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Original scientific paper

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LIBERALIZATION AND MANAGEMENT OF THE ELECTRICITY MARKET IN THE REPUBLIC OF MACEDONIA

Abstract

Electricity is certainly the most noble form of energy and it is the most important factor for the economic development of a country, which utilization that started 120 years ago has become the cornerstone of our civilization and life. Therefore, this subject is quite contemporary and this paper focuses on the detailed and practical elaboration of the economic aspects of the electricity market, starting from import, liberalization and electricity prices and its management within the frames of the European Union and the Republic of Macedonia.

The analysis of this paper is focused and aims towards the importance and influence of these aspects on managing companies from the electrical energy system for the counties, achieving better business performance, improving efficiency and effectiveness in their work and development, gaining a better market position, improving competitiveness as well as economic development of the entire country. In order to achieve these goals and challenges, this research is based on carefully selected and processed data, which form the underpinning thesis for the characteristics, importance and up-to-date character of the electricity market management in the European Union and the Republic of Macedonia.

Key words: market management, import, liberalisation, prices, electricity.

JEL classification number: L11; O13; P48; Q40

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1. Dependence of the Republic of Macedonia from import of electricity

The required funds for implementation of the energy balance for the period 2008-2012, based on the planned import of electricity and the unit price of imported electricity are shown in Table 1.

Table 1: Required funds for implementation of the energy balance for the period 2008-2012

	2008	2009	2010	2011	2012
Planned import(GWh)	3917	2839	1395	1413	1270
Unit price (€/MWh)	75	70	60	55	70
Required funds (million €)	293,8	198,7	83,7	77,7	88,9

Source: Energy Balances for the respective years, www.economy.gov.mk

The crucial economic problems that burden the energy sector of the Republic of Macedonia, are as follows: increased energy deficiency, depreciated price of energy for many years, especially electricity; the depreciated price of electricity created losses and shortage of funds for investment in maintenance, modernization and construction of new facilities in the energy sector. We also have to take into consideration the fact that Macedonia is part of the group of countries with anaemic economic development and sluggish structural reforms; high total losses of electricity (both technical and commercial); low energy efficiency; absence of complex energy-saving programs, especially in the household sector, and in the other segments which are considerable consumers. The bottom line is that these conditions determine low energy sustainability of the Republic of Macedonia.

In this context, the fact that is especially warring is the increasing dependence of the country from imported electricity, which in 2008 reached staggering 32% of the total consumption. In 2010 it decreased to 17%. The following year (2011) the dependence from import increased to 29%, in 2012 it decreased to 27%, and in 2013 the import is planned to decrease to 23% (Table 2).

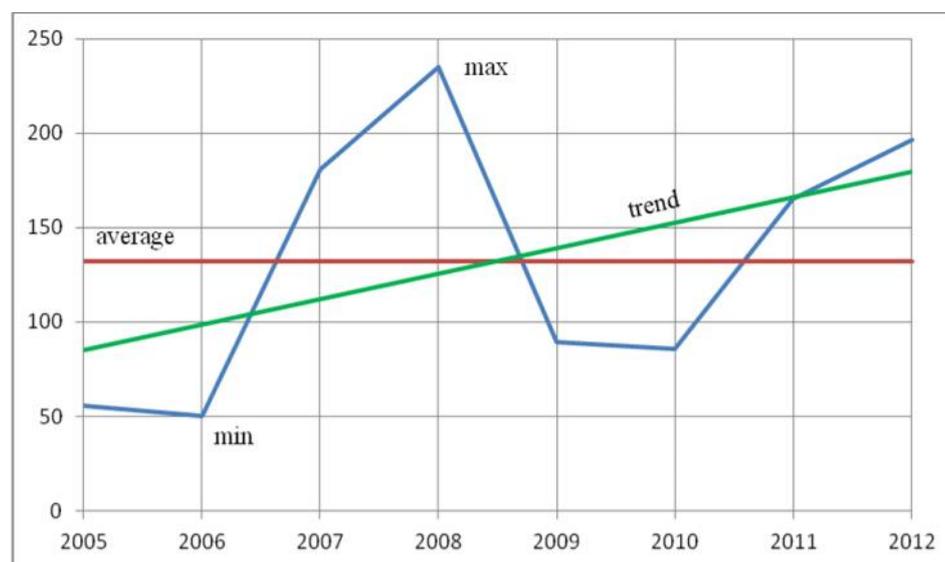
Table 2: Import of electricity in the Republic of Macedonia for the period 2005-2013 (GWh)

