

THE EFFECT OF THE LIBERALIZATION OF ELECTRICITY MARKET IN POLAND

Brzeziński S., Zborowski K., Pietrasieński P.*

Abstract: This article presents effects of implementing the Third Party Access (TPA) principle on liberalization of electricity market in Poland. TPA principle is an instrument which enables introduction of competition in energy trade subsector. Author presents structure and main objectives of energy market in Poland. The article includes TPA influence on selection of energy supplier and the barriers to changing one, including economic, technical and formal ones. Polish energy market is presented against a background of other countries.

Key words: energy market, TPA (Third Party Access), electricity supplier

Introduction

Energy market in Poland

The major step towards the liberalization of the Polish energy market was the amendment to the act – the Energy Law Act that entered into force on 3 May, 2005. It included the transposition of the regulations of the “Electrical” Directive 2003/54/WE of the European Parliament and the Council of the European Union from 26 June 2003 concerning common rules for the internal market in electricity. The liberalization of electricity markets in the EU was initiated earlier with the adoption of the Directive 96/92/WE of the European Parliament and the Council that for the first time introduced the TPA principle [1, 2]. Then European Parliament and the Council adopted a new directive 2003/54/WE the Energy Law Act that overruled the Directive 96/92/WE. The changes included the set time period for granting the right of a free choice of a supplier for specific groups of recipients. The main point was that from 1 July 2007 this right was to be granted to all recipients, including households.

Electricity market operates on two levels. [3, 4] Wholesale market is the first level, which involves electricity producers and wholesale buyers. Direct customers may also operate on it, but the cost of participation, the problem of balancing supply, the necessity to possess telecommunication and computer systems and personnel costs effectively limit this participation to very large electricity recipients. Retail market is the second level, where energy producers competing with each other on price, terms of delivery and additional services, offer customers supply of energy

* **Prof. Stanisław Brzeziński PhD.**, Czestochowa University of Technology, Faculty of Management,

✉ corresponding author: Stanislaw_Brzezinski@wp.pl; krzysztof.zborowski@ewsa.pl; pawelewa@yahoo.com

[5].The specificity of electricity market is caused by natural features of electricity system process. It is noticeable, as the difference between electricity market and other commodity markets. These differences include:

- necessity to ensure continuous and accurate balancing of demand and production of electricity,
- low price flexibility of demand for this product in the short period,
- impossibility of even short-term storage of the product,
- strategic importance of failure-free operation of the power system,
- facility for monopolization of the market through the use of specific physical features of the electricity system process.

Electricity market does not meet conditions of competitive market. It has been and in many countries is still characterized by natural monopoly features. For many years uniqueness of energy and conditions of technical specifics of its delivery, even in highly developed countries, determined the connection of monopolistic organization of the supply of infrastructural goods and services and public supervision. [6]Almost everywhere, this sector willingly determines oneself as “natural monopoly”. It justified lack of competition in energy sector and created many negative consequences. This situation created a new doctrine of economic policy, which purpose is liberalization and competition in energy market. [7] The reduction of the total cost of production, transmission, distribution and as a result, prices paid by customers was the main object of power sector reform in transformation of Polish economy. Experiences of other countries showed that this goal can be achieved through introduction of competition into power sector and then stimulating it. Polish access to the European Union and obligation to adjust structure and functioning of energy market to EU requirements was another important reason. Important to achieve this goal are allowing specific physical features of production and supply of energy, implying, among others balancing supply and demand in any given period without possibility of storage.

There are three major types of the wholesale electricity market, due to the way the organization: [8]

- Centralized market (central) - with integrated suite of sales offers of electricity and balancing offers, which is central, most often compulsory trading market.
- Stock market - is based on a special, mostly non-compulsory electricity exchange and balancing system based on supply-side and reducing offers made to distribution system operator.
- Decentralized market – in its’ structure energy exchange, distribution system operators and trade and technical operators form the basis for the operation of electricity market.

