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ELECTRICITY DIRECTIVES AND EVOLUTION OF THE EU INTERNAL ELECTRICITY MARKET[1]

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Abstract

The liberalization of the electricity market in the EU is aimed at creating a competitive market in order to increase economic efficiency and reduce the role of the state. For a long period of time, the electricity sector in the EU member states was organized in the form of a natural vertically integrated state-owned monopoly. It proved to be ineffective in terms of ensuring the (competitive) market price of electricity. With technological advances in electricity generation and transmission, the reform of the electricity sector became possible and unavoidable. Namely, all production and development activities rely on the use of energy, i.e. electricity in most cases, which makes this type of energy irreplaceable by other energy sources. Given the increased level of electricity usage and the interconnectedness of economic growth and electric power system development, it is important to stress the need for a consistent liberalization of the EU electricity market within the context of Electricity Directives. The reason lies in the fact that a mere enforcement of Electricity Directives, together with other supporting regulations, represents a means towards creating a fully functional internal electricity market. The same applies in the case of the Croatian electricity market.

Key words: electricity market, liberalization, electricity directives, European Union, Croatia

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1. INTRODUCTION

Liberalization of the electricity supply industry is a process consisting of several measures (restructuring of the sector, introduction of competition, establishment of an independent regulator, market regulation, and privatisation) which need to be properly implemented in order to successfully reform this vertically integrated industry into a competitive one. The reason lies in the fact that competition leads to increased innovation, flexibility and efficiency in the production as well as price reduction.

In context of the European Union, this implies creating an efficient and cost-effective electricity sector followed by a fully opened, competitive and interest-balanced market structure. The EU itself, from the very beginnings of the electricity market liberalization, believes that competition will result in lower electricity prices for both industrial and residential consumers. Moreover, it is anticipated that it will increase the quality of service leading to a more efficient usage of natural resources. The three energy packages and their pertaining electricity directives are all about creating a uniformed electricity market, increasing competition and efficiency as well as ensuring secure electricity supply. The last EU energy package aims to take this ongoing process even further and finally improve the functioning of the internal electricity market and to put a close to what appears to be one of the important economic and political objectives. However, it still remains to be determined and analysed to what extent and whether the implementation of the third Electricity Directive will lead to a possible convergence of the electricity market in terms of benefits for every single EU citizen (greater choice and improved consumer rights, fairer prices, cleaner energy and security of supply). Therefore, the aim of this paper is to define the past and present efforts regarding the establishment of a competitive electricity market in the European Union. An overview regarding Croatia's efforts in liberalizing the electricity market is also given within this paper.

The paper is structured as follows. After the introduction comes the second part which thoroughly studies the liberalization of the EU electricity market through the elaboration of the past and present electricity directives. The third part describes previous efforts and new implications regarding electricity sector reform in Croatia. The last part draws the conclusions which have been identified in this paper.

2. EU ELECTRICITY DIRECTIVES: IMPLEMENTATION AND EVALUATION

The very creation of the internal electricity market in the EU began in the early 1990's in an atmosphere of reduced political concern over energy supply security (Jamasb and Pollitt, 2005) and with the Directive on the Transit of Electricity through Transmission Grids whose main goal was to assure that the network operator in one member state does not interfere with the exchange of

electricity between other member states (Tominov, 2008). At that time, the EU member states started to organize their electricity sectors in accordance with the political and economic developments resulting thus in a large variety of the overall sector organizations (Udovičić, 2005) in which the common rules for the electricity market in a form of directives were still not adopted.

2.1. Directive 96/92/EC

Although the first draft of the Electricity Directive, with clearly stated principles of free electricity trade between member states and third-party network access, was issued in 1992, it was not until 1996 when the first Electricity Directive (96/92/EC[2]) was passed. It created the necessary preconditions for the liberalization of the electricity sector within the EU and the abandoning of the idea of national sovereignty over electrical energy. This electricity directive gives the absolute advantage to competition and free trade. At the same time, electricity industry is regarded as any other activity in which competition encouragement promotes efficiency, lower electricity prices and increased security of electricity supply, as it stimulates private investments in the electricity sector together with the reduction of state's involvement via independent regulatory agencies (Višković, 2005; Tešnjak, Banovac and Kuzle, 2009).

According to Jamasb and Pollitt (2005, p. 6), the European electricity sector liberalization was pursued at two parallel levels. The first one was under Electricity Directives which were designed to enable electricity companies from across the EU member states to compete with the so-called national incumbents. The second level of electricity sector liberalization dealt with improving interconnections between member states by improving cross-border trading rules and expanding cross-border transmission links which will ultimately reduce cross-border transport costs and increase competition.

As it was stated earlier, today's internal electricity market of the European Union was established by the Directive 96/92/EC which was passed after five years of negotiation, opposition and compromises among member states. The Directive went into force in February 1997 and the member states were required to include its provisions in their national law by February 1999.[3] Only Belgium, Greece and Ireland were given longer deadlines due to the specific technical features of their electricity sector (small sectors with few international interconnections). Tominov (2008) and Teodorović, Aralica and Redžepagić (2006) argue that the main goal of this Directive was to establish rules for electricity production, transmission, distribution and supply as well to establish rules regarding the organization and operation of the electricity sector, market access, criteria and procedures for public tenders together with issuing authorization for the construction of new generating facilities. Thomas (2006)

[2] Original name of the directive: Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity.
[3] For more details see Official Journal of the European Union L 027, 1997.

gives a deeper analysis regarding these interest areas. In terms of constructing new generating capacities, member states were given two options. On one hand, they can authorize constructors of new generating capacities in compliance with national planning law for any industrial facility or on the other, announce tenders where an official authority determines the needed generating capacities and allocates the construction through an open, non-discriminatory process.

