200 jobs would be terminated.

Because there had not been any experience of dealing with the reduction in the number of employees, the company created the so-called “expert group” that developed a strategy for cooperation with trade unions regarding the issues of reducing the workforce and diminishing resistance to change [30, pp. 24-29].

Redeployment and relocation of employees have a special place in the SRR. It is a way of moving them to the areas of the organization that are stable or growing. It implies re-skilling and retraining employees. It would be interesting to mention the case of the retention of older employees in Vattenfall AB in Sweden. In that company, for example, the employees aged over 58 years have the opportunity of working 80% of working time for 90% of their personal earnings. Moreover, their experience is used as a basis for the mentoring program for younger workers [30, p. 36]. On the other hand, ENEL established its own training company Sfera, which organizes the learning of foreign languages, IT, management and soft skills, as well as technical and professional training.

SRR can also imply the involvement of public authorities. Every restructuring has its implications for the local economy. Local municipality can take important role in solving problems caused by restructuring. For example, Electrable Polaniec in Poland got support from local municipality in identifying training and employment opportunities, information about tax, supplying staff to provide advice to affected employees, etc. Finally, SRR provides a possible insight into other people’s experiences in restructuring. For example, Eesti Energia in Estonia organised for their representatives (management and unions) the visits to ESB and CEZ that had undergone restructuring, thus providing them with the opportunity to learn from the experience of others.

Downsizing is often a consequence of outsourcing. Outsourcing means that certain activities are moving outside the company, so they are now performed by suppliers. Ideally these activities are now executed not only in cheaper way, but also in a more efficient way. Outsourcing was initially applied to the services such as cleaning, catering, and security, and later to network maintenance, meter reading, information technology, call centres, billing, accounting, and transport.

## Restructuring process of the PE Electric Power Industry of Serbia

The restructuring of a domestic electric power entity should follow the logic of the restructuring of public enterprises (state-owned enterprises) as well as the specifics of the electric power sector. In our conditions, the rationale for the restructuring lies on two grounds: the current untenable situation in these companies and the need for the adoption of standards and adjustment of regulations governing this area in the EU accession process. The implementation of institutional and structural changes that are based on the directives of the European Union began in July 2006, when the Republic of Serbia ratified the Treaty on establishing the Energy Community of South East Europe.

Electric Power Industry of Serbia was established as a public enterprise in 1991. It was created as a vertically integrated company, which included three electro-economic activities: generation, transmission, and distribution of electricity. Electric Power Industry of Serbia has founder’s rights in 13 subsidiaries and three public enterprises in Kosovo and Metohija. As of June 1999, EPS has not been managing its capacities in Kosovo and Metohija.

The process of restructuring of the electric power system started in 2003 with the separation of non-core activities from EPS. They first separated underground coal mines and established a separate public company, the Underground Coal Mining Company (PE PEU), while other non-core companies were established later. Following the adoption of the new Energy Law, in accordance with the EU directives, the government of the Republic of Serbia adopted a decision on the formation of two independent companies: Electric Power Industry of Serbia (EPS – Elektroprivreda Srbije) for the generation, distribution and trade in electricity and Serbian Transmission System Operator (EMS – Elektromreža Srbije)<sup>8</sup> for the purposes of transmission and managing of the transmission system. Since mid-2005, these two companies have operated

<sup>8</sup> PE EMS is engaged in the transmission and managing the transmission system, including the activities of the operator and organiser of the electricity market. Furthermore, it is responsible for the allocation of rights to use the available cross-border transmission capacities on interconnection lines of the electric power system of Serbia

independently. The process of restructuring led to a decrease in the total number of employees from 60,000 in 2001 to about 35,000 at the end of 2009 [1, p. 173]. In 2013, the number of employees was 36,038 (including Kosovo and Metohija).