Principles of retail electricity market operation are relatively simple. In the area of regulated retail market, where main objects are final customers (FC). Distribution companies provide energy supply for these customers, according to tariffs approved by the President of ERO (Energy Regulatory Office). However, in competitive area of this market, electricity customers have the right to choose their

supplier (TPA - Third Party Access). They can buy power from suppliers, which are distribution companies or intermediaries in energy trading (trading companies, stock market), or directly from producers. The fee for energy supply is paid to the energy company which cooperates with customer. The structure of energy market in Poland with some simplifications presents as follow (figure 1): [8]

- Producers (suppliers) of electrical energy (P). In Poland, according to data from December 2012, there are few methods of electricity generation: 24 professional power plants, 44 thermal power stations, 160 industrial thermal power stations [8], renewable energy sources (990 installations) and wind power stations (663 installations);
- Transmission System Operator (TSO);
- Trading Operators, which include Energy Exchange, energy trading companies (Trading Companies – TC); by the end of 2012, ERO concessions received 363 trading companies;
- Trade and Technical Operators (TTO);
- Energy Recipients (network recipients, Distribution System Operators – DSO and Final Customers – FC), authorized recipients and recipients connected to transmission network.

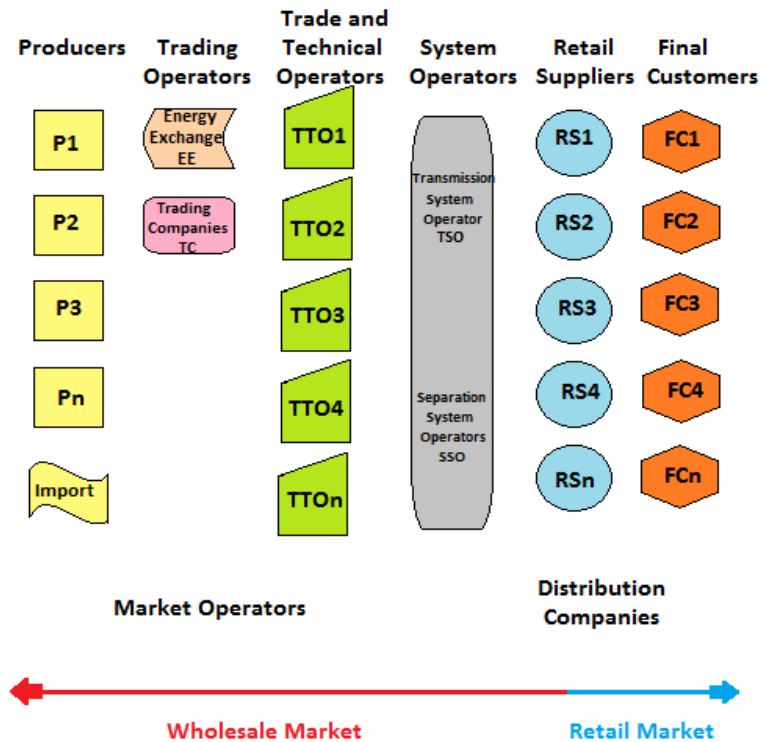


Figure 1. The structure of electricity market
 Source: Author's elaboration based on [7]

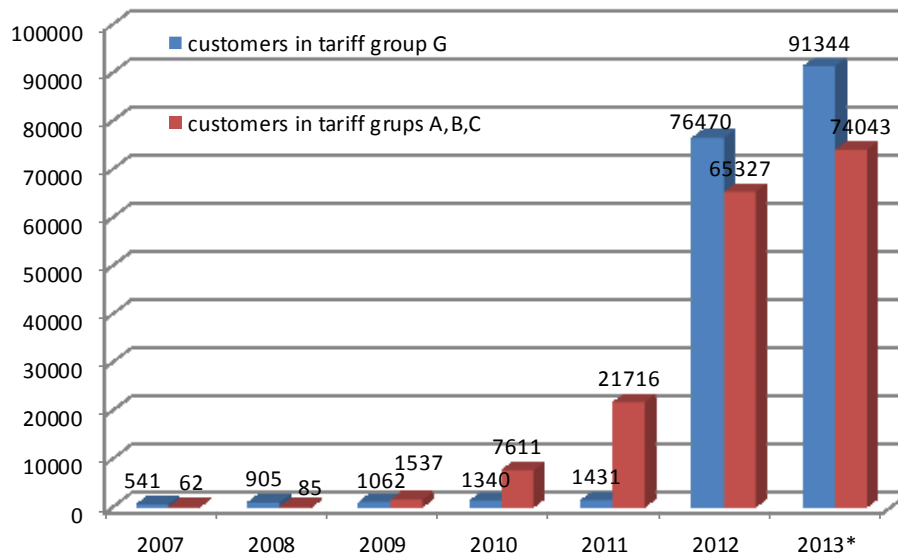
The main objective of electricity market is to create conditions, which fulfillment allows electricity customers to purchase energy in a competitive market. On the other hand, the emergence of a strong, efficient and competitive market is not easy. It is connected with the need to impose on a network companies being the owner and user of electricity networks, an obligation to allow the use of the network by others for a fee for transmission services, of course. This is called the principle of third party access to energy networks (TPA), which allows usage of transmission services by any third parties. It is not possible to break natural monopoly of electricity network companies in electricity supply market without the compulsory TPA principle. In practice, there is no change to introduce competitive market in the field of manufacturing and trading. In accordance with the principle of third party access to the network, the supplier has the possibility to send electricity to any customer. This customer has the opportunity to choose any supplier (manufacturer) of energy, including other than previous, which is the owner of the network.

