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ESTABLISHMENT OF A COMMON MARKET BETWEEN ALBANIA AND KOSOVO

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Abstract

Albania and Kosovo are two neighboring countries which cooperate in many areas of the economy but very little in the field of energy. Both countries have a lack of power supply to consumers. On October 25, 2005 Albania and Kosovo together with other regional countries (Greece, Montenegro, Serbia, Macedonia, Croatia) have signed the tract act for the establishment of the Energy Community, thus becoming equal partners in the development of the Energy Community, which is of primary importance for the economic development of both countries. Obviously, the realization of this project requires the creation of an appropriate legal and technical infrastructure. However, considering the current difficult situation of energy sector in Kosovo, can't be expected an immediately support on the competitive market full-opening. The main objective of this study is to highlight the advantages of the construction of this common market by comparing the total demand and total supply of both countries. The study intend to compare production capacities, on the one hand hydro production of Albania, while on the other side of the Kosovo thermal output as a form of diversification of production. The Assessment Reports of national and international institutions show the achievements in these areas, specifically in the legislation area for both countries, emphasizing the visible progress that has been made for the liberalization of the internal energy market. An important step towards the establishment of a large regional market is the establishment of the common market between Albania and Kosovo. From this study it shows that the best way to manage the production of both our countries is to create a common market between the two countries. This study should be followed by other studies related to the increase of production capacities of the two countries.

Keywords: Energy, Common market, Albania, Kosovo, Electricity

INTRODUCTION

Albania and Kosovo are two neighboring countries which cooperate in many areas of the economy but very little in the field of energy. Both countries have a lack of power supply to consumers. On October 25, 2005 Albania and Kosovo together with other regional countries (Greece, Montenegro, Serbia, Macedonia, Croatia) have signed an act for the establishment of the Energy Community and development of common market, thus becoming equal partners in the development of the Energy Community, which is of primary importance for the economic development of both countries. The European Commission, as part of its project to establish a single common market of energy, has undertaken an initiative to support countries of Eastern Europe Region to harmonize their national energy policies and develop a common regulatory framework with the primary aim of:

• Encouraging investment in the energy sector;
• Improving security of supply;
• Support economic growth.

Factors that favor market establishment

The establishment of the common market is favored by some important technical and geographical factors of both countries.

1. Geographical position

As neighbour countries, Kosovo and Albania have an easier transmission possibility of energy. It is designed and is expected to start soon the construction of an interconnection line of 400 Kv between Albania and Kosovo, which will serve not only to these countries but also enables further opening of the Albanian market. So, the geographical position of both countries creates physical market (interconnection lines) where energy is traded and transported. Obviously, the transmission and distribution network in both countries needs improvements and investments.

2. Possibility of altering the production sources of energy generation between the two countries

Albania has an installed capacity of energy generation of 1,654 MW of which 1,556 MW is hydro generation. There is only one power plant with a capacity of 98 MW. Vlora's power plant is designed to work with diesel and gas but currently, it works only with diesel. Gas plant is intended to be installed later because currently there is not a continuous gas supplier. However, the completion of the implementation of the TAP project is expected to make it functional and efficient.

Due to high cost of energy generation, this power plant is functional only in deep crisis periods of energy. Recent years, it is increased the capacity of the new hydro producers as a result of the subsidy policies pursued by the government, and the efforts for the liberalization of the domestic market.

Table1. Power Plants structure in Albania

Power Plant Features	PUBLIC POWER PLANTS									
	Fierza HPP	Koman HPP	V.Dejes HPP	Ulez HPP	Shkopet HPP	Bistr.1 HPP	Bistr.2 HPP	LanaBregas HPP	Vlora TPP	Private HPP-s
Number of Units	4	4	5	4	2	3	1	2	2	
Capacity of Units	125	150	50	6.3	12	7.7	5	2.5	70+28	
Installed Capacity (MW)	500	600	250	25	24	24	5	5	98	123
Total Installed Capacity (MW)	1 654									