	Achieved									Plan
	2005	2006	2007	2008	2009	2010	2011	2012	2013	
I. Net import	1662	1923	2600	2747	1565	1420	2634	2368	2121	
II. Total consumption	8121	8489	8651	8581	7797	8192	9024	8798	9028	
III. Net im./ Total con. (I/II)	0.20	0.23	0.30	0.32	0.20	0.17	0.29	0.27	0.23	

Source: Energy Balances for the respective years, www.economy.gov.mk and calculations based on the obtained data from the former

The amount spent for import of electricity in the Republic of Macedonia is 1,058.5 million EUR. The lowest spent amount was in 2006, 50 million EUR, whereas the highest spent amount was in 2008, 234.9 million EUR. The average spent amount per annum is 132.3 million EUR (Diagram 1).

Diagram 1: Amount spent for import of electricity in the Republic of Macedonia for the period 2005-2012 (million EUR):



Source: NBRM-Skopje, and calculations based on the obtained data from the former

Required and spent financial means for import of electricity in the period from 2005-2012 are shown in Table 3. The spent financial means for the analysed period amount 92% of the required finances.

Table 3: Required and spent amount for import of electricity in the Republic of Macedonia in the period 2005-2012 (million EUR)

Year	2005	2006	2007	2008	2009	2010	2011	2012	Total
Required	87,6	125,7	191,5	293,8	198,7	83,7	77,7	88,9	1.147,6
Spent	55,7	50,0	180,8	234,9	89,2	85,9	165,3	196,7	1.058,5
Required/ Spent (%)	63,58	39,77	94,41	79,95	44,89	102,62	212,74	221,26	92,23

Source: NBRM-Skopje, Energy Balances for the respective years, www.economy.gov.mk and calculations based on the obtained data from the former

In order to carry out transparent purchase of electricity in the Republic of Macedonia, as well as due to the increased number of consumers that will have the right to freely choose their own supplier, in 2009 ELEM established a new company ELEM TREJD DOOEL Skopje, as a single entity for trading electricity, separated from JSC ELEM-Skopje.

In the same context an electricity exchange should be set out, thus forming a free regional electricity market, as part of the Internal Market of the European Union, with the purpose of integrating the Republic of Macedonia in the EU.

2. Liberalization of the electricity market in the European Union and in the Republic of Macedonia

In the beginning of 1977 the Government of the United States of America, as the first country in the world, formed the Federal Energy Regulatory Commission (FERC), in order to regulate all aspects of electricity including trade between the states. At the same time this commission enforced the process of liberalization: without FERC, the liberalization process would not have occurred in the USA¹.

¹ , , (2010) " , , .18-20

The liberalisation of the electricity market in Europe took place in the 90s, i.e. in 1996 the European Union agreed to liberalise the electricity sector. Basically, the liberalisation started because the governments realised the advantages of competition between the suppliers of electricity and the wider selection for the consumers.

The Treaty Establishing the Energy Community² was signed in 2005 between the Republic of Macedonia, i.e. all counties (cosignatories of the Athens Memorandum) from the region of Southeast Europe including: Albania, Bulgaria, Bosnia and Herzegovina, Croatia, Macedonia, Romania, Serbia and Montenegro, Turkey, UNMIK (Kosovo) and the European Community.

In the process of fulfilling the obligations from the Agreement, the large consumers (9 industrial facilities), shifted from the category of tariff consumers into the category of qualified (direct) consumers which have the right to individually choose their supplier and purchase electricity at market prices.

ELEM supplies with electricity all other tariff consumers, at prices regulated by the Energy Regulatory Commission (ERC). This category of tariff regulated consumers includes households, commercial and service sector, and industrial facilities up to 35 kV.

The qualified consumers which have over fifty (50) employees and a total annual turnover or total assets of over ten (10) million euro, not including the energy producers and transmission and distribution system operators, can individually participate on the electricity market, where they can purchase electricity by means of non-regulated agreements from traders or suppliers³.

It has been envisaged for these consumers to obtain the attribute of qualified consumers who may participate on the electricity market independently in the second phase of liberalisation, starting from

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01.01.2013; however this has been postponed twice, once on 27.12.2012⁴ and again on 27.06.2013⁵.

