

IBAC 2012 vol.1

TRANS-ADRIATIC PIPELINE PROJECT AND ITS POTENTIAL EFFECTS ON ALBANIA

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Abstract

The aim of this paper is to explain the exploration and the production of natural gas in Albania, which has an important impact on the country's economy. The development of the natural gas sector in Albania is one of the priorities set out in the National Strategy of Energy. The research on this paper is based on regulatory authority of the energy sector and on our actual data and survey made on Albanian citizens according to socio-economic judgments about the Trans-Adriatic pipeline project (TAP).

In the first part of this paper, it will be explained that the development of natural gas production process in Albania. The natural gas production in Albania started in 1968 at Divjaka gas field with an annual domestic production of 70 million Nm³. Up to 1990 this resource was used to furnish different industries as the fertilizer industry, the oil industry, electricity industry and residential sector. Actually it serves only for the oil industry.

As Albania is the only country in Europe which is not connected to the international gas network, in the second part of this paper, It will be explained how Albania is creating a network to international gas supply. Emphasis will be on the TAP project and the Albanian citizens' perceptions on socio-economic reasoning about this project. TAP is an important project because it will link Albania with other Balkan, European and Asian countries and our analyses will be on Albanian people's perceptions about this project. Collected data analyzed by SPSS package programme.

Key words: *Trans-Adriatic Pipeline Project, Albanian Economy, Development of Natural Gas, Transportation of Natural Gas.*

Introduction

At the beginning of '90s, Albania initiated its difficult path of transforming its economy, from a centralized one toward a free market economy. Along this period Albania started to restructure its macroeconomic environment. As the (Ministry of Economy, Trade and Energy, 2011) stated that the need for reforms was very high in all the economic sectors. During the last decade the Albanian economy has seen a

solid progress. The processes of economic transformation and restructuring, and macroeconomic policies pursued in the last 10 years resulted in one of the highest growth rates in the region.

Albania, a formerly closed, centrally-planned state, is making the difficult transition to a more modern open-market economy. According to (CIA World Factbook 2012) macroeconomic growth averaged around 6% between 2004-08, but declined to about 3% in 2009-11. Inflation is low and stable. The government has taken measures to curb violent crime, and recently adopted a fiscal reform package aimed at reducing the large gray economy and attracting foreign investment. Remittances, a significant catalyst for economic growth declined from 12-15% of GDP before the 2008 financial crisis to 8% of GDP in 2010, mostly from Albanians residing in Greece and Italy. The agricultural sector, which accounts for almost half of employment but only about one-fifth of GDP, is limited primarily to small family operations and subsistence farming because of lack of modern equipment, unclear property rights, and the prevalence of small, inefficient plots of land. Energy shortages because of a reliance on hydropower - 98% of the electrical power produced in Albania - and antiquated and inadequate infrastructure contribute to Albania's poor business environment and lack of success in attracting new foreign investment needed to expand the country's export base. FDI is among the lowest in the region, but the government has embarked on an ambitious program to improve the business climate through fiscal and legislative reforms. The completion of a new thermal power plant near Vlore has helped diversify generation capacity, and plans to upgrade transmission lines between Albania and Montenegro and Kosovo would help relieve the energy shortages. Also, with help from EU funds, the government is taking steps to improve the poor national road and rail network, a long-standing barrier to sustained economic growth. The country will continue to face challenges from increasing public debt, approaching its statutory limit of 60% of GDP. Strong trade, remittance, and banking sector ties with Greece and Italy make Albania vulnerable to spillover effects of the global financial crisis.

Albanian energetic system is based on the production of energy by hydro plants with a capacity of production 1,450MW and an annual average of 4,200GWh (CEZ Shperndarje sh.a, 2012). They are furnished by the largest rivers of Albania. The one and only user of this hydro plants is Albanian Energetic Corporation (KESH), a public sector which sells the energy to CEZ. CEZ is the only distributor of electrical energy in Albania.