Source: KESH sha

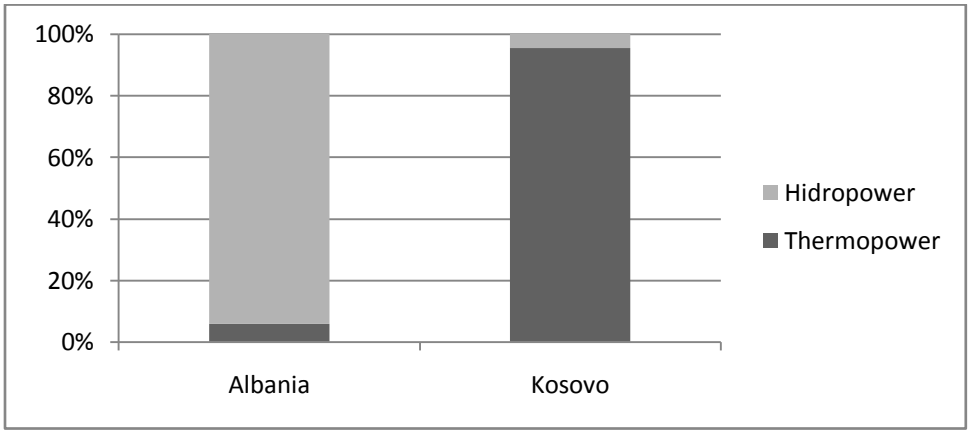
Unlike Albania, the energy generation in Kosovo is at 96% level from coal and only about 4% of clean energy from water and wind.

Table 2. Power Plants structure in Kosovo

Njësitë prodhuese	Kapaciteti i njësive (MW)		
	Instaluar	Neto	max
TC Kososva A	800	551	395
TC Kososva B	678	620	520
Total HC	46.56	42.58	42.58
Wind Power	1.35	1.35	1.35
Total	1,525.91	1,214.93	959

Source: ZREK

Figure 1. The power generating capacity in the ratio Hidro/Termo in Kosovo and Albania



As it can be seen in the graph, both countries have an undiversified generating sector of energy but both complete each-other. Albania and Kosovo both suffer from energy shortages, mainly by insufficient generating capacity as well as the load on the transmission network.

Table. 3 The Average Generation in Kosovo and Albania by months.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Average Generation in Albania	530	441	421	449	439	375	336	291	262	331	360	512
Average Generation in Kosovo	494	438	486	372	419	383	338	352	374	390	428	503
TOTAL	1,025	880	908	822	858	759	675	643	635	721,	788	1,015

Sources: Albanian Power Corporation, Kosovo Power Corporation.

What can be proposed to be built between the two states is the diversion of energy generation resources. Hereinafter are shown the three scenarios of resources diversion

The first scenario:

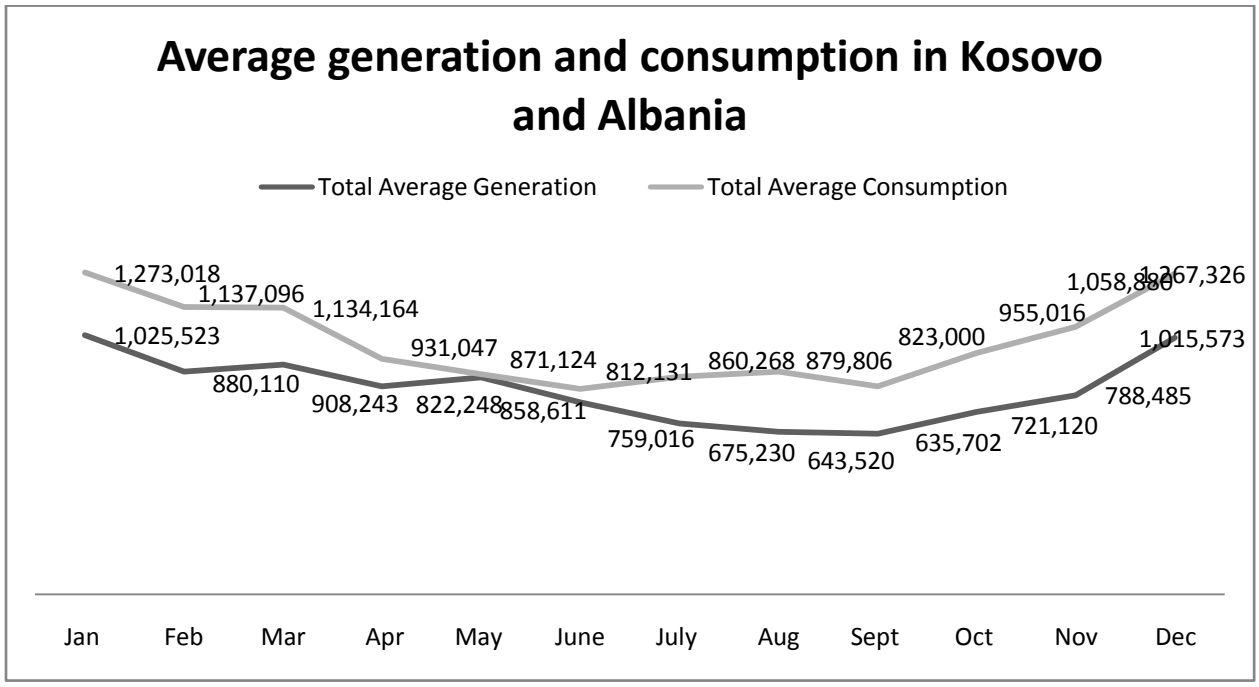
Referring the average production and consumption (Table 4) of both countries, in total results a production absence that goes from 13,000 to 270,000. Of course that production in both countries is influenced more by domestic consumption in different periods. Only in spring season (May), the situation is considerably improved due to normal temperatures (neither too high nor too low) which means lower consumption, and because of numerous precipitations in Albania. There will be not excluded from the energy demand nor qualified consumers who can buy energy independently in the market.

Table 4. Differences for each month of average generation and consumption for both countries (in 000 MW)

	Jan	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Total Average generation	1,025	880	908	822	858	759	675	643	635	721	788	1,015
Total Average consumption	1,273	1,137	1,134	931	871	812	860	879	823	955	1,058	1,267
Difference	248	257	226	109	13	53	185	236	188	234	270	252

Sources: Albanian Power Corporation, Kosovo Power Corporation.

Figure 2. The ratio between average generation and consumption in Kosovo and Albania



November - 1,058,880 -788,485 = 270,395 MWh per month

270,395 MWh per Month /30 days / 24 hours ≈ 375 MWh + 5% reserved capacity => additional capacity needed ≈ 400 MWh

One of the main advantages of power plants is the guarantee of the quantity that can be produced during this period unlike Hydro, Solar and wind generation. For this reason, the diversification of generation in Albania is also so necessary. In optimum conditions, power plants can generate a quantity which is equal to installed capacity multiplied by 8,760 hours a year. This means an optimum utilization of Albanian power plants at low cost level and demand fulfillment of both countries by operating with Kosovo power plants (A and B).

The second Scenario:

In order to have a guaranteed supply, the maximum consumption of both countries should be compared to the total minimum generation, being based on the net installed capacity of power plants in Kosovo that is equal to:

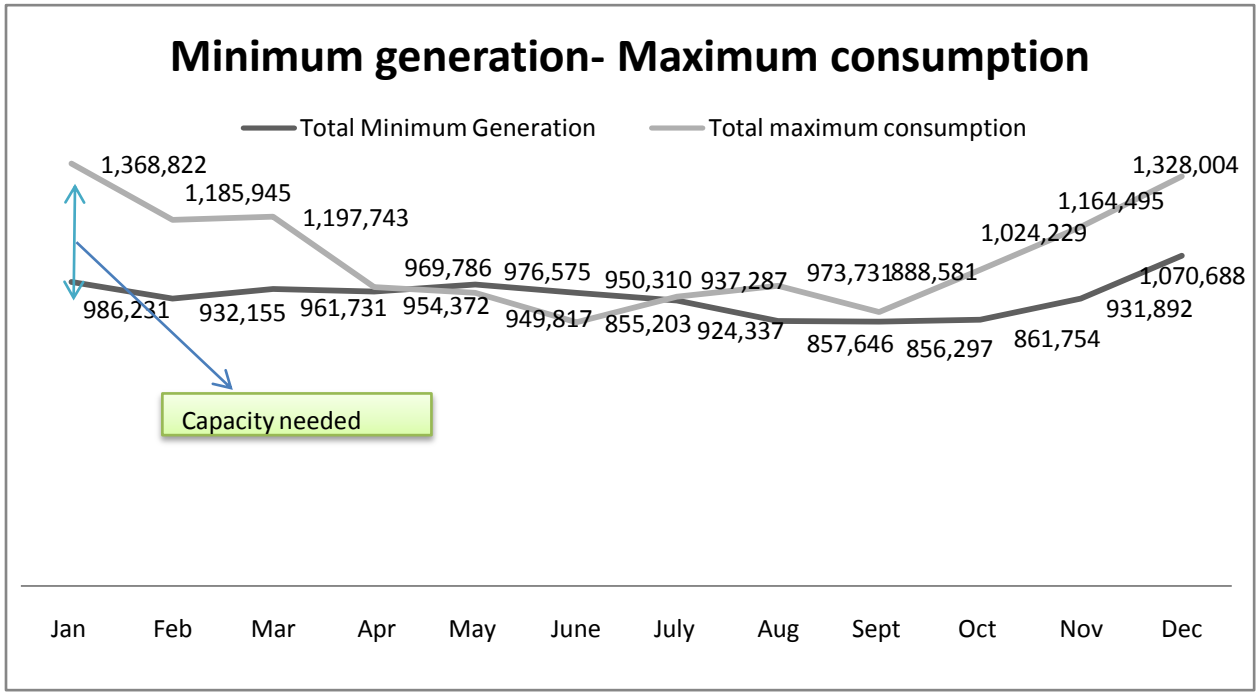
956 MW installed capacity X 24 X 30 – 5% reserved capacity ≈ 650 000 MW per month.

Table 5. The total minimum generation and maximum consumption of both countries (in 000 MW)

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Total Minimum Generation	936	882	912	904	927	900	874	808	806	812	882	1,021
Total maximum consumption	1,369	1,186	1,198	970	950	855	937	974	889	1,024	1,164	1,328
Difference	433	304	286	65	23	- 45	63	166	82	212	283	307

Sources: Albanian Power Corporation, Kosovo Power Corporation.

Figure 3. The ratio between minimum generation and maximum consumption for both countries



The capacity that is needed to have a guaranteed supply is equal to:

1 369 822 – 936 231 ≈ 432,591 MWh per Month

432,591 MWh per month /30 days / 24 hours ≈ 600 MWh + 5% additional capacity needed ≈ 630 MWh

The construction of a 700 MW Thermal plant would result in the optimal guaranteed power supply of both countries. Considering the utilization efficiency of power plants in Albanian for the minimum generation (2007), results as follows:

The maximum generation (considering the installed capacity 1531 * 24 * 365 = 13,411,560 MW) compared with the production of the year 2007 which is equal to 2.8 million, results in a utilization coefficient of 21%. This means that to fulfil the market demand with 700 MWh, should be installed approximately 3000 MWh.

THE IMPORTANCE OF ESTABLISHING A COMMON ENERGY MARKET BETWEEN ALBANIA AND KOSOVO

Development of energy sector in both countries

The existence of a common market would encourage the development of energy infrastructure including:

- Providing energy supply to both countries;
- Upgrading and establishment of the necessary transmission and interconnection network;
- Upgrading and establishment of the energy distribution network;
- Improvement and expansion of the existing generation capacity of energy;
- Diversification of energy generation sources;
- Creating favorable conditions and the necessary infrastructure for a regional market.