The Directive 96/92/EC also required the unbundling of previously vertically integrated monopolistic companies and the creation of new market participants, especially in terms of Transmission and Distribution System Operators which had to be separate from the competitive parts of the electricity sector. In terms of retail competition, the electricity consumers (manly large and medium) got the opportunity to choose or change their suppliers. According to Tešnjak, Banovac and Kuzle (2009) as well as Vlahinić-Dizdarević, Host and Galović (2009), electricity market opening began in 1999 enabling those consumers using over 40 GWh per year to choose the electricity supplier. This resulted in an opening of approximately 26.5% of the European Union electricity market to foreign suppliers. Additionally, in the year 2000, the level for achieving the preferred consumer status was lowered to 20 GWh of the overall annual electricity consumption resulting in an opening up to 28%. Finally, in the year 2003, all electricity consumers with annual electricity consumption greater than 9 GWh had the preferred consumer status (33% market opening).

Regarding retail competition, it is worth mentioning that although this Directive required the member states to encourage competition as the basic criterion that will enable the functioning of the electricity market, it did not impose a completely opened market due to protection of national or local solidarity through various forms of state intervention (Višković, 2005, p. 30). However, it provided the possibility of achieving fully effective electricity market within nine years of the Directive's entry into force. The last area dealt within the Directive 96/92/EC dealt with network access requiring the Transmission and Distribution System Operators to grant non-discriminatory network access under either negotiated third party access (generators and retail suppliers negotiate network access with the system operator), regulated third party access (generators and retail suppliers are allowed to access the network at previously published tariffs) or under the "single buyer" option where, as the name implies, a single buyer previously designated by the member state would be responsible for purchasing electricity for overall country's needs as would determine which power plants were to be used.

The introduction of Directive 96/92/EC had created many serious problems because of the asymmetry among the member countries. The main inequality in gaining access to the national market refers to the degree of market openness and the type of network access (Višković, 2005, p. 33). The reason lies in the fact that the unbundling requirements did not guarantee independence of network access whereas the negotiated third party access option offered the incumbent companies a way of keeping out the competitors. Thomas (2005)

states that there was nothing that required countries to create a competitive field of companies in generation or retail. This resulted in a concentrated retail sector and restricted retail competition. Although the Directive tried to ensure an indiscriminate network access (even with three different access options) it did not require a wholesale market to be set up. In other words, there were no provisions and possibilities for competitive producers to find a market for their electricity, especially in a country with a dominant generator/retailer. This, unfortunately, led to minimal chances of entering the market.

Regarding retail market opening, the provisions on that matter were very limited with no more than a few thousand of the very largest consumers being able to choose their electricity supplier. General criticism of this Directive refers to the fact that member states were given too much leeway when it comes to complying with the provisions aimed at creating new market structures. Integrated companies needed to do no more than make an accounting separation between their network, retail and production activities while at the same time the negotiated third party access option allowed to refuse network access on the grounds of system security.

If the Directive sets out the minimal rules and conditions under which competition can develop in a fair and transparent way without the violation of defined objectives and economic results (Vlahinić-Dizdarević, Host and Galović, 2009, p. 9), it must be stated that the first Electricity Directive did not set any requirements for an independent sector regulator, meaning that there was no constant sector surveillance nor an "independent eye" to ensure that the rules were followed.

From the practical point of view, most countries opened their retail market much further and more rapidly than it was required. According to Tešnjak, Banovac and Kuzle (2009), in the year 2000, around 56% of the EU electricity market was already opened. Thomas (2005; 2006) states that by 2001 the European Commission was willing to introduce new directives in order to accelerate market opening even further and to correct the imperfections of the first Directive and firmly and decisively respond to the criticisms regarding network access and sector regulation.

2.2. Directive 2003/54/EC

The second Electricity Directive (2003/54/EC[4]), which represented a step forward in completing the internal electricity market, was passed in June 2003. EU member states were required to implement its provisions into their national law by 1 July 2004. The idea behind this new directive was in further strengthening of EU's energy policy, in ensuring electricity supply to all

[4] Original name of the directive: Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC.

consumers, in full market opening, in higher service standard and business efficiency as well as in security of supply and lower electricity prices. Also, this Directive further promoted market competition by stronger network access regulation and by requiring the establishment of an independent regulatory body together with environmental protection and promotion of renewable resources in line with the protection of consumers' fundamental interests. In additional explanation why the Directive 96/92/EC was amended with the second Electricity Directive, Udovičić (2005, p. 294) argues, in accordance with the very text of the second Directive, that specific provisions were needed to ensure equal competition in the production segment and to reduce the risk of both market dominance and predatory behaviour as well as to guarantee non-discriminatory tariffs for transmission and distribution through network access based on the tariffs published prior to their entry into force.

Further analysis of the second Electricity Directive[5] shows which new requirements were added and/or changed in order to fully cover the areas of interest previously set in the first Electricity Directive. In the area of constructing new electricity generation capacities, authorization was determined to be the rule under which new capacities should be constructed while tendering should only be used if authorization procedure would not result in sufficient generating capacity. Authorization procedures, which are publicly announced and have a goal of easing the market entry, must not become an administrative burden and the reason why one's permission (authorization) is refused has to be objective, non-discriminatory, well founded and substantiated by adequate evidence.