Hydro plants are the primary energy supplier in Albania. Actually Albania is probably the only country in the region which does not use other sources for energy production and consumption. Crude oil and electric power are the primary sources of energy production. Hydro covers 97.1% energy production by source and fossil fuel covers 2.9% electricity production by source. While in total consumption crude oil, electric power, fire wood and lignite are the only sources (CIA World Factbook, 2012).

As the oil reserves and in many parts of the world are being depleted and hydro energy is always in danger due to dry, the availability of a viable alternative such as

natural gas is becoming increasingly important. Increased exploitation of natural gas, offers a means of reducing the country's dependence on oil and water and providing plenty of energy for use in people's houses and in industry. It will help the Albanian economy to cope with the depletion of the world's oil reserves. It will also help Albania save its hydro reserves as changes in climate due to global warming are coming. Based on limited publicly available information it seems that a very minor part of natural gas requirements is met through domestic natural gas production.

The development of the natural gas sector in Albania is one of the priorities set out in the National Strategy of Energy. For this reason, Global Legal Group Study (2009) explains the way Albania could be connected to the international gas network. The supply of Albania with gas is foreseen to be achieved through international gas networks, for which there are three existing options: (i) serve as a terminal of the regional pipeline with Russian natural gas from Macedonia or Greece; (ii) serve as a transit point for the gas pipeline designated for the supply of Western Europe, through Italy, with natural gas coming from Caspian region via the "Transadriatic" or otherwise known as the "TAP"; or (iii) serve as a terminal for liquefied natural gas in the Adriatic coast. The TAP has been considered to be the optimal solution for Albania and is valued as the most efficient gas pipeline from the 4 project corridors of supply to Southeast Europe. It includes the option of developing the storage of natural gas in Albania, which shall increase the security of supply of gas. The TAP project represents a rational solution with an important impact for the economic development of our country. It represents a major project in energy infrastructure of Albania by contributing to the gasification of our country, and considered to be a huge contribution towards security of energy supply for the country.

TAP is seen as a big investment for Albania. It will not only supply Albania with natural gas, but it gives to Albania the opportunity to be a strategic country to supply later the European regions and be the missing link of this pipeline network. This way Albania will solve the energy shortage problem and her dependence on hydro sources and entering a new path of economic development.

Transportation of Gas via Pipelines

Pipelines are an ancient technology that has served many different civilizations in different regions. They were and still are part of the development and progress of society. Many of the ancient applications of pipeline transportation are still being applied in a contemporary way. When asked about transportation in general, people usually think about road transport, railroad transport, aviation or shipping. Pipeline transport will be the last mode of transport on their mind.

First of all we will explain shortly the history of pipelines, then we will show the coverage and importance of the most known pipelines.

According to Thomas (2010), The first pipelines date back to 3000 BC in Mesopotamia, Egypt and China. They were primarily used to supply water but were all made out of different materials. In Mesopotamia pipelines were made out of clay, in Egypt out of copper and in China out of bamboo. The Romans were the first to build a gigantic pipeline network that could transport water all around their city. In the Middle Ages the technologies and developments discovered by the Romans were disregarded. There were no comparable water networks like in ancient Rome (Thomas, 2010, p.2).

Later on, in the 15th century iron pipelines were introduced. Thanks to these iron pipelines and newly developed pumping system a decent European water network arose in the 16th and 17th century. Late in the 19th century, the first pipelines were built to transport crude oil efficiently. After World War 2 the oil pipeline systems received another development boost because the alternative modes of oil transport appeared to be too vulnerable to enemy attacks. Pipelines underwent some sophisticated technological changes and can nowadays transport more than just water or oil (Thomas, 2010, p.2).

