ENERGY FROM CAUCASUS TO BALKANS

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Abstract

Energy is the most important element for people to continue their lives, to run their businesses, to operate their vehicles, and to grow their countries. Balkan countries gained their independence not so long ago. The infrastructure in these countries including energy transportation and power plants are not new and they need to be renewed with cutting edge new technologies. Balkan countries such as Albania, Bulgaria, Bosnia & Herzegovina, Croatia, Greece, Macedonia, Romania, Montenegro, and Serbia are not energy-reach countries in terms of energy resources and power generation technologies. On the other hand, Balkan countries are on the passage of energy corridor from energy rich Caspian and middle- east countries to west European countries. This advantage brings opportunities to built low- cost and reliable energy plants. As a result, the medium will be more attractive for new investments to come as long as the countries properly utilize Energy Transmission Lines (ETP).

Keywords: *Balkan Countries, energy, Energy Transmission Lines*

Introduction

Energy is the most needed substance for humans to meet their requirements and lead a high standard life style. Being one of the important dynamics of countries` socio- economic development, "energy" plays an important role for the countries with scarce natural resources; these countries import majority of their needed energy from abroad. The fair transmission as well as the internal consumption of energy throughout the global market is vital. European Union (EU) considers bilateral cooperation with Balkan countries because of their geographic positions as a gateway to the main energy basis in south- east countries. Having secured relations with these countries means that sustainable energy flow to EU countries will be established.

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Balkan countries won their independence not so long ago. The infrastructure in these countries including energy transportation and power plants is not new and needs to be renewed with cutting edge new technologies. The region had wars, troubles, and economic crises in the past. The countries have shown economic growth after their independence especially after the support of EU. The countries have historical and cultural relations with Turkey; similarly the economic relations have been steadily increasing between each other [1].

All in all, it can be suggested that statistical data of the 2000s be taken into account in evaluating the energy consumption of the Balkan countries [2]. According to the obtained statistical data, recent energy consumption of the Balkan countries has been increased to 10 quadrillion of British Temperature Unit (BTU) on average. Also, the energy consumption of 2000-2004 is 8 quadrillion BTU; it rises to 10 quadrillion BTU after 2006; it is reported that energy consumption of the Balkans has increased slightly below the global average.

Table 1. Total Energy Consumptions by Balkan Countries (Quadrillion BTU)

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Albania	0,09619	0,0916	0,09516	0,11449	0,11651	0,12092	0,11852	0,10319	0,10963	0,12463
BIH	0,22358	0,22112	0,2316	0,22736	0,25338	0,27217	0,2838	0,27583	0,29711	0,3038
Bulgaria	0,86772	0,90417	0,87459	0,88654	0,87473	0,91486	0,93661	0,83888	0,81478	0,74593
Croatia	0,3756	0,38411	0,37378	0,39311	0,40816	0,40418	0,41522	0,39596	0,40671	0,39914
Greece	1,33768	1,35491	1,35923	1,43684	1,42652	1,43461	1,47776	1,49882	1,46976	1,41346
Macedonia	0,11505	0,10637	0,1066	0,11728	0,11939	0,12209	0,12084	0,11964	0,11976	0,11794
Montenegro	--	--	--	--	--	--	0,03479	0,0358	0,03625	0,04148
Romania	1,58611	1,71549	1,68369	1,63078	1,68934	1,71126	1,72153	1,70549	1,68185	1,45431
Serbia	--	--	--	--	--	--	0,74051	0,7278	0,70493	0,7072
Slovenia	0,29279	0,29891	0,30199	0,30092	0,31411	0,31782	0,31755	0,31422	0,33719	0,32721
Turkey	3,16262	2,89367	3,1458	3,31722	3,51186	3,73418	4,07064	4,39211	4,28965	4,0383

TOTAL AMOUNT	**8,05734**	**7,97035**	**8,17244**	**8,42454**	**8,714**	**9,03209**	**10,23777**	**10,40774**	**10,26762**	**9,6734**

Source: http://eia.gov (international energy statistics, Online on 12 September 2012)

Production/Consumption Balance In The Balkan Countries

As shown in Figure 1, When energy balance of the Balkan Countries were analyzed, it is understood that they can only produce 45.2% of the energy that they consume, which means that they are totally depend on foreign resources to compensate for the 54.8% energy shortfall. It is necessary to stress out this significant overall evaluation, however it is not enough, as energy dependency of the Balkan countries were analyzed, it is observed that it varies between 70% and 30%. In terms of energy supplies, Greece is dependent on foreign resources to make up for its energy shortfall of 71.4%; Turkey 69.5%, Croatia 55.4%, Slovenia 52.3%, Albania 48.5%, Serbia 33.8%, Romania 21.7% and Bosnia-Herzegovina 18.7%. The dependency of Turkey and Greece on foreign resources by approximately 70% is a significant issue since energy consumption of these two countries is almost equal to the amount the rest of the countries consume.