In terms of retail competition it was stated that from 1 July 2007, electricity market must be fully opened meaning that all electricity consumers (non-residential and residential) have the right to choose their electricity suppliers, regardless of national boundaries. In order for competition to work, access to networks should be non-discriminatory, transparent and under fair (market) prices. Non-discriminatory network access granted by the Transmission or Distribution System Operator is of a paramount importance for the final formation of the internal electricity market. Therefore, the distribution and transmission systems must be conducted by legally separated entities. Respectively, it means that Distribution and Transmission System Operators must be established as independent entities in relation to those subjects engaged in electricity production and supply. As stated in Thomas (2006, p. 791), the Transmission and Distribution System Operators could be under the same corporate ownership as a company active in generation and/or retail, but they have to be legally distinct companies.

In the matter of network access, the negotiated third party access and the single buyer option were withdrawn since they had not been adopted to any significant extent. As mentioned earlier, the provisions on regulation were much stronger and member states were required to appoint an independent sector

[5] For more details see Official Journal of the European Union L 176, 2003.

regulator that had to have a minimum set of competences but enough power and authority to ensure non-discriminatory playing field for all market participants in order to promote competition and functioning of the electricity market in a transparent, effective and efficient manner.

The Directive 2003/54/EC was passed in order to eliminate deficiencies of the previous Electricity Directive in the areas on network access, unbundling and especially regulation, but it still was not explicit on breaking up dominant companies and introducing wholesale electricity markets. Although nearly all member states have chosen to ensure competition in the electricity generation through a transparent authorisation procedure, there were still no means to sell the produced electricity. While electricity generators were able to construct new power plants and to access the network, without a competitive and liquid wholesale market it is pointless for the electricity generators to even enter the market. The second problem refers to Transmission and Distribution System Operators and their distinction from companies involved in electricity generation and retail. As it was previously mentioned, the operation of the network must be carried out by a legally distinct company. However, the problem lies in a fact that this very company can still be owned by an entity involved in electricity generation and/or electricity retail. The third and the most serious problem refers to the fact that there were no specific measures for breaking up dominant companies. Although the second Electricity Directive speaks of a need to reduce the risks of market dominance and predatory behaviour, it seemed that member states and the European Commission were not committed in breaking up the control of dominant companies and that they preferred to maintain or allow the emergence of the so-called national champions in the electricity sector (Thomas, 2006).

The second Electricity Directive also required that member states must provide the European Commission with a report on market dominance and anti-competitive behaviour together with a review of any changes in ownership patterns as well as practical measures put in motion in order to enhance competition and variety of non-dominate market actors. The European Commission also required submission of an annual report to the European Parliament on the overall progress in creating a complete and fully operational internal electricity market. Moreover, it was not quite clear to what extent member states (which should be more active in this area) and the European Commission are required to break up dominant companies and their positions. It looks like that, although the provisions of the Directive seem strong, a lack of will exists among member states and the European Commission when it comes to reducing market power and breaking up dominant companies as well as ensuring a competitive playing field for all market participants.

Although previously described Electricity Directives had the role of key legislation acts, there are others that also set the rules in the electricity sector. For

instance, Directive 2001/77/EC[6] is all about promoting electricity produced from renewable resources and increasing the share of renewable sources in electricity production. This Directive[7] explicitly emphasizes that the promotion of renewable energy represents a high priority for the EU due to security and diversification of energy supply, environmental protection, economic and social cohesion. Regulation 1228/2003/EC[8] on the other hand was adopted in order to regulate transmission of electricity between member states and to establish the mechanisms for the compensation of the inter-transmission system operator, the principles for its collection as well as for the use of the available interconnection capacities among national transmission systems[9]. There is also the Directive 2005/89/EC[10] which establishes measures aimed at safeguarding security of electricity supply and ensuring proper functioning of the internal electricity market in terms of adequate level of interconnection between member states and adequate level of generation capacity and balance between supply and demand. This Directive[11] in turn requires network operators to set and meet quality of supply and network security performance objectives while member states need to encourage the establishment of wholesale electricity markets.

2.3. Overview on the effects of the EU electricity market liberalization process

The overall liberalization process has been progressing rather slowly and unevenly across the EU (Vlahinić-Dizdarević, Host and Galović, 2009, p. 8), and is still far from being completed, resulting in low level of competition, increased market concentration, differences in electricity prices and modest cross-border interconnection capacities which represent a barrier to cross-border electricity trade.

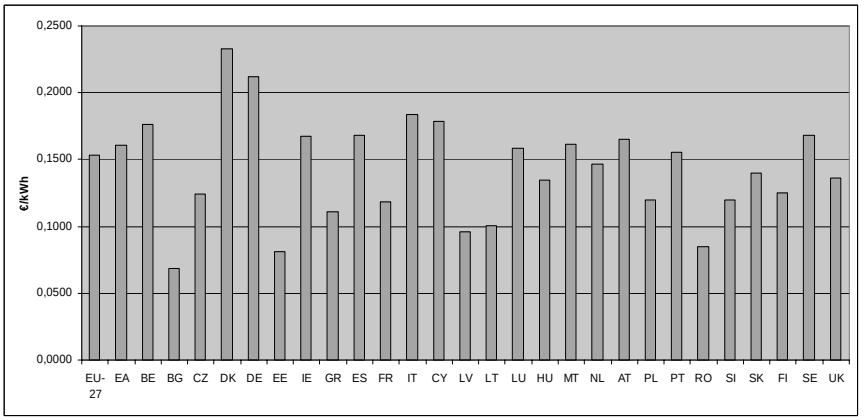
The availability of electricity network capacity for cross-border transactions is not satisfactory both in terms of new investments and the way in which the existing capacities are allocated. Due to insufficient interconnection capacity between member states, certain regions such as the Baltic States, the Iberian Peninsula, United Kingdom and Ireland remain isolated. In 2002, the European Council set the target for all Member States to have a level of electricity interconnections equivalent to at least 10% of their installed production

[6] Original name of the directive: Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity from renewable energy sources in the internal electricity market.
[7] For more details see Official Journal of the European Union L 283, 2001.
[8] Original name of the regulation: Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exhanges in electricity.
[9] For more details see Official Journal of the European Union L 176, 2003.
[10] Original name of the directive: Directive 2005/89/EC of the European Parliament and of the Council of 18 January 2006 concerning measures to safeguard security of electricity supply and infrastructure investment.
[11] For more details see Official Journal of the European Union L 33, 2006.

capacity by 2005. In 2010, nine member states still did not meet this target (Prša, 2009; Granić et.al 2008).