Some Pipeline Projects in the World:

Trans Alaska Pipeline System

The most well-known pipeline is the Trans Alaska Pipeline System (TAPS) (Thomas, 2010). The recent research on this pipeline (Joint Pipeline Office, 2011) has shown that 800-mile-long Trans Alaska Pipeline System contributes approximately 13% of the nation's domestic oil production, reducing dependence on foreign reserves. Beginning in Prudhoe Bay on Alaska's North Slope, TAPS stretches through rugged and beautiful terrain to Valdez, the northernmost ice-free port in North America. The Trans-Alaska Pipeline System includes the trans-Alaska crude-oil pipeline, 11 pump stations, several hundred miles of feeder pipelines, and the Valdez Marine Terminal. The pipeline was built between 1974 and 1977 after the 1973 oil crisis caused a sharp rise in oil prices in the United States. The Alaskan Pipeline only transports oil, and consequently it safeguards against the removal of metals, agricultural products, and other natural resources that could be developed. The task of building the pipeline had to address a wide range of difficulties, stemming mainly from the extreme cold and the difficult, isolated terrain. More than half of the pipeline runs above ground – an engineering decision due to Alaska's prevalent permafrost terrain. TAPS' visibility as it crosses Alaska's remarkable terrain has made it one of the world's most photographed pipelines.

North European Gas Pipeline

The North European Gas Pipeline (NEGP) is one of the largest subsea gas pipeline projects in the world and is designed to provide EU member states with 55 billion cubic meters natural gas from Russia annually, which will be about 8% of the predicted total gas consumption in the EU in 2015 (Sven and Jürgen, 2007). The recent research (Götz ,2005) has shown that the project comprises 900 km of pipelines on Russian territory to connect to the existing long-distance pipeline system and approximately 1200 km sea-bed pipeline running from Wyborg to Greifswalt. The gas will feed into the German grid, from where it can be transported to the UK. Several off-branches are planned, to Finland, Kaliningrad and Sweden. Costs are estimated at \$2-\$6 billion, depending on the specific construction plans.

Nabucco

The research (Katinka, 2010) explains that Nabucco—a 3,300 km pipeline planned from Turkey’s eastern border through Bulgaria, Romania, Hungary, and into Austria—is the flagship project of the EU’s fledgling energy security policy. Stull (2010) has shown that it could eventually bring 31 billion cubic meters (bcm) of Caspian and perhaps Middle Eastern gas to Europe each year. It is at the heart of the European Union’s “southern corridor” strategy, which aims to connect the European energy market to these gas-rich regions. Nabucco would lessen the EU’s dependence on Russian gas, contribute to stronger ties between the European Union and the countries in its eastern neighborhood and prove that the European Union and Turkey can work together at a time when the accession process seems to be running out of steam. Nabucco is the only pipeline project that could give Israel access to the European market – the largest interconnected gas market in the world.

Baku Tbilisi Ceyhan

This research (BP Caspian,n.d.) has shown that at a length of 1,768km, the Baku Tbilisi Ceyhan (BTC) Pipeline is one of the great engineering endeavors of the new millennium. The BTC oil export pipeline transports crude oil from offshore oil fields in the Caspian Sea to the Turkish coast of the Mediterranean to Ceyhan from where the crude is further shipped via tankers to European markets. Running through Azerbaijan and Georgia to a terminal facility at Ceyhan on the Turkish Mediterranean coast, the pipeline has the capacity to transport one million barrels of crude oil. All the oil transported will be exported to Western markets. The BTC pipeline offers an inherently safer means of transporting oil over long distances.

Blue Stream

Gazprom research (2003) explains that the Blue Stream gas pipeline is designed to deliver Russian natural gas to Turkey across the Black Sea by passing third countries. Blue Stream supplements the gas transmission corridor running from

Russia to Turkey via Ukraine, Moldova, Romania and Bulgaria. Eni (2009) found that Blue Stream is undoubtedly one of the most challenging project of its type ever attempted because of the difficulties in terms of design, construction, organization and logistics. The pipeline costs \$3.4bn and will carry, at full capacity, 16 billion cubic meters of natural gas from Russia to Turkey. The study of Offshore industry (n.d.) shows that the pipeline consists of three main parts. The route comprises a 222-mile section in Russia, a 235-mile section on the bottom of the Black Sea and a further 300-mile link from Samsun to Ankara. The Blue Stream pipeline is the world's deepest undersea pipeline.