Cost of energy generation

Creation of this market aims the low price at which energy will be sold. In both countries, the majority part of the energy is generated by companies with 100% state capital, respectively APC Jsc and KPC Jsc. According resources from these companies, the generation cost of energy is at low level.

Table 6. Real Cost Analysis of energy in regional countries

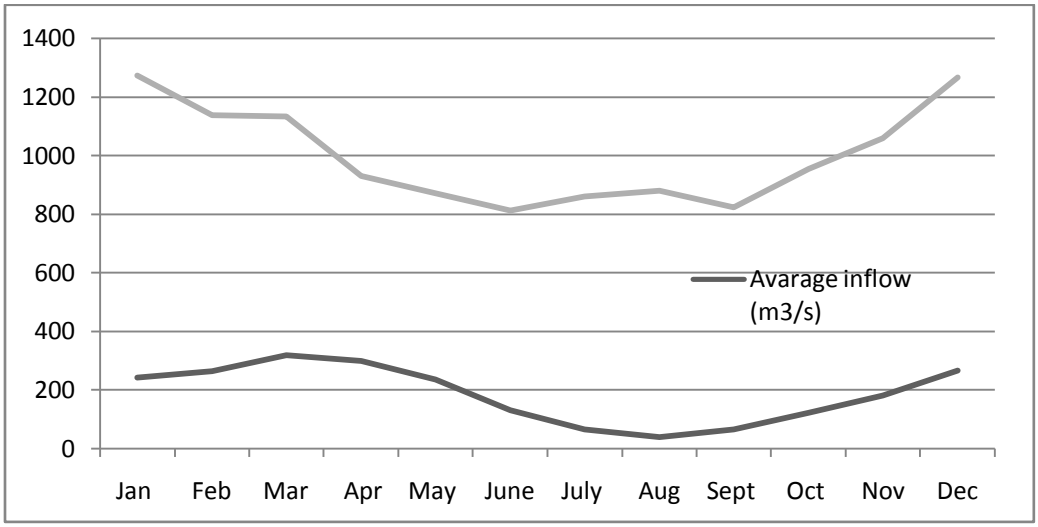
Analiza e kostos reale të energjisë elektrike				
Nr.	**Shteti**	**Çmimi i energjisë elektrike me pakicë (€c/kWh)***	**BPV për kokë banori**	**Diferenca në % e kostos reale të energjisë elektrike në krahasim me shtetet e rajonit[18]**
1	Kosova	5.76	€ 4,977.39	
2	Shqipëria	6.62	€ 6,789.32	30%
3	Kroacia	9.18	€ 14,908.48	56%
4	Bosnja dhe H.	6.39	€ 8,200.00	44%
5	Maqedonia	5.37	€ 8,620.56	55%
6	Mali i Zi	7.37	€ 10,285.51	48%
7	Sllovenia	10.79	€ 20,640.16	62%
8	Serbia	5.23	€ 9,099.50	59%
9	EU27	14.16	€ 25,200.00	58%
			Mesatarja:	**51%**

Source: Eurostat, ZRE, Energy Agency of RS

The current practice shows that APC – KPC operate based on an agreement; energy exchange based on coefficients by periods. Application of favourable prices in region will lead to an attractive and competitive market.

The management problem of power plants in Albania is the production out of profitable production without adapted it to the flows levels, which would lead to a more efficient use of water in power plants catchment.

Figure 4.The trend of consumption changing in the country and flows in Drin cascade



DOES ALBANIA AND KOSOVO CURRENTLY HAVE SUFFICIENT CAPACITIES TO FULFILL WITH ENERGY THEIR COMMON MARKET?