It can be concluded that by entering electricity market, customers are divided in two main categories: non-tariff and tariff customers. The first one has right to choose their electricity supplier and to use tariff purchases. The second group buys electricity from local distribution companies and makes payments according to the tariffs approved by the President of ERO. It can be assumed that with the development of electricity market and the dissemination of TPA, tariff trade will decline steadily in future. In order to maintain a stable level of revenue from sales of electricity, network companies and trading companies will significantly enhance their activities in the area of non-tariff market that allows negotiating better prices and conditions of electricity supply.

Effects of the TPA principle on electricity market

In July 2007, the TPA principle was introduced in energy market in Poland. According to predictions, liberalization of electricity market results in a systematic increase in the number of customers who used the TPA and changed their suppliers (Figure 1).

The data from figure 2 indicate that after many years of relatively small interest of switching electricity supplier, since 2009 we are seeing a considerable increase in the amount of customers, who used the TPA and changed energy suppliers. This trend can be observed both for recipients of tariff group G (household) as well as tariff groups A, B, C (which are not households).



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Figure 2. The number of customers who used the TPA and switched electricity suppliers [end of the year]

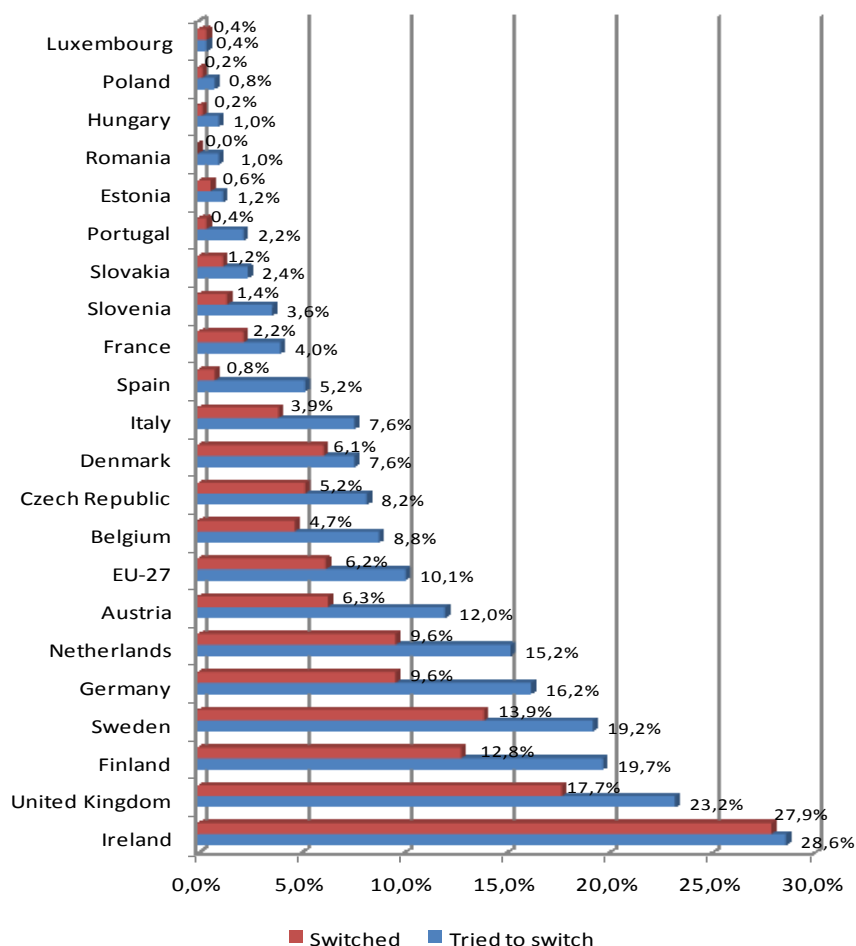
Source: Author's elaboration based on: www.ure.gov.pl