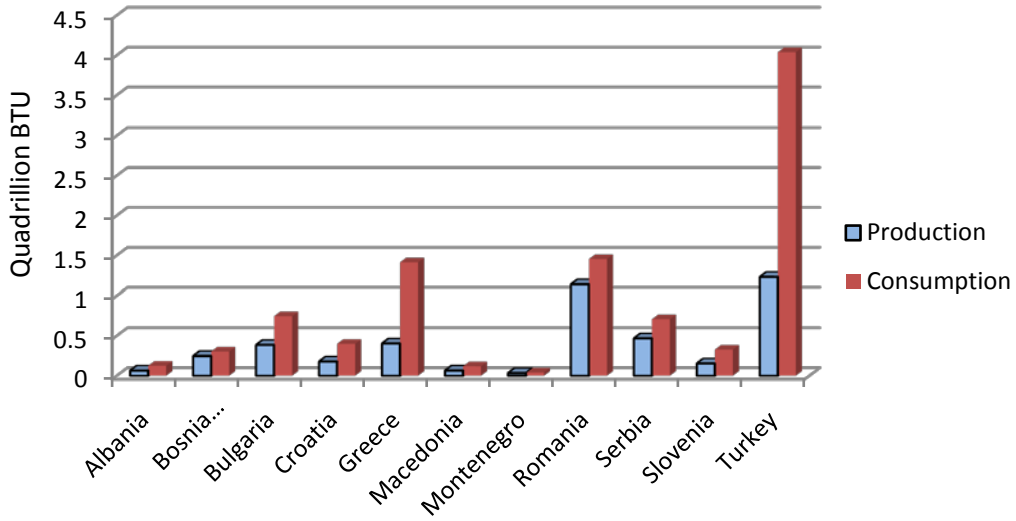

Figure:1- Production/Consumption Balance by Balkan Countries (2009)

When total energy consumption of the countries is reckoned, it is seen that Turkey stands in the first place; thanks to the fact that its population is higher than the others. However, energy consumption per capita should be taken into consideration to better evaluate the energy consumption figures of a country. When considered from this perspective, Slovenia stands atop with its 3417 kgoe per capita; Greece is the second with 2609 kgoe, and Bulgaria is the third country with an energy consumption of 2305 kgoe per capita. Energy consumption of Serbia and Croatia is higher than the average of the Balkan countries. Albania is at the bottom of the list with 538 kgoe per capita. Turkey remains above Albania, Montenegro and Macedonia with an energy consumption of 1359 kgoe per capita, which is below the average. Even Romania, as the holder of highest oil reserves in the Balkans, stays below the average.

When energy sources are considered one by one, it can be concluded that majority of Balkan countries are self-sufficient in terms of coal production/consumption balance. The coal production rate in the Balkan countries is 87.9% of the total consumption; it is 52.4% in Albania and 72.5% in Turkey, which comprise the lowest values in comparison with the average. The capability of Bulgaria, Macedonia, Romania, Serbia and Slovenia to meet the consumption need with domestic production stays around the average. The countries whose coal production meets the consumption or whose productions more than their consumption are Bosnia-Herzegovina, Greece and Monte Negro. Croatia is the only country in the region dependent on its own sourcing to meet its need for coal.

According to Figure 2, considering the oil production/consumption balance, the average is seen to be very low (13.4%), and the percentages are either zero or almost zero in most countries except Romania. Even in Romania, the largest amount of oil is pumped out among the Balkan Countries, oil production meets only 48.1% of the total consumption. Albania is the second producer with a capacity to meet 40.6% of the consumption with its own means. The ratios are 22.9% for Croatia, 17.8% for Serbia, and 0% to 3% for the others. The overall evaluation reveals that the Balkan countries are highly dependent on foreign oil resources which account for 86.6%.