Peak demand for energy

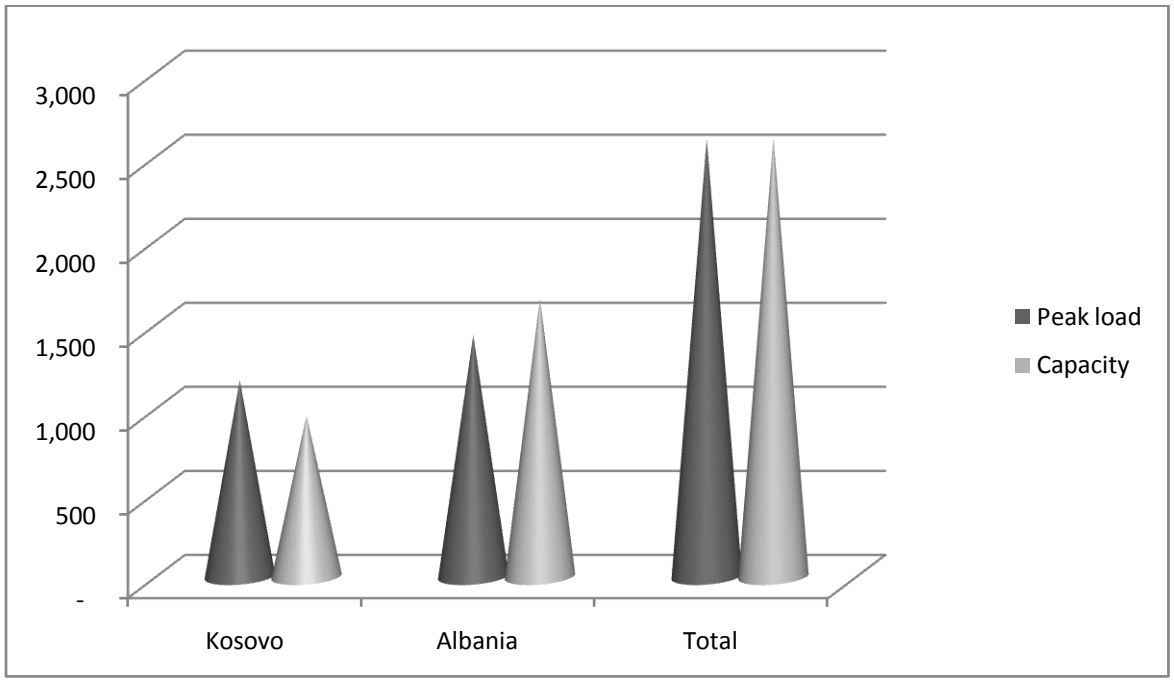
One of the main problems of energy supply is the peak demand. The generation and transmission capacities should fulfill this demand, even if the daily generation may be higher than the total daily demand. Based on data analysis of these three years results as follows:

Table 7. Peak load in Kosovo and Albania

	Year	Load in MW	Date
Kosovo	2010	1158	25.01.2010
	2011	1126	31.12.2011
	2012	1168	31.01.2012
Albania	2010	1402	31.12.2010
	2011	1450	31.12.2011
	2012	1436	31.12.2012

Sources: Albanian Power Corporation, Kosovo Power Corporation.

Figure 7. Peak load and capacity in both countries



As it can be seen from the graph, it results a guaranteed supply in peak demand even in the maximum value of 31th December. In a common market of Kosovo and Albania, the peak load is fulfilled by the installed capacity of both countries.

BENEFITS FROM IMPORT-EXPORT AVOIDING

Import/Export of energy in Kosovo

Kosovo imports and exports energy throughout the year, as can be seen in the Figure 8.