In the context of fulfilling the obligations deriving from the Treaty Establishing the Energy Community, the Republic of Macedonia adopted a new Law on Energy in 2011, and in the same framework the obligation for opening the market for the households becomes effective on 01.01.2015.

3. Management of the electricity market

The manner of managing each enterprise has a certain target. The target is comprised in the mission of the enterprise and its long-term goals. The task of strategic management is realization of the target. Targets are always put in a certain context. The fundamental context of strategic management is the environment. Most commonly environment is divided as external and internal. The approach of the strategic management is that chances and threats are connected to the external environment, whereas the weaknesses and strengths of the company are connected to the internal environment. The essence of the company strategy is to use the characteristics of the internal and external environment in a balanced manner in order to effectuate the targets of its owners. J. Quin had a similar concept defining the strategy as a sum of activities undertaken by the company in order to respond to the chances and threats using its strengths and avoiding its weaknesses⁶.

A very important element in the development of the economy of a country is the energy sector, which if upgraded continuously shall attract huge investments, and shall enable companies to plan their development more comfortably. This shall contribute to the promotion of the Republic of Macedonia as an investment destination, which is also one of the commitments of all Governments in continuity.

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27.12.2012

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27.06.2013

⁶ Đurić in N. Dragan, Janošević V. Stevo, Kalinašin M. Đorđević, (2010) "Menadžment i strategija", Beograd, .251

The strategic electric power commitments of the Republic of Macedonia have been defined in the Strategy for Energy Development until 2030, which envisages fulfilling all obligations undertaken by signing the international treaties, agreements, protocols and it is in accordance with the practice and regulations of the EU.

In this context the Republic of Macedonia should also manage and fulfil the obligations referring to the electricity market, i.e. Directive 2009/72/ and Regulation 714/2009/ , part of the European Union's third energy package. Managing and fulfilling these obligations by the competent institutions in the Republic of Macedonia (which includes adopting a new Law on Energy with appropriate bylaws) are intended for effective opening and functioning of the electricity market. As a contracting party of the Energy Community and future member of the European Union, the Republic of Macedonia should implement the third package latest by January 1st 2015.

Despite the legal institutional framework, the operating of the energy sector, based on the market principles, is the most important precondition for investments in the sector.

The most important characteristic of the energy markets are the prices and the manner of forming prices.

Regarding the price of electricity, it is lower compared to the corresponding market prices and therefore disproportion occurs between the price of electricity and the prices of the other energy sources (MKD/kJ). As a result, a great number of consumers use electricity for heating their homes.

Finally, the low price of electricity has a negative effect over the investments for improving energy efficiency in the industry and households.

In order to overcome these problems it is necessary for the price management to enable gradual adjustment towards the market price, which would also increase the interest of different investors to invest in the energy sector and in other sectors thus increasing the energy efficiency.

The increase may cause socially vulnerable households not to be able to withstand these prices. Therefore, it is necessary to manage this situation and undertake activities towards reducing the negative social effects correlated to the implementation of the Treaty Establishing the European Community.

Today, although the price of electricity is determined by the Regulatory Commission, according to a well-defined methodology, the tariff methodology does not include subsidies or any other social and similar measures.

In order to manage such measures, the Government decided to allocate funds for the realization of a program for subsidising of electricity consumption, where the beneficiaries are households that are recipients of state benefit, and as subsidy they receive 700 MKD/month. For this purpose the Government of the Republic of Macedonia allocated 74 million MKD in the Budget for 2013.⁷

At the same time the Government also allocates funds for realisation of the programme for compensating part of the expenses for purchased solar collectors and for this purpose it has envisaged 6 million MKD in the Budget for 2013.

In recent years, price management of electricity has contributed to a certain increase, however the price is still lower compared to the price of electricity in the region and the EU countries.

In the period 2009-2012 the average price of electricity for tariff consumers and households has been increasing year after year: in 2010 - 10% compared to 2009, in 2011 - 6% compared to 2010, in 2012 – 8% (until 31.07.2012) and from 01.08.2012 the price of electricity increased for additional 9.83% or in total 18% compared to 2011 (Table 4).