In 2012 the Government of the Republic of Serbia adopted the Framework for the Reorganization of PE EPS, while the Energy Law formed the basis for its reorganization. It provided the appropriate conditions for further liberalization of the electricity market. In accordance with this plan in 2013 the company EPS Snabdevanje was founded. It is a public supplier of electricity customers at regulated prices. The establishment of EPS Snabdevanje split the business of supply and distribution of electricity. The unbundling was necessary for enabling the second phase of the market opening and the entry of other suppliers that can, as of 1 January 2014, supply all customers except households and small customers (available since 1 January 2015). All suppliers use the service of distribution operators. There are five companies for electricity distribution: Elektrovojvodina, EDB, Elektrosrbija, Centar, and Jugoistok.

For EPS a real battle on the market starts as of 1 January 2015. In fact, that date marks the beginning of the third phase of liberalization of the market, where small customers (households) can choose their electricity supplier (after two waves of market liberalization that allowed all companies in the high and medium voltage segments to enter into a contract with any supplier of electricity, EPS has retained 97% of the market share). Market liberalization in other countries has led to lower prices for households. However, in Serbia the current electricity price is below the market price and represents a kind of instrument of social policy that leads to irrational consumption of electricity. Existing electricity price ensures only the coverage of current expenditures and minimum investment in maintenance. For this reason, we can anticipate the growth of electricity prices, which will have positive consequences for the further implementation of the restructuring strategy, particularly in terms of growth and investments. Growth and investments can be implemented independently or with the support of a strategic (or financial) partner. However, it is impossible

to attract any partner if real prices do not allow for the generation of profits.

On the other hand, it is not impossible that the opening of the market will attract competitors who will be ready (thanks to their financial strength) to enter into a price war (as it happens in the liberalized electricity market in Croatia). Such a scenario would probably lead to the disposal of investments. Attracting a strong strategic partner – large multinational corporations, could strengthen EPS and increase its chances to defend its leading position. However, this issue will remain open, and the decision on attracting strategic partners and recapitalization with total (or partial) privatization will be made by the Government of the Republic of Serbia. This issue will be considered after corporatization. Corporatization is a prelude to privatization, even though privatization is not required.

When it comes to corporate governance, bodies of the company are: Supervisory Board, Executive Board and Director. Executive management has already been for two years at the helm of EPS, and new Supervisory Board was appointed in November 2014. All of them will be faced with some very important decisions in the process of restructuring. The most important one is definitely corporatization. It is a form of translation of a company from a public company into a joint stock company. Transformation from PE to the joint stock company will imply the establishment of the Shareholders Assembly. Essentially corporatization will lead to a kind of consolidation and an establishment of logical relationships between the parent company (EPS) and its subsidiaries. Today one of the least logical relationships is that EPS has no authority to manage operations within their subsidiaries. It is expected that the optimization of the management process, reduction in the number of sectors and managers, as well as procurement centralizing, will enable savings in the amount of 100,000 EUR per day, which would accumulate to about 36 million EUR annually [12].

The final result of the restructuring of EPS is the fulfilment of his mission, and that is: to “*secure electricity supply to all customers, under the most favourable market conditions, with continuous upgrading of the services, improvement of environmental protection and welfare of the community*” [13]. The mission is realized through



strategy, and a strategy is being implemented through concrete investments.

It is expected that EPS will be ready after corporatization to enter into a new investment cycle independently, with a strategic partner at the level of corporation, or with strategic partners for specific projects. It is about the investment in building new capacities [14]:

- Completion of the construction of TPP Kolubara B;
- Construction of new unit at TPP Nikola Tesla B3 and TPP Kostolac B3;
- Reconstruction of the existing CHP using natural gas with implementation of gas turbines i.e. reconstruction of CHP Novi Sad;
- Developing project of opening OCM Radljevo;
- Construction of minimum 5 HPP on Velika Morava, 10 cascade HPP on the river Ibar, 4 HPP on the upper Drina, 3 HPP on the middle Drina, PS HPP Djerdap 3 and PS HPP Bistrica;
- Construction of small hydro power plants and generation of electricity from other renewable energy sources.