Electricity consumers, according to Anderson (2009), have not received the promised lower prices which are above relevant generation costs (due to increase in prices of oil and gas and especially due to lack of competition where the latter is a result of high market concentration). Also, great disparities (Figure 1 and 2) still exist in electricity price levels among member states for both households and industrial consumers.

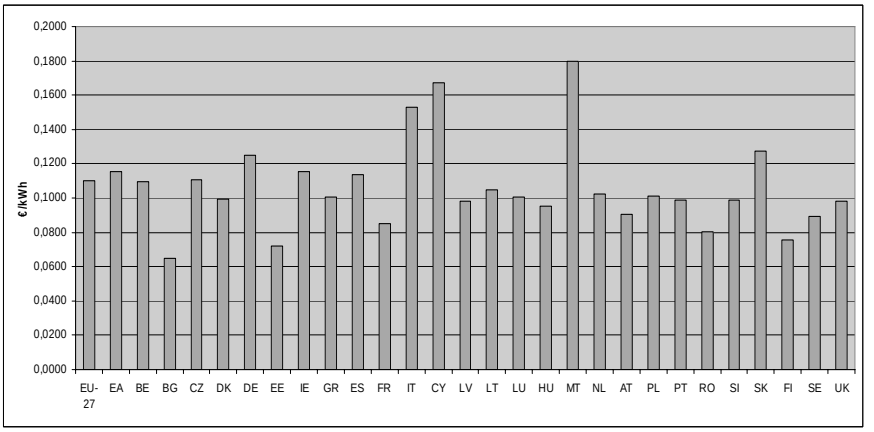
Regarding household electricity prices, Denmark, Germany, Cyprus and Italy had the highest price levels in the first half of 2011 while the lowest electricity prices in this consumer category were registered in Bulgaria, Estonia and Romania. According to the data available on Eurostat, the total price level for households ranged from 0.0688 €/kWh in Bulgaria to 0.2327 €/kWh in Denmark.



Source: Eurostat, 2011

Figure 1: Electricity half-yearly prices for households (in €/kWh), excluding VAT, first half of 2011[12]

[12] Consumer band DC (household consumers with an annual consumption between 2.500 and 5.000 kWh) was taken into consideration.



Source: Eurostat, 2011

Figure 2: Electricity half-yearly prices for industry (in €/kWh), excluding VAT, first half of 2011[13]

When it comes to electricity price levels among member states for industrial consumers it can be noted that the highest electricity prices are present in Malta, Cyprus and Italy where, on the other hand, Bulgaria, Estonia, France, Finland and Romania have the lowest prices of electricity for industry. In the first half of 2011, the lowest level of electricity price paid by industrial consumers was 0.0648 €/kWh in Bulgaria and the highest was 0.1800 €/kWh in Malta.

High level of concentration on the electricity market can be evidenced by the fact that in only seven EU member states (Finland, Poland, United Kingdom, Germany, Italy, Netherlands and Austria) market concentration in the year 2009, in terms of Herfindahl-Hirschman Index, was reported as moderate (European Commission, 2011). This, in turn, constitutes entry barriers especially for small, independent suppliers.

Artificially-low regulated prices (as opposed to free-market prices) that are below market prices hamper competition especially if these regulated prices are not well targeted and/or set at a level that does not allow costs to recuperate. In the year 2009, end-user price regulation continued to exist in 19 countries for households. Regulated prices for non-households were registered in 16 countries. The share of households supplied at regulated electricity prices was around 57% while the share of non-household consumers with regulated prices was 17%.

The majority of electricity consumers still use the services of those suppliers who hold strong monopoly on the national market. According to the European Commission (2010; 2011), the average wholesale market share of 3

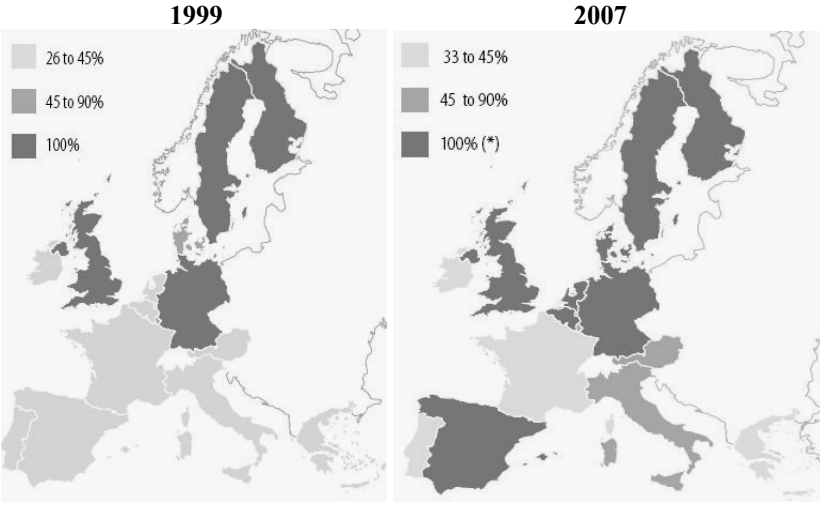
[13] Consumer band IC (industrial consumers with an annual consumption between 500 and 2.000 kWh) was taken into consideration. Electricity prices for industrial consumers in Austria reffer to the second half of 2008.