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Table 4: Average prices of electricity in the Republic of Macedonia for the period 2009-2012

		2009	2010	2011	2012*	2012**	10/09	11/10	12**/11
For tariff consumers	MKD/kWh	3.440	3.787	3.995	4.307	4.731	1.10	1.06	1.18
	€/kWh	0.056	0.062	0.065	0.070	0.076			
For households	MKD/kWh	3.040	3.340	3.530	3.800	4.180	1.10	1.06	1.18
	€/kWh	0.049	0.054	0.057	0.062	0.068			

Source: Energy Regulatory Commission of R. Macedonia, Decisions for approval of regulated maximal income and price for exercising energy regulated activity: supply of electricity to tariff consumers by EVN Macedonia AD Skopje for the period 2009/2012.

Remark: The average price for households also includes the added value of 33.33% (from the consumed electricity) for engaged power, but it does not include the value added tax (18%)

* Price of electricity until 31.07.2012

** Price of electricity from 01.08.2012 which increased 9.83% compared to *

4. Price of electricity per country

For households with moderate electricity consumption in the EU, the price of electricity in the second half of 2012 was highest in Denmark (0.297 €/kWh), Cyprus (0.291 €/kWh), Germany (0.268 €/kWh) and Italy (0.230 €/kWh), while it was lowest in Bulgaria (0.096 €/kWh), Romania (0.108 €/kWh) and Estonia (0.112 €/kWh).(Table 5)

From the counties that tend to be integrated in the EU the lowest price of electricity for the same period was recorded in Macedonia (0.079 €/kWh) and Bosnia and Herzegovina (0.080 €/kWh).

In 2012, the average price of electricity for the households in the Republic of Macedonia was 2.5 times lower than the price in the European Union (Table 5). This table shows that the average price of electricity in Denmark and Bulgaria compared to R. of Macedonia is as follows: In Denmark it is 3.76 times higher, whilst in Bulgaria it is 22% higher.

If we compare Tables 4 and 5 we will notice that the average annual price of electricity in the observed period 2009 – 2012 in the Republic of Macedonia and in the EU-27 has been increasing year after year. However, this increase is higher in the Republic of Macedonia and

it amounts 10%, 6% and 18% respectively, compared to the EU-27 where it amounts 5%, 7% and 6%.

At the same time prices of electricity between the second half of 2011 and the second half of 2012 have increased in most of the member countries of EU.

Highest increase of prices in the EU countries have been recorded in Cyprus(21%) and in Greece (15%), while the prices have decreased in Sweden 5%, in Hungary 2% and in Finland 1%.

The price of electricity increased in all countries on the Balkans, and the highest increase has been recorded in Croatia 21% and in Turkey and Montenegro 19%.

For the industrial consumers in the EU, the price of electricity in the second half of 2012 was highest in Cyprus (0.234 €/kWh), Italy (0.199 €/kWh) and Malta (0.180 €/kWh), while the price is lowest in Finland (0.074 €/kWh), Sweden, Bulgaria (0.078€/kWh) and France(0.079 €/kWh) (Table 5).

From the countries that tend to be integrated into the EU, Bosnia and Herzegovina (0.066 €/kWh) and Montenegro (0.071 €/kWh) have the lowest price of electricity for the industry.

In all countries without exception, not only in the EU but also in the Balkans, the price of electricity for the industry is lower compared to the electricity for the households. The table does not include price of electricity for the industry in Macedonia.

Table 5 shows that in the observed period 2009-2012 the average price of electricity for households and industry in EU-27 has been increasing year after year. This increase for the households is higher and amounts 5%, 7% and 6%, compared to the industry with 2%, 7% and 5%.

Furthermore, in the period between the second half of 2011 and the second half of 2012, the prices of electricity in this sector increased in two-thirds of the EU member states.