Figure 8. Imports and exports of Kosovo for 2012, by months

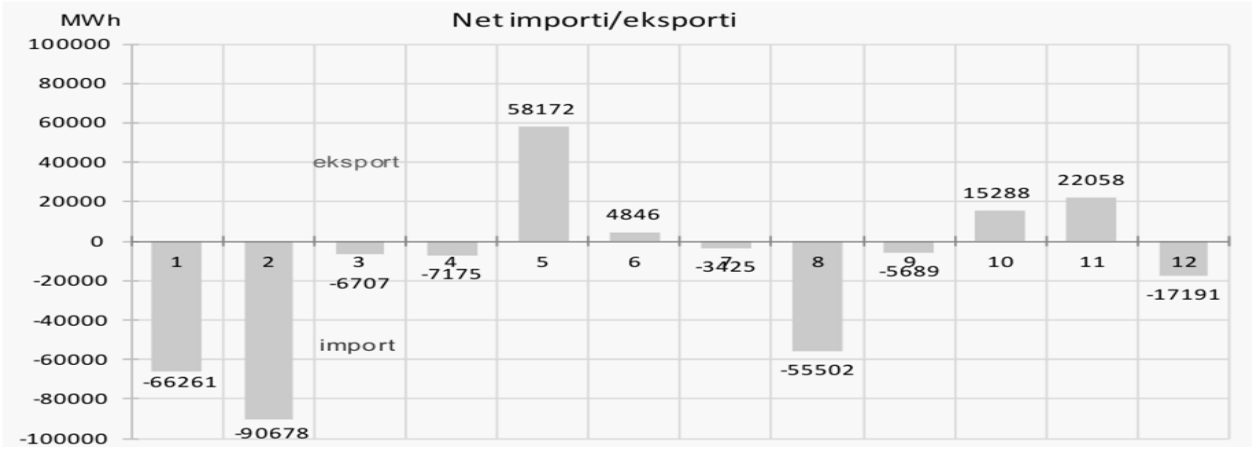


Table 9. Import-Export and prices of Kosovo for 2012

2012	Import			Eksport			Shkëmbim			Total		
	Sasia MWh	Çmimi €/MWh	Vlera €	Sasia MWh	Çmimi €/MWh	Vlera €	Marrje MWh	Dhënie MWh	Ndrysh. MWh	Marrje MWh	Dhënie MWh	Ndryshimi MWh
1	78,151	80.32	6,277,072	0		0	0	11,890	11,890	78,151	11,890	-66,261
2	90,958	89.80	8,168,199	0		0	0	280	280	90,958	280	-90,678
3	48,228	75.83	3,657,137	35,880	31.08	1,115,036	0	5,641	5,641	48,228	41,521	-6,707
4	30,486	68.05	2,074,668	38,500	27.46	1,057,214	18,940	3,751	-15,189	49,426	42,251	-7,175
5	9,515	64.32	612,025	86,658	31.37	2,718,306	18,971	0	-18,971	28,486	86,658	58,172
6	30,900	68.36	2,112,378	30,540	31.88	973,596	2,400	7,606	5,206	33,300	38,146	4,846
7	36,220	76.22	2,760,853	20,240	28.94	585,794	0	12,555	12,555	36,220	32,795	-3,425
8	71,186	78.17	5,564,395	6,490	37.77	245,125	0	9,194	9,194	71,186	15,684	-55,502
9	47,321	79.59	3,766,159	17,750	33.67	597,691	0	23,882	23,882	47,321	41,632	-5,689
10	33,875	82.86	2,806,883	48,273	32.20	1,554,306	11,930	12,820	890	45,805	61,093	15,288
11	46,360	82.01	3,802,190	61,495	32.05	1,971,014	920	7,843	6,923	47,280	69,338	22,058
12	48,697	78.83	3,838,710	25,490	29.48	751,369	0	6,016	6,016	48,697	31,506	-17,191
Total	571,897	79.46	45,440,668	371,316	31.16	11,569,451	53,161	101,478	48,317	625,058	472,794	-152,264

Source: ZREK

Analyzing the situation of the year 2012 regarding Kosovo Import-Exports, result a very big difference between the import and export price which goes up to 320% during the year (89.8/27.46) € / MW. Such a price difference is a cost and results also during the year. Thus, in total results an import price of about 255% higher than the export one.