biggest companies (by capacity) was around 76% while the total number of electricity generators with more than 5% share of generation capacity was 90 (or 96 if Norway is included). In the electricity retail market, the market share of three largest companies was around 80% with the total number of nationwide suppliers of 1155 (namely, 1181 if Norway is included). Also, a large majority of electricity consumers did not embrace the possibility to select (switch to) another electricity supplier due to either lack of interest or absence of real competition in the supply segment. Even the European Commission (2010, p. 11) indicates that "it is difficult (...) to gain an overall picture of switching across member states" and that "switching levels vary considerably across Member States, with some mature markets – such as the UK – experiencing relatively high rates and a number of others showing little or no activity." Specifically, the annual switching rates in United Kingdom are around 19% while, for instance, Bulgaria, Latvia, Lithuania, Romania, Slovakia and Slovenia are dealing with switching rates that amount to no more than 1% on a yearly basis.

Although the electricity market liberalization process is still far from being completed, we can draw several conclusions regarding electricity market achievements (Majstrović, 2008, p. 546):

- there is no single vision for development of electricity market in the EU with sufficiently strong mechanisms for its implementation (the strategy for introduction of an internal electricity market did not achieve the expected results and sanctions for non-implementation have been practically absent until recently)
- national monopolies were replaced by new private megamonopolies – oligopolies
- since market opening, cumulatively speaking, less than 20% of all buyers on average by country have changed their electricity supplier due to reasons such as the lack of interest (due to relatively low electricity costs) or due to absence of real competition in supply activity
- differences in organization and operation of markets between member states are significant and the functioning of an internal European market is still unrealistic
- institutional relations between member states are still unresolved which makes it difficult to implement an open electricity market
- the question of supply security has not been raised seriously until recently
- so far ownership relations and their impact on market development have not been regarded as a problem
- there is a big disproportion between long periods of return on investments in the system and dependence of project profitability

on everyday market risks (this results in the absence of necessary activities and delay in construction of minimally required transmission and production capacities)



Source: Vlahinić-Dizdarević and Žiković (2011, p. 94)

Figure 3: Electricity market liberalization upon the implementation of the Electricity Directive

Probably the best overview on the development of the internal electricity market (Figure 3) was given by the European Commission (2010, p. 2) where it states that it is essential to correctly implement the rules of the current Electricity Directives in order to make market opening fully effective in terms of lowest possible electricity prices, security of supply and sustainability. However, due to improper implementation of the required legislation, in June 2009 the European Commission initiated infringement procedures against 25 member states for electricity (and against 21 member states for gas; this currently makes over 60 infringement proceedings underway on the Second energy package alone)[14] where "key violations identified lack of transparency, insufficient coordination efforts by transmission system operators to make maximum interconnection capacity available, absence of regional cooperation, lack of enforcement action by the competent authorities in member states and the lack of adequate dispute settlement procedures."

After analysing the replies to the Letters of Formal Notice of the member states, the European Commission concluded that Denmark, Estonia Finland and Latvia had undertaken measures to align with the requirements of the Community

[14] The first infringement procedures were initiated in 2006 against 20 member states but unfortunately the results were not too successful since in 2007 only few more countries achieved full electricity market liberalization as shown on Figure 3 (Vlahinić-Dizdarević and Žiković, 2011, p. 94).

law. For the rest of the member states, the Commission's assessment pointed out only few violations had been properly addressed and decided in June 2010 to pursue the infringement procedures further and sent 35 Reasoned Opinions to the following member states: Austria, Belgium, Bulgaria, Czech Republic, Germany, Spain, France, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Sweden and United Kingdom (European Commission, 2011).

2.4. Introductory remarks on Directive 2009/72/EC

Aforementioned first and second Electricity Directives were a part of the so-called first and second energy liberalization package of electricity (and gas) markets. In April 2009, a third package of legislative proposal seeking to further and finally liberalize the internal market of electricity (and gas), resolve structural failings, promote infrastructure investments, enhance competitiveness and protect the consumer has been adopted amending the second package. The third package focused on the issues related to the new unbundling regime, improving the functionality of the internal electricity (and gas) market, regulatory oversight and cooperation (namely, establishing the Agency for the Cooperation of Energy Regulators), enhancing the powers and independence of national regulators, measures to reinforce security of supply, efficient network cooperation, transparency and record keeping. March 2011, was set as a deadline when this new legislative proposals will have to be implemented in the EU member states (Bukša, 2010).

The new Directive on electricity (Directive 2009/72/EC)[15] by its definition establishes common rules for the generation, transmission, distribution and supply of electricity. Together with consumer protection provisions, it represents a way of improving and integrating competitive electricity markets in the Community. It lays down the rules related to the organisation and functioning of the electricity sector as well as open access to the market. It sets the criteria and procedures applicable to calls for tenders and the granting of authorisations and the operation of systems. It also lays down universal service obligations and the rights of electricity consumers as well as it clarifies competition requirements. In addition, it has been recognized that a secure supply of electricity is of vital importance for the development of European society, for the implementation of a sustainable climate change policy and for the fostering of competitiveness within the internal market. Also, cross-border interconnections should be further developed in order to secure the supply of all energy sources at the most competitive prices to household and industry consumers within the Community.[16]

[15] Original name of the directive: Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC.