Table 5: Semi-annual prices of electricity for households and industry per country and EU-27, in the second half of each year for the period 2009-2012, comparison 2012-2011 (€/KWH)

	Prices of electricity per kWh									
	Households consumption: (2500 - 5000) kWh/year.					Industry consumption: (500 - 2000) MWh/year.				
	2009	2010	2011	2012	2012/ 2011	2009	2010	2011	2012	2012/ 2011
	€/kWh	€/kWh	€/kWh	€/kWh	%	€/kWh	€/kWh	€/kWh	€/kWh	%
EU-27	0.164	0.173	0.185	0.197	6.56	0.103	0.105	0.112	0.118	5.82
EA	0.173	0.182	0.194	0.206	6.13	0.106	0.109	0.118	0.124	5.69
BE	0.186	0.197	0.212	0.222	4.91	0.108	0.105	0.115	0.111	-3.49
BG	0.082	0.083	0.087	0.096	9.24	0.064	0.060	0.067	0.078	16.32
CZ	0.139	0.139	0.147	0.150	3.57	0.112	0.108	0.108	0.103	-3.85
DK	0.255	0.271	0.298	0.297	0.00	0.093	0.096	0.093	0.099	7.22
DE	0.229	0.244	0.253	0.268	5.73	0.113	0.119	0.124	0.130	4.34
EE	0.092	0.100	0.104	0.112	7.77	0.065	0.073	0.075	0.082	8.92
IE	0.186	0.188	0.209	0.229	9.73	0.118	0.113	0.129	0.140	7.88
EL	0.103	0.121	0.124	0.142	14.54	0.094	0.103	0.111	0.122	9.99
ES	0.168	0.185	0.209	0.228	8.96	0.112	0.109	0.116	0.120	3.46
FR	0.121	0.135	0.142	0.145	1.97	0.065	0.072	0.081	0.079	-2.48
IT	0.200	0.192	0.207	0.230	11.23	0.137	0.144	0.166	0.199	19.76
CY	0.164	0.202	0.241	0.291	20.56	0.149	0.173	0.211	0.234	11.05
LV	0.105	0.105	0.134	0.137	0.63	0.089	0.091	0.110	0.111	-0.51
LT	0.093	0.122	0.122	0.127	3.87	0.079	0.105	0.104	0.114	10.15
LU	0.188	0.175	0.166	0.171	2.65	0.116	0.102	0.100	0.101	1.30
HU	0.166	0.157	0.155	0.156	-1.66	0.130	0.105	0.100	0.108	6.18
MT	0.151	0.170	0.170	0.170	0.00	0.129	0.180	0.180	0.180	0.00
NL	0.184	0.176	0.184	0.190	3.10	0.111	0.098	0.094	0.097	3.21
AT	0.191	0.193	0.197	0.202	3.00	/	0.113	0.113	0.111	-1.68
PL	0.129	0.138	0.135	0.153	8.87	0.093	0.099	0.094	0.096	-2.30
PT	0.159	0.167	0.188	0.208	9.68	0.094	0.092	0.101	0.115	13.55
RO	0.098	0.105	0.109	0.108	4.42	0.063	0.081	0.080	0.083	8.60
SI	0.134	0.143	0.149	0.154	3.35	0.096	0.101	0.096	0.094	-2.39
SK	0.156	0.164	0.171	0.172	0.70	0.140	0.120	0.126	0.127	0.79
FI	0.129	0.137	0.157	0.150	-0.89	0.065	0.068	0.075	0.074	-0.80
SE	0.165	0.196	0.204	0.208	-4.69	0.069	0.084	0.083	0.078	-12.38
UK	0.141	0.145	0.158	0.179	3.86	0.101	0.100	0.104	0.121	6.29
IS				0,116		/	/	/	/	
NO	0.156	0.191	0.187	0.178	-9.79	0.080	0.094	0.091	0.086	-10.11
ME			0.085	0.101	18.52	/	/	0.083	0.071	
HR ⁸	0.116	0.115	0.115	0.138	21.11	0.090	0.090	0.089	0.094	5.54
MK				0,079		/	/	/	/	
TR	0.118	0.137	0.115	0.147	19.35	0.079	0.092	0.076	0.096	17.69
AL			0,116	0.117	0.00	/	/	/	/	
BA		0,074	0,079	0.080	2.34	/	0.062	0.064	0.066	1.66

Source: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Electricity_and_natural_gas_price_statistics

⁸ Croatia became a member of the EU on 01.07.2013 and therefore in this table it is presented as a country outside of EU-27, since the data refer to the period 2009-2012.

The biggest increase of prices in the EU member states has been recorded in Italy 20% and Bulgaria 16%, while the price decreased in Sweden 12%. (In Norway the price of electricity decreased 10%).

The price of electricity for the industry increased in all of the Balkan countries, and the highest increase was recorded in Turkey (18%).