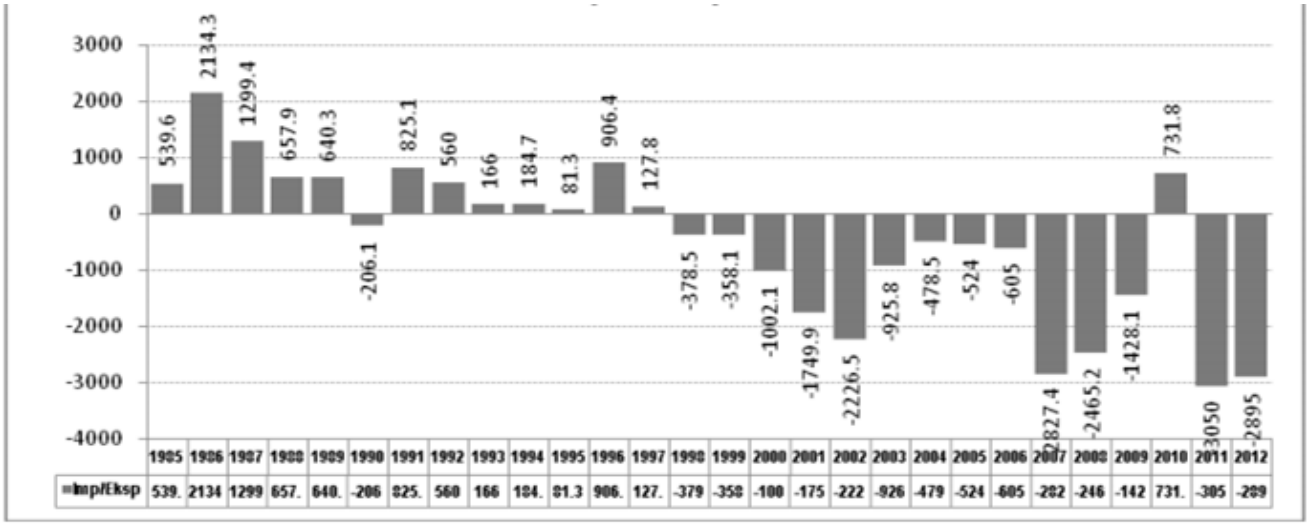
Import/Export of energy in Albania.

Albania imports almost 50% of domestic consumption of energy. Our country imports even in years when the total annual generation is higher than the total consumption of that year, because of the fact that the production does not correspond in time to the period when consumption is higher. This is the reason why Albania exports during periods of rain precipitations when energy prices are very low and imports during dry periods when market prices are relatively high.

Table 10. Import-Export prices in Albania during 2010-2012 (in Euro/MWh)

Year	Average price of Import	Average price of Export
2010	45.5	40.33
2011	60.49	39.98
2012	63.6	47.28

Figure 9. Import-Export of Albania during years (in GWh)



Source: Albanian Power Corporation

ESTABLISHMENT OF THE 400 KW INTERCONNECTION LINE IN ALBANIA AND KOSOVO

Establishment of interconnection lines is a necessary condition for the operation of the common market. Currently, Kosovo and Albania operate through a 220 kV interconnection line. The transfer capacity of interconnection line with Albania is currently about 200 MW which is insufficient to complete the needs of energy exchange between the two countries.

The establishment of this line influence in following directions: It can make possible a generation diversification on the basis of agreements between both countries and secondly affects market expansion and increase import-export capacity of energy. The establishment of this line will cost about 33.5 million Eur and is projected to be completed at the end of 2015.

CONCLUSION

Establishment of a common market between Kosovo and Albania would mostly affect the stabilization and security of energy supply of both countries, balancing generation of energy in quantity and low cost through power plants. However, investments in the energy field are really necessary. Amortization of power plants in Kosovo results in higher costs of generation and an air pollution over 50% above allowed rates(according to the World Bank report of 2010). Establishment of a new power plant in Kosovo as it was expected (Kosovo C) and support of the establishment of hydropower plants in Albania would best complete this common market. Another essential factor for this market operation is the completion of the interconnection line

between Kosovo and Albania. According to data obtained from the Ministry of Energy of Kosovo and annual consumption report of 2012, Kosovo has reservations for more than 1000 years.

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