Table 1. The number of TPA recipients and energy supplied by the Distribution System Operator

No.	Distribution System Operators	The number of TPA recipients		Energy delivered to TPA recipients	
		XII 2012	II 2013	I – XII 2012	I – II 2013
1.	PGE Company	35 792	39 140	8 464 902	1 390 916
2.	ENERGA Company	37 027	39 306	4 590 218	816 179
3.	TAURON Company	35 896	48 731	22 463 340	3 864 963
4.	ENEA Company	22 497	26 158	5 448 374	979 959
5.	RWE Stoen Company	10 247	11 759	2 150 855	410 585
6.	PKP Energetics Company	175	213	85 061	18 110
7.	Polenergia Company	120	100	76 123	6 693
8.	Orlen Company	1	1	14 282	3 038
9.	ESV Energy Company	34	53	18 224	5 347
10.	ChemicalPlants ZACHEM	1	2	1 490	3 170
11.	Energy Services Kleszczów	3	4	207 898	55 565
12.	ZAK Company	3	3	30 961	7 806
13.	ZEC Company	1	2	7 760	5 579
14.	ENERGETICS WISŁOSAN	0	12	0	1 534
15.	Energomedia Company	0	2	0	124
Total:		141 797	165 486	43 559 489	7 569 568

Source: Author's elaboration based on: www.ure.gov.pl

The largest number of TPA customers in all tariffs are the largest companies, Distribution System Operators PGE, Energy and TAURON. To the end of 2012, more than 35 thousand of TPA recipients decided to use their services (table 1). The ENEA and RWE have also acquired many new customers. It is worth noting that TAURON gained customers from tariff groups with high energy demand resulting in the fact that TPA recipients in this company generate demand on significantly higher level in comparison with other Distribution System Operators.



Note: Switching rate refers to the percentage of households that switched provider in the two years to July but excluding those who switched because they moved house. No respondents are available for Cyprus, Malta, Latvia, Lithuania, Romania, Bulgaria and Greece as switching is limited by the existence of monopolies or regional monopolies. Therefore supplier switching in these countries is set to 0%. The EU average is calculated as the weighted average across all Member States using 2010 Eurostat population figures as weights.

Figure 3. Percentage of customers who tried to switch and switched supplier in two years prior to mid 2010 (including those who switched because they moved around)

Source: Author's elaboration based on [9]

Figure 3 presents percentage of customers who tried to switch and switched in two years prior to mid 2010. It should be mentioned that consumers in Bulgaria, Cyprus, Greece, Latvia, Lithuania, Malta and Romania were not asked about their switching behaviour; either because supplier switching is not possible or because switching is only possible in cases where consumers move to a different region serviced by a different regional monopolist.[10]

The most significant changes can be observed in Ireland, where about 30 % of customers switched and tried to switch their energy supplier and in the United Kingdom (17,7% of customers switched, 23,2% tried to do this). In Poland, these changes were virtually unnoticeable, only 0,2% of energy recipients decided to switch their energy supplier and 0,8% tried to do this. The data would seem to suggest that significant changes in energy suppliers can be observed in more developed countries such as Ireland, the United Kingdom, Finland, Sweden or Germany. Though, in Sweden and Finland has been observed the biggest difference between customers who tried to switch and switched energy supplier. It may be connected with fact that there are strong marketing encouragement for switching energy supplier and some barriers.