Conclusion

The detailed and practical review of the economic aspects concerning the electricity market, i.e. import, liberalization and prices of electricity, its management within the frames of the European Union and the Republic of Macedonia, including the analysis of the economic indicators, clearly show their importance and influence on the electric-energy system, competitiveness and economic development of the countries.

All of the above mentioned in relation to the importance of the electricity market in the EU and Macedonia, especially in times when the Republic of Macedonia is in the middle of the process of integration in the European family, leads us to the following conclusion:

- ◆ In order to reduce the dependence of the country from import of electricity, special activities have to be performed for the purpose of improving the results in the electricity production sector, by utilization of renewable energy sources, increasing energy efficiency and effectiveness, preparation and coordination of public interest investment projects, and investing in construction of power plants and services.
- ◆ Creating a stable investment climate by the state, in order to attract foreign and domestic investments in the electricity production sector, thus reducing the country's dependence from import and the trade deficit having a direct impact on the development of the domestic economy and the macroeconomic stability of the country in general.
- ◆ Investing in increasing production of electricity from renewable sources, consequently reducing the country's dependence from import and enabling us to join the modern and technologically advanced countries and to become part of the European Union. In that regard, the Government of the Republic Macedonia should

continue providing subsidies for solar thermal collectors.

- ◆ By increasing the energy efficiency and production of electricity through new investments in renewable energy sources, Republic of Macedonia will make a great contribution in fulfilling the targets of EU's internal market, i.e. Targets 20-20-20, which should be implemented by the year 2020.
- ◆ The liberalisation of the electricity market should continue according to the envisaged rate, and should be completed by opening the market to all consumers (households and small consumers) in January 2015, and at the same time the Republic of Macedonia should continue fulfilling the obligations deriving from the Treaty Establishing the Energy Community
- ◆ The liberalisation shall enable the consumers to choose their own supplier of electricity at market prices, thus introducing actual competition, which is still not present in the Republic of Macedonia, due to the regulated market of electricity prices for households by the Energy Regulatory Commission. In this regard, electricity exchange should be introduced in the Republic of Macedonia.
- ◆ As a result of the low and yet not regulated price of electricity that only covers the expenses of the sectors (production, transmission and distribution) and does not provide investments, the sectors owned by the state cannot be financed by the state, despite the need of investments and therefore, private initiatives should be launched.
- ◆ In the following four-year period the Government of the Republic of Macedonia is planning to attract foreign and domestic investments which would increase the capital of JSC ELEM through privatization of no more than 49% of the shares of JSC ELEM. The idea is most definitely acceptable; however, it is very hard to implement it since it is hard to find an investor that would accept to buy less than 51% of the total number of shares.
- ◆ In parallel with the increase of the price of electricity for households, the Government of the Republic of Macedonia should continue with the programme for subsidising households of recipients of state benefit.
- ◆ After comparing the prices of electricity between countries, it is apparent that the price is higher in the more developed countries, as well as in countries where a significant portion of electricity

production is based on renewable energy sources, especially wind power plants, mainly being the result of high investment costs.

Bibliography

1. Đurić N. Dragan, Janošević V. Stevo, Kaliačin M. Đorđević (2010) "Menadžment i strategija", Beograd;
2. Fred R. David, (2009) "Strategic Management", twelfth edition, New Jersey;
3. Gareth R. Jones, Jennifer M. George, (2008) „
“; ;
4. Kotler P. (1994) "Upravljanje marketingom", Informator, Zagreb;
5. :
2013 2017 ,
, .50/2013;
6. 2004 2011, „ “; ;
7. 2009 , 2010 2011 , 2008 ,
2009 , 2010 2011 , . 165/2008; .165/2008;
.161/2009 .172/2010;
8. 2012 2016 2013 2017 ,
, .182/2011
.170/2012;
9. , .63/2006, 36/07, 106/08, 16/2011;
10. , .59/2006
11. :
2009, 2010, 2011, 2012 2013 ;
12. : ,

- , 07 2012, www.erc.org.mk,
.57 08.05.2012
13. :
- 27.12.2012 27.06.2013 , ,
14. , (2010) " 2030", ; "
15. , , (2010) " , ;
16. Shuklev Bobek: (2008) „Management“, Skopje;
17. www.economy.gov.mk
18. www.elem.com.mk
19. www.epp.eurostat.ec.europa.eu
20. www.erc.org.mk
21. www.nbrm.mk