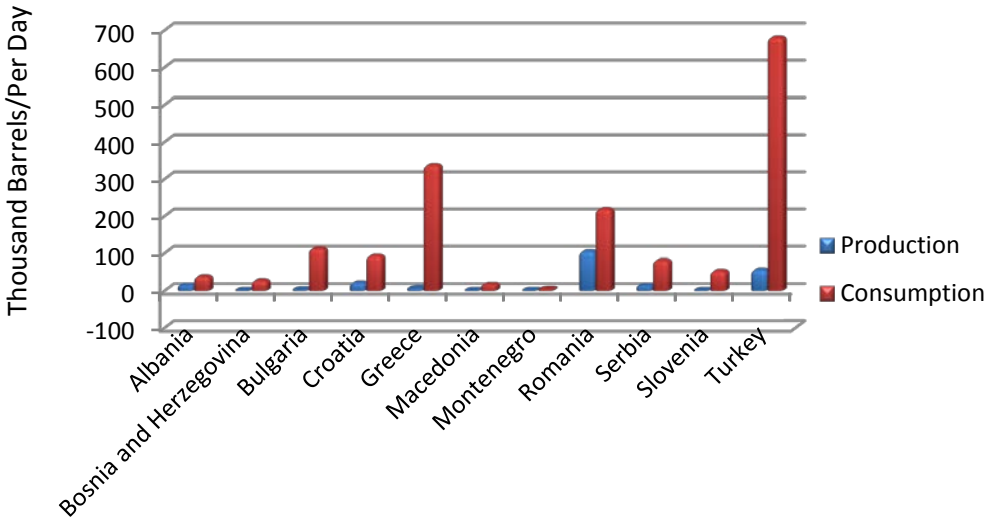

Figure:2- Oil Production and Consumption by Balkan Countries (2009)

Figures on Balkan countries' capability to produce natural gas are quite similar to those concerning oil production. Average production is 21.5%. While Romania meets 82.3% of the consumption with its domestic production, this ratio is 66.7% in Croatia and Albania. Serbia has the highest ratio among the remaining countries with 19%. Although the other countries produce some amount of natural gas, the available rates are mostly stays below 2%. Bosnia-Herzegovina, Macedonia and Montenegro have no natural gas production.

When an overall evaluation is conducted in the energy resources scale, Balkan countries' dependency on foreign resources is 12.1% for coal, 86.6% for oil and 78.5% for natural gas, which shows that they are heavily dependent on foreign countries in terms of energy generation. It can be suggested that probable problems likely to range from international affairs to economic issues. Continuous, reliable and economic procurement of the needed energy have negative effects on the development process of the Balkan countries.

Pipeline Projects

The primary target in the energy policy is to provide the security of energy supplies, safety of transportation and to ensure price stability. In addition, it is aimed to decrease the cost of the required energy, and to deliver demanded quantity and quality to the markets[3,4,5,6].

As being in the middle of the Caucasus, the Middle East and the Balkans, Turkey acts such a natural bridge between Europe and other importers. Because of having

historical, cultural and economic ties to the regional countries, its geographical location, internal sources and growing population, Turkey is a significant energy importer and has a strategic importance in the region.

Providing the safety of energy supply in the region, EU has taken important steps to create assistance programs based on economy domain stability and energy security in the Caspian region: TACIS (Technical Aid to the Commonwealth of Independent States), TRACECA (Transport Corridor Europe- Caucasus- Asia) and INOGATE (Interstate Oil and Gas Transport to Europe).

The EU is the most intensive energy- consuming part of the world, in turn, due to insufficiency of its own sources, the EU wants to meet energy needs by using the advantage of geographical proximity to Euroasian countries that have a significant portion of energy sources in the world.

The EU wants to create secure transport corridors where the pipelines pass through. Although, the EU supported the projects TRACECA, TACİS, INOGATE and the other projects which are also supported by the United States, when compared to other global forces, the EU is far to create a strong policy on the region these days.

The only way to get the Caspian and Central Asian energy resources for Europe is through Turkey and the Balkan countries which proves the strategic importance of these countries, and also, in terms of opening up to the Western markets, it has a great importance for the Caspian region countries. Turkey is a strategic transit country and the Balkan countries are becoming energy markets. Therefore, it is very important for Turkey and the Balkans to develop wide range of energy transportation projects in terms of providing diverse import of oil and natural gas resources, ensuring safety and continuity. Hence, to reduce the dependence on Russia partially, supplying natural gas from the Middle East and Central Asia through Turkey (as a more secure country) and allowing the Balkans to serve the EU's policy of energy supply are crucial. Therefore, this energy corridor has a extremely important place for the diversity principle of the EU. Especially, East European and Balkan countries are much more dependent on Russia than the other EU member countries. From this perspective, the EU intends to implement an important and strategic decision in the policy of energy safety with Nabucco gas pipeline.