[16] For more details see Official Journal of the European Union L 211/55, 2009.

One of the most important features is the new Transmission System Operator (TSO) unbundling regime due to the fact that up to now legal and functional unbundling have not led to effective unbundling of the TSO's. Effective TSO unbundling determines the overall result in constructing the electricity market since they manage key and vital facilities. There are three possible solutions: full ownership unbundling, independent system operator (ISO) and independent transmission operator (ITO). The full ownership unbundling model refers to the situation where transmission system operator and network owner must be completely separated from the vertically integrated company. In the independent system operator model the ISO is responsible for the maintenance of the networks. The ISO is separated and not subjected to the control of vertically integrated company and the network owner, it accepts full responsibility of a transmission system operator but its assets remain the property of the integrated company. Finally, the independent transmission operator (ITO) model is designed as a system where the transmission system operator remains within the vertically integrated company but with the related asset in its own possession. Under this regime the transmission system operator must not have shared services with the parent company nor should it transfer confidential and sensitive information to the generation and supply branches of the integrated company. In conclusion, it is expected that TSO's will establish further cooperation which includes regional solidarity, reporting, development of commercial and grid codes, coordination of grid operation, investment planning as well as the expansion of the cross-border capacities in the EU (Bukša, 2010, p. 785; Glanchant and Lévêque, 2006).

The Directive 2009/72/EC will also ensure more effective regulatory supervision from truly independent national energy regulators. This will be done through strengthening and harmonising the competences and the independence of national regulators in order to ensure an effective and non-discriminatory access to the transmission networks. European Agency for the Cooperation of Energy Regulators (ACER) is being established according to Regulation EC/713/2009[17] as a new body which will complement the regulatory task of the national level and which is completely independent from the European Commission, national governments and energy companies. The reason for ACER being established goes in hand with the strengthening of the above mentioned regulatory powers as well with solving the gaps in cross-border projects regulation. Also, the Agency[18] will be responsible for ensuring and promoting effective cooperation between national regulatory authorities at regional and Community level and to take decisions on cross-border issues if national regulators cannot agree or ask ACER to intervene. It will have to review the implementation of the EU network development plans and monitor the functioning of the internal market, including retail prices. Available network access, especially for electricity produced from renewable

[17] Original name of the regulation: Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators.
[18] For more details see Official Journal of the European Union L 211, 2009

energy sources and compliance with the consumer rights is also within ACER's jurisdiction (European Parliament, 2009; ERGEG, 2009).

Possible final convergence towards united and uniform internal electricity market still remains to be seen and thoroughly analysed since the implementation deadline for Directives and Regulations of the Third energy package was not until March 2011. According to the European Commission (2011, p. 3) in 2010, member states were actively engaged in preparing the transposition of the Directives of the Third energy package into their national laws and the Commission had consistently underlined the importance of a timely and correct transposition. In particular, the rules on unbundling of networks and especially the new rules on the independence and powers of national regulators are indispensable for a proper market functioning. So far the results of the transposition have not been reassuring. By 1 June 2011, not a single EU member state had yet notified its transposition measures to the European Commission although 4 member states had filed partial notification.[19] The fact that the implementation deadline for TSO unbundling is not until March 2012 still does not allow us to give a possible (and final) passing grade regarding the internal electricity market creation.

This comprehensive project still remains far from complete with many open infringements under the Second package, with the deliberate state interference motivated by a desire to support the so-called national champions and with disappointing levels of internal market legislation implementation at national level.[20]

3. ELECTRICITY MARKET IN CROATIA: REVIEW OF PAST EFFORTS AND NEW IMPLICATIONS

When it comes to Croatian electricity market, it can be stated that complete transmission, distribution, supply and the majority of electricity production (as well as production, distribution and supply of thermal energy) are organized within the HEP Group, consisting of HEP d.d. as a leading, parent company and several subsidiaries or daughter-companies, which is fully owned by the Republic of Croatia.[21]

[19] See further: The internal energy market – time to switch to higher gear, http://ec.europa.eu/energy/gas_electricity/legislation/doc/20110224_non_paper_internal_nergy_market.pdf (retrieved on April 28, 2011)

[20] For more details on the Community aquis regarding electricity sector restructuring see also Vlahinić-Dizdarević and Žiković (2011).

[21] According to the Croatian Energy Regulatory Agency (2008), the electricity generating facilities, mainly hydro and thermal power plants, are administrated by HEP Proizvodnja d.o.o. (89% of the overall capacity) which is one of subsidiary companies fully owned by HEP Group. This daughter-company also has by far the largest share (86%) in the overall electrical energy generated in Croatia while a small number of facilities (with the share of 6% regarding the overall generating capacities and 1% of total electricity generated) are privately owned power plants that use wind power, photo

Energy sector reform started at the end of June in the year 2000 when the Croatian Government adopted the Energy Sector Reform Program. This Program determined the unbundling of fundamental activities, separation of complementary activities, formation of energy market and privatization of energy companies. One year later (in July 2001) a package of five energy legislations was passed in accordance with the European directives concerning common rules for the internal market in electricity (and gas) which were valid at that time, in particular Directive 96/92/EC (Udovičić, 2004). Three out of five of these laws (namely, Energy Act, Electricity Market Act and Regulation of Energy Operations Act[22]) defined the anticipated changes in the electricity sector. Rounding out the first phase of defining normative requirements for the electricity sector reform was completed in March 2002 with the adoption of the Privatization of HEP Act.[23] The Energy Sector Development Strategy of the Republic of Croatia was adopted in April 2002 which, in terms of electricity sector, aimed to create a competitive and sustainable electricity system with high security of electricity supply starting from the fact that only independent, regulated and opened electricity market represents the most efficient and cost-advantageous way in carrying out previously outlined objectives.[24]