There are some strengths and weaknesses of the pipelines which are mentioned by Thomas's study (Thomas, 2010). The most important strength is that the environment where it is build is very friendly. This means that the place of the pipelines is somewhere away from the populated areas. This fact brings some other strengths like low visual cost and little noise pollution. These pipelines are safe, do not need much space and have enormous transport capacity.

As weaknesses of pipelines, it can be mentioned that in these pipelines limited number of substances can be transported (for ex: oil pipeline, water pipeline or gas pipeline) and there is a limited capacity of these substances. Another weakness of the pipelines is that different pipeline systems are used for different substance groups.

Pipeline transport, besides the fact that it causes little noise and air pollution and in most cases no visual cost, has even more benefits. It is also a reliable, durable, safe and weatherproof, profitable, energy friendly and cost-efficient mode of transport that does not need much room to operate. A pipeline as a mode of transport for conveying liquids, gases, slurry, goods or other substances and materials is very reliable because once the time and date of the order have been registered, it is guaranteed that the package will arrive at its destination. The high delivery speed of a pipeline system is a huge benefit for many companies. It is self-evident that a pipeline system has to be durable in order to be profitable since the cost price of a pipeline system is enormously high. Most pipelines are laid underground and the above ground pipelines are situated in remote areas, creating a safety barrier in both situations. This makes pipeline transport a safe mode of transport with little accidents or deaths. Additionally, a pipeline is designed to withstand the extreme weather conditions that it may encounter, making it even safer.

Many pipeline systems make it possible for the consumer to use the transported product whenever consumer wants. The prerequisite is that there has to be enough capacity available to deliver to everyone and to cope with fluctuations in demand.

Trans Adriatic pipeline Project

BP Caspian (n.d) shows that in 1999 Shah Deniz, one of the world's largest gas-condensate field was discovered. It has a capacity of over 30 trillion cubic feet- 1 trillion cubic meters of gas in place. It is founded in Caspian Sea and has started its

operations in 2006. It has proved a secure and reliable supplier of gas to Azerbaijan, Georgia and Turkey via pipeline projects. Its newest project is Trans Adriatic Pipeline project.

Trans Adriatic Pipeline project is a 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. Using the data given by Profazio (2011), TAP is a 520 km pipeline from which 380 km will be covered in Albanian territory. TAP will be realized through the collaboration of three international energy consortiums, EGL, Statoil and German E.ON Ruhrgas. TAP offers security for the gas transportation through Shah Deniz field to European regions. As the gas furnishing increases, TAP will be able to transport 10 mmk gas more in a year increasing its capacity to 20 mmk, also depending on the demand. TAP will be financed from safe shareholders and will not require subventions from the countries it will be passing. It will require a cost of 1.5 milliard Euro.

For Albania it brings a lot of benefits. Nepravishta (2011) explains that it represents an essential choice for the economic development of Albania. This is a big investment for Albania which may attract the attention of other foreign investors. This project offers many jobs for unemployed which will lead to economic growth for Albania. This project gives to Albania the best opportunity of integration into European Union.

It will be a solution for the problems of energy furnishing Albania is facing, which may lead to political stability. Many families in Albania are suffering problems of energy shortage and this pipeline project seems to be the right solution for solving these problems. On the other side it may soften the political problems Albania has been facing.

TAP is a major project for the energetic infrastructure. In nowadays, Albanian energetic infrastructure is represented by hydro reserve power supply which does not fulfill the customer needs. Albania is importing energy at high costs. TAP will supply enough natural gas which will satisfy Albanian customer needs. TAP also gives the opportunity to be linked to other pipeline systems in the region.

The project also includes the option to develop natural gas storage facilities in Albania, which in turn would further contribute to increasing security of supply in southeast Europe. Albanian territory is very rich with fuel and gas reserves but they are not being used since Albania does not have a good energetic infrastructure and TAP is evaluating the option to develop underground storage in Albania.

As TAP is called the missing point of pipeline projects in Europe, it will fill the void and be the best contact link, with the shortest length to supply Greece, Albania and European regions. TAP will make an important contribution to the new gas supply corridor to Europe: the Southern Gas Corridor.