Nabucco

- With the Nabucco project signed on 13th of July, 2009, 3,300 km pipeline planned from Turkey’s eastern border through Bulgaria, Romania, Hungary, and into Austria. It brings 31 billion cubic meters (bcm) gas to Europe each year.

- This project is to ensure Europe's safety of energy supply through multiple pipelines and an important pillar of creating a single Eurasia energy market strategy.
- Due to entrepreneurial role of Turkey, the East- West Energy Corridor described as the 21st Century Silk Road has provided the delivery of the rich carbon-hydrogen resources of the Caspian Basin to the Western markets directly.
- Pipeline projects linking the Caucasus and Central Asia to Europe are main factors in terms of integration with the West.
- It is foreseen that secure and commercially profitable pipelines will provide a significant contribution to bring stability and prosperity in the region.

Figure 3. Overview of nabucco pipeline

Baku Tbilisi Ceyhan

Baku-Tbilisi-Ceyhan (BTC) is one of the most important crude oil pipelines and began to carry oil since June 4, 2006.

- It transports crude oil from offshore oil fields in the Caspian Sea to the Turkish coast of the Mediterranean from where the crude is further shipped via tankers to European markets.
- It runs through Azerbaijan and Georgia to Turkey territory (At a length of 1,768km.)
- The pipeline has the capacity to transport one million barrels of crude oil.
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Figure 4. Overview of Baku-Tbilisi-Ceyhan (BTC)

Trans Adriatic Pipeline (TAP) Project:

Trans Adriatic Pipeline project is proposed pipeline which will transport natural gas from Greece to Albania and further to Italy and Western Europe. It will be supplied from Caspian region, Shah Deniz field and will be transported till here through existing pipelines[7].

TAP is a 520 km pipeline from which 380 km will be covered in Albanian territory. It will be realized through a collaboration between 3 international energy consortiums EGL , Statoil and E.ON Ruhrgas.

TAP will be financed from safe shareholders and will not require subventions from the countries it will be passing.

- TAP will be able to transport 10 mmk gas more in a year, increasing its capacity to 20 mmk.
- It will require a cost of 1.5 milliard Euro.
- The governments of Italy, Greece and Albania confirmed their political support for the TAP project by signing a Memorandum of Understanding (MoU) on Thursday evening, 2012-09-27.

Figure 5. Overview of Trans Adriatic Pipeline project

Conclusion

The provided statistical data analysis revealed that Balkan countries should make better and more use of domestic energy resources to avoid adverse effects of actual and probable fluctuations in the international energy market since they are highly dependent on foreign resources. Balkan countries possess available resources to avoid or minimize the negative effects of the fluctuations in the international energy market. Balkan countries, may operate as a bridging country to Caspian Region, which have a considerable number of energy resources. Therefore they will produce energy in large amounts in return Europe, has inadequate energy resources, will always be in need of huge amount of energy.

References

[1] Cimen, S., "Energy and Energy Security: Turkey's Role", The 28th Annual Conference on US-Turkish relations, June 1, 2009, Washington, DC.
[2] İsmet Akova, "Energy Problem in the Balkans and Bulgaria" Second International Balkan Annual Conference (IBAC 2012)
[3] Pasha H. Natig, The Role and Strategic Importance of Balkan Countries in Caspian Basın`s Energy Diplomacy, Second International Balkan Annual Conference (IBAC 2012)
[4] Ahmet Yücekaya, "Evaluating the Energy Dependency of Balkan Countries and the Effect of the Natural Gas Pipelines", First International Balkan Annual Conference (IBAC 2011), Vol:1, pp- 254-264
[5] Ahmet NAYİR, "Energy from Caucasus to Balkans", First International Balkan Annual Conference (IBAC 2011), Vol:4, pp- 303-316

[6] Cenk PALA, Elvira BOROMBAEVA, Strateji geliştirme Dairesi Başkanlığı, BOTAŞ
[7] Ali İhsan Özdemir, Biagio Simonetti, Albana Muzhaqi, Besjana Laci, "Trans-Adriatic Pipeline Project and Its Potential Effects on Albania", Second International Balkan Annual Conference (IBAC 2012)