At the end of the 2004, Electricity Market Act and Regulation of Energy Operations Act were re-adopted together with the amended Energy Act[25]. This was done in accordance with the Second energy package, namely Directive 2003/54/EC. Also, the new Energy Development Strategy of the Republic of Croatia was adopted in October 2009.[26] This legal compliance enabled the creation of the Croatian Energy Regulatory Agency. Moreover, a new dynamics related to electricity market opening was defined through a definition of the so-called preferred customer. The Electricity Market Act stipulated that from the day of its effect all customers with annual electricity consumption greater than 20 GWh and all customers who are connected directly to the transmission network

voltaic and small hydro power. Regarding electricity distribution and supply, although there are several licensed traders (for instance, Korlea d.o.o.), these services are also generally provided only by HEP Group.

[22] For more details regarding energy legislations see Official Gazette (2001), No. 68/01.

[23] For more details on the Privatization of HEP Act see Official Gazette (2002), No. 32/02 and HEP Annual report 2008. In the meantime, in February 2010, the Privatization of HEP Act was repealed because the privatization process was never initiated and because the third legislative package of EU energy directives (according to which organizational restructuring does not include questions of ownership or privatization) will result in new changes of energy laws in Croatia. The justification for such a move lies in a fact that in times of economic crisis the energy system should be held stable in terms of supply and avoiding price shocks.

[24] For more details on Energy Sector Development Strategy of the Republic of Croatia see Official Gazette (2002), No. 38/02 and Boromisa (2003).

[25] For more details on these amendments see Official Gazette (2004), No. 177/04.

[26] For more details regarding the new Energy Strategy of the Republic of Croatia see Official Gazette (2009), No. 130/09.

will obtain the status of preferred customer.[27] The dynamics of electricity market opening was the following (Tominov, 2008, p. 283):

- on July 1, 2006, the market was opened for customers with electricity consumption greater than 9 GWh which signified the possibility of choosing electricity suppliers for 106 entrepreneurs (they consumed approximately a billion kWh of electrical energy in the year 2006) and resulted in electricity market being opened at 25%
- on July 1, 2007, the market was opened for all customers in the category of entrepreneurs (i.e. for over 200.000 customers) whose consumption in the year 2006 amounted up to 8.5 billion kWh of electrical energy or 57% of total electricity consumption
- on July 1, 2008, household customers obtained the preferred customer status as well which meant that electricity market became open for all electricity customers in Croatia

After taking into account the progress in recent years regarding electricity market liberalization and having in mind the fact that it is formally harmonized with the requirements of the First and Second energy package, Croatia is still dealing with undeveloped market liberalization and a strictly government regulated market (Radulović, 2009, p. 518).

However, the third Electricity Directive and its implementation will once again bring changes of the so-called energy laws (namely, the Electricity Market Act, the Regulation of Energy Operations Act and the Energy Act) since one of the most important features of the new electricity directive is the new Transmission System Operator unbundling regime combined with effective regulatory supervision. From the practical point of view, harmonization with the latest electricity directive implies the following (HEP Vjesnik, 2010):

- introduction of market conditions in the electricity sector – electricity prices are to be determined by market mechanisms while setting the tariffs for regulated activities lies within the scope of an independent regulator[28]

[27] As stated in Tešnjak, Banovac and Kuzle (2009), the effective date of the new Electricity Market Act was December 23, 2004, and by that date the limit that ensured the status of preferred customer was set to 40 GWh. There were only 14 customers eligible for the preferred customer status and, at that time, electricity market was opened only up to 9%. Setting down the limit to 20 GWh resulted in 39 preferred customers with the market opening of 14%.

[28] When it comes to comparing the electricity prices paid by households in the EU and Croatia, according to Vlahinić-Dizdarević and Žiković (2011), the price of electricity in Croatia is considerably lower than the EU-27 average and still has an important social dimension. Although declaratively prices are formed on the market, the Government is the one that approves the final rates. The situation regarding electricity prices for industrial consumers is quite opposite. Electricity prices for industry in Croatia have reached the levels paid by industrial consumers in the European Union. This, in turn, is the result of the so-called cross-subsidies. This relic of the past refers to a situation when lower prices for households were compensated with higher energy prices for industry. This, in

- increased authority, responsibility, competence and independence of the Croatian Energy Regulatory Agency and cooperation with the European Agency for the Cooperation of Energy Regulators
- definition of "energy poverty", consumer protection and the establishment of a new system of social support[29]
- separation of the transmission system operator from commercial activities according to either ISO, TSO or ITO concept[30]
- distribution system operator must be independent from other activities within the vertically integrated company (legally, organizationally, in terms of accounting and management) while ownership separation has not yet been conditioned[31]
- efficient and transparent application of laws and regulations at all levels
- increased investment in infrastructure due to power plants deterioration and the need for new generating capacities[32]

Restructuring of the electricity sector is an imperative but it has to be implemented in accordance with the degree of market development, sector's history, national energy sources and the overall economic interests.

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turn, hinders the competitive position of Croatian companies in comparison with those coming from the EU.

[29] Especially when it comes to neutralizing the negative economic impact of cost-reflective energy (electricity) prices on socially vulnerable households (Vlahinić-Dizdarević and Žiković, 2010, p. 51).