The governments of Italy, Greece and Albania confirmed their political support for the Trans Adriatic Pipeline (TAP) project by signing a Memorandum of Understanding (MoU) on 2012-09-27.

Analysis

We applied a survey in 3 cities (Tirana, Durres, Elbasan) in Albania to gather Albanian People's opinion about TAP. Sample is selected by convenience sampling method and 400 people replied the survey. After collecting data we organize them in SPSS 20 and then evaluate people's opinion on TAP by frequencies and percentages.

Demographic Indicators

Demographic indicators of the sample, such as gender, age group, education level, job types and income level, are given below.

Table 1. Gender

	Frequency	Percent
Valid Male	176	44,1
Female	223	55,9
Total	399	100,0

44 % of the sample is male and 56% of the sample is female.

Table 2. Age

Age	Frequency	Percent
Valid 18-24	122	30,6
25-39	108	27,1
40-64	139	34,8
65+	30	7,5
Total	399	100,0

Most frequently observed age group is between 40-64 by 34.8%. Less frequently age group is observed as older than 65 by 7.6%.

Table 3. Education level

	Education	Frequency	Percent
Valid	Primary School	28	7,0
	Secondary School	173	43,4
	University	197	49,4
	Total	398	99,7
Missing System		1	,3
Total		399	100,0

University graduate group is the first group that has more share in the sample by approx. 50%.

Table 4. Job Frequency

	Job	Frequency	Percent
Valid	Private Sector	65	16,3
	Student	83	20,8
	Public Sector	72	18,0
	Self-employed	24	6,0
	Housewife	60	15,0
	Retired	26	6,5
	Unemployed	69	17,3
Total		399	100,0

Comparing by the other groups, it is shown that retired and Self-employed groups are less share in the sample, 6.5% and 6% respectively.

Table 7. Income Level (Monthly)

Income	Frequency	Percent
Valid 1000+	23	5,8
200-499	92	23,1
500-999	27	6,8
less than 200	61	15,3
None of them	196	49,1
Total	399	100,0

Almost an half of the people declared they have no income, they are mainly unemployed group and then students and housewives.

Evaluation Of Tap

People joined with survey are asked to evaluate TAP from some perspectives like, enhancement of economy, improvement in energy problems of families living Albania, contribution to politic problems in Balkan and integration of Albania to Balkan and Europe.

Research Questions:

Question 1) Do you know what is TAP?

Firstly people asked whether they know TAP or not and results are given in Table 8, below

Table 8. TAP know

	Frequency	Percent
Valid No	214	53,6
Yes	185	46,4
Total	399	100,0

The share of people who know TAP is slightly less than people who do not know TAP, their proportion in the sample are 53.6 % and 46.4 % respectively.

Question2) Do you think that this project will help Albania economically?

People asked to give their opinion about TAP will help Albania economically or not, and results are given in Table 9, below

Table 9. Albania economy

	Frequency	Percent
Valid No	64	16,0
No idea	42	10,5
Yes	293	73,4
Total	399	100,0

Majority of people (73.4%) affirmed that TAP will enhance Albania economy. Only 16% of them think TAP will not enhance it.

Question 3: Do you think that this project will help in problems that some Albanian families face with energy?

It is asked that to people whether TAP will help Albanian families' energy problem and results are given in Table 10 below.

Table 10. Energy problem Albania

	Frequency	Percent
Valid No	121	30,3
No idea	6	1,5
Yes	272	68,2
Total	399	100,0

Majority of people (68.2%) think that TAP will help families 'energy problem in Albania. On the other hand 30.3% of them do not think TAP will help energy problem of families.

Question 4: Do you think that this project will help in solution of political problems of Balkans?

It is asked that to people whether TAP will help in solution of political problems of Balkans, and results are given in Table 11 below.

Table 11. Politic problems in Balkan

	Frequency	Percent
Valid No	126	31,6
No idea	96	24,1
Yes	177	44,4
Total	399	100,0

44.4 % of people say “Yes”, TAP will help in solution of politic problems in Balkan. But people who say “No” is also quite high by 31.6%. 24.1% of people did not declare any positive or negative opinion by