Summary

The electricity market in Poland does not meet conditions of competitive market in larger scale yet and is still characterized by natural monopoly features. The liberalization of this market by implementation of TPA principle gives an opportunity to change this situation. The liberalization process gives a recipient the possibility to choose an energy supplier. In comparison with other countries, in Poland this process advances slowly. The fact that only a small number of customers are involved in the process of changing electricity supplier can be explained by the lack of competitive offers of trading companies directed to households, the fact that buyers are generally not aware of being entitled to change energy supplier and this procedure poses a lot of inconvenience. There are also technical and formal barriers, such as lack of standardized contracts and lack of legislation guaranteeing stability of electricity supply. However, the TPA principle had been introduced in 2007 and it results in a systematic increase in the number of customers who used the TPA and changed their supplier. Besides all the economic, technical and formal barriers of changing electricity supplier, implementation of TPA principle seems to result in the increase of competition scale in energy sector in Poland.

References

- [1]. A. Dobroczyńska (ed.) *Energetyka w Unii Europejskiej, Droga do konkurencji na rynku energii elektrycznej i gazu*, URE, Biblioteka Regulatora, Warszawa 2003

- [2]. A. Lech, *Implementation of TPA (Third Party Access) principle in Polish energy sector*. Comparative Economic Research. Volume 13, Issue 3, December 2010
- [3]. W. Mielczarski, *Rynki energii elektrycznej. Wybrane aspekty techniczne i ekonomiczne*, Wyd. Agencja Rynku Energii S.A. i Energoprojekt-Consulting S.A., Warszawa 2000
- [4]. J. K. Grabara: *IT Solutions for Power Energy Production and Distribution*. Wyd.PTI - Oddz.Górnośląski., Katowice, 2006
- [5]. D. Maftai: "A New Approach for Energy Security – the Efficient Management of Funds for Investment in Infrastructure for Green Energy", Polish Journal of Management Studies, vol. 5/2012.
- [6]. *Stan konkurencji na rynku energii elektrycznej i rynku gazu: raporty porównawcze komisji europejskiej*, Biblioteka Regulatora, URE, Warszawa, styczeń 2006
- [7]. M. Starostka-Patyk, J. Grabara „Application of Modern Solutions for Procurement Impacts on Processes of Electricity Production”, W:PE 2010. X Międzynarodowa Konferencja Naukowa. Prognozowanie w Elektroenergetyce. Planowanie rozwoju, eksploatacja i zarządzanie w elektroenergetyce. Częstochowa 2010.
- [8]. P. D. Cameron, *Competition In Energy Markets: Law and Regulation in the European Union*, OXFORD University Press, 2002.
- [9]. L. Szczygieł: *Model rynku energii elektrycznej*, www.ure.gov.pl
- [10]. *cire.pl*
- [11]. *The functioning of retail electricity markets for consumers in the European Union*. Final Report, ECME Consortium. November 2010

EFEKT LIBERALIZACJI RYNKU ENERGII ELEKTRYCZNEJ W POLSCE

Streszczenie: W artykule przedstawiono efekty realizacji zasady TPA (Third Party Access) której głównym założeniem jest liberalizacja rynku energii elektrycznej w Polsce. Zasada TPA jest instrumentem, który umożliwia wprowadzenia konkurencji w podsektorze energii handlowej. Autorzy przedstawiają strukturę i główne cele rynku energii w Polsce. Artykuł zawiera wpływ TPA w sprawie wyboru dostawcy energii i przeszkód w procesie jego zmiany, włączając w to aspekty ekonomiczne, techniczne i formalne. Polski rynek energii jest przedstawiony na tle innych krajów.

Słowa kluczowe: rynek energii, TPA (Third Party Access), dostawca energii

波蘭電力市場自由化的影響

摘要: 本文介紹了實施第三方訪問 (TPA) 波蘭電力市場自由化原則的影響。TPA原則是能源貿易界別分組的儀器, 使引入競爭。作者提出了structureand能源市

場的主要目標，在波蘭。本文包括TPA能源供應商的選擇上影響和改變一個人，包括經濟，technicaland的正式壁壘。波蘭能源市場對其他國家的背景下提出的。