[30] The Study on harmonization of the Croatian energy sector and energy legislation with the energy regulations of the European Union (EKONERG, 2010) prefers the TSO model due to reasons such as the operator being fully independent, easier regulatory supervision, correct electricity prices due to market competition, increasing number of competing suppliers which allows customers better and wider choice, protection of socially vulnerable consumers etc. HEP, however, as one of the key energy companies suggests that the restructuring of the transmission system operator should be done according to the ITO model. The arguments for this type of unbundling concept are grounded in the following: smallest impact on the financial-economic status of HEP Group, mildest possible effects in regards to social aspects of employment protection, least compromised system security while the level of investment will not be worsened.

[31] Implementation of the third Electricity Directive also applies to other activities in the electricity sector, namely electricity generation, supply and trade. See Bukša (2011, p. 302) for more details regarding the possible restructuring pattern of the HEP Group.

[32] In the period 2013 – 2020, approximately 30% of previously installed capacity will be shut down which rises the need for new production capacities. Regarding hydroelectric power plants, it is expected that newly built facilities by 2020 will amount to 300 MW. In the matter of thermal power plants, additional 2400 MW of new capacity must be build by 2020. Also, cogeneration units with the power of at least 300 MW will be constructed by 2020. According to the Energy Development Strategy of the Republic of Croatia (see Official Gazette, 2009), it is estimated that the overall investments in the Croatian energy sector will amount to 15 billion €. The most demanding investments are and will be the ones directed to electricity sector. Their share in total investments is about 60% or 9 billion €.

According to some authors[33], Croatian electricity sector even after the restructuring process must remain a bearer of economic growth and development as well as employment in the forthcoming period. Privatization of HEP, although postponed until Croatia's entry in the EU, should be gradual with the intention of attracting private capital in the segment of electricity generation (either on co-ownership or concession basis) in order to diversify electricity supply, to increase competition and to maintain price stability.

4. CONCLUSION

Motivation for the reform of the electricity supply industry and the related regulatory regime vary from country to country but, generally speaking, it is guided by a desire to make the electricity sector more efficient through the introduction of competition among market participants. Improved productivity, as a result of market competition, includes better rationalization of labour and fuel costs in electricity production and supply, top investment decisions and allocation of risk as well as improved quality of services for electricity consumers.

The development of electricity market in the European Union, however, can be described as a long and diversified process that has not yet been fully completed. This can only partly be attributed to different organizational, ownership, technological, historical, geographical and the overall social and legal heritage in EU member states. The main reason lies in a fact that every country in these restructuring and market opening processes seeks maximum protection of their own economic interests. Even directives regarding the liberalization of electricity markets still do not result with all of the expected outcomes and benefits.

Regular and timely transposition of the third Electricity Directive comes as a precondition for the final development of an open, integrated and competitive electricity market. Together with the gas market, this constitutes a priority in achieving competitive energy prices, energy security and sustainability. In particular, electricity supply industry significantly contributes to the gross domestic product through increased investment, exports and construction of new production capacity which somewhat justifies the maximum protection of economic interests. However, the implementation of the rules on unbundling of networks and the ones regarding the independence and powers of national regulators are of significant importance for a proper functioning of the internal electricity market.

Therefore, the Third energy package and the accompanying Electricity Directive should lead to the achievement of the proclaimed goals and benefits for all market participants. This, in turn, can only be achieved with a collective effort

[33] For instance, Bukša (2010; 2011), Vlahinić-Dizdarević and Žiković (2011), Vlahinić-Dizdarević and Galović (2007).

starting from national legislative and competition authorities, energy regulators, producers and suppliers together with consumer organizations. At the end of the day, only joint activities and balanced interests can make the entire EU and Croatia (as the 28th member state) more competitive and resilient to shocks.

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DIREKTIVE O ELEKTRIČNOJ ENERGIJI I RAZVOJ UNUTARNJEG TRŽIŠTA ELEKTRIČNE ENERGIJE U EU[34]

Sažetak

Liberalizacija elektroenergetskog tržišta u EU služi stvaranju konkurentnog tržišta ne bi li se povećala ekonomska efikasnost i smanjila uloga države. U zemljama članicama EU godinama je elektroenergetski sektor bio organiziran kao prirodni vertikalno integrirani monopol u državnome vlasništvu. To se pokazalo neučinkovitim u smislu osiguranja (konkurentne) tržišne cijene električne energije. Uz tehnološki napredak u proizvodnji i prijenosu električne energije, reforma elektroenergetskog sektora postala je moguća i neizbježna. Naime, sve proizvodne i razvojne aktivnosti oslanjaju se na energiju, tj. električnu energiju, čime ovaj oblik energije postaje nezamjenjiv u odnosu na druge energente. S obzirom na porast stupnja korištenja električne energije te na međupovezanost ekonomskog rasta i razvoja elektroenergetskog sektora, važno je detaljno elaborirati dosljednost tog procesa u EU unutar konteksta samih direktiva o električnoj energiji. Razlog se, naime, nalazi u činjenici da upravo provedba tih direktiva o električnoj energiji, zajedno s ostalim popratnim propisima, predstavlja sredstvo stvaranja potpuno funkcionalnog unutarnjeg tržišta električne energije. Spomenuto vrijedi i u slučaju hrvatskog tržišta električne energije.

Ključne riječi: tržište električne energije, liberalizacija, direktive o električnoj energiji, Europska unija, Hrvatska.

JEL klasifikacija: L94

[34] Rad je nastao u okviru znanstvenog projekta "Ekonomski učinci regulatornih reformi elektroenergetskog sektora", br. 081-0361557-1455, koji se provodi uz potporu Ministarstva znanosti, obrazovanja i športa Republike Hrvatske.