In accordance with the strategic documents on the energy sector development of the Republic of Serbia, as well as with their development interests, EPS aims to increase the share of renewable energy in the production of electricity. EPS is ready for the application of the latest technologies in the field of renewable energy, increasing energy efficiency, cost-efficiency as well as sustainable energy development, primarily on the basis of water resources. In this sense, the priorities for EPS are the revitalization and modernization of existing large and small hydropower plants, construction of new small hydropower plants, but also the development of wind farms and solar power plants, and combustion of municipal waste and the use of biomass.

## Conclusion

The electricity sector is perhaps the most complex and the most dynamic segment of the energy sector today. Tightly regulated for decades, this sector has become the hallmark of a strong state intervention in the economic flows. However, in order to improve its efficiency, the

energy development strategy creators have initiated its restructuring. The most prominent issues are those related to: the unbundling of enterprises, corporatization, management restructuring, outsourcing, downsizing, and others. The choice of solutions is quite varied; nevertheless, our research may lead to several conclusions:

- the key player in the restructuring of the electric power companies is the state, i.e. the government (energy is too serious a matter to be left to the market),
- the vast majority of these enterprises have been established as a joint stock companies, some of them have also been established as limited liability companies,
- unbundling of the companies follows a technological process pattern, thus, vertically integrated monopolies are being broken into generators, transmitters, distributors, and suppliers to end-users,
- the transmission grid, as a form of natural monopoly, have remained in the hands of the state, while other energy entities may be subject to privatization in any form, as well as to various methods of privatization,
- in energy sectors across all countries, liberalization of the energy market has led to intensified competition usually to the benefit of the consumers (by reducing the price of electricity),
- corporate restructuring has involved the exclusion of non-core businesses from the business portfolio, and then outsourcing of many activities that do not add value,
- the restructuring process has usually been accompanied by downsizing,
- motivation for managers in enterprises where the state has a stake usually involves performance contracts which clearly outline performance indicators from the perspective of the key stakeholder,
- upon disintegration, leading European electric power companies based their growth both on organic growth and on national and international mergers and acquisitions and joint ventures.

The Republic of Serbia has also embarked upon a restructuring of its electric power sector. It is a process that has been imposed externally, i.e. it is a result of meeting the prerequisites for accession to the European Union. In



terms of its inclusion in the single energy market, Serbia has also made an interim step, i.e. it has joined the Energy Community of South Eastern Europe.

Guided by the European energy directives, Serbia has an opportunity to reduce its uncertainty regarding the outcome of the restructuring of its electric power sector. The process of unbundling of the company is completed. EPS and EMS are separate entities. EMS as a natural monopoly will remain in the hands of the state, but it is surely competing in the open market. The generators, distributors and supplier have been and will be getting their own competitors.

EPS with its 13 subsidiaries has initiated the process of corporatization. A joint stock company will be formed (with the Shareholders Assembly, which is currently lacking among governance bodies), and logical relationships will be finally established between the parent company and its subsidiaries with a clear and unambiguous authority of the parent company.

And what about privatization? Yes or no? And privatization of which enterprises: the generators or the distributors, or both of them? For now, the directors of EPS and the leading people from the key stakeholder – the government, have stated that EPS will not be sold, that there is a possibility of recapitalization, a possibility of cooperation with strategic partners in individual projects and the like. It is obvious that no consensus has been reached on this issue as yet. Certainly, the decision should be made with the aim of improving the overall competitiveness of the economy, because EPS is one of the drivers of the development of the national economy. However, it is obvious that energy industry is, and will increasingly be so, a global industry. It is hard to get into a competitive battle alone. It is clear that we need allies. We need to think about them in a timely manner. They are not to be sought after in times of hardship (the ever-present hard to overcome budget deficit, for example). Some kinds of loss cannot be avoided if we choose allies when troubles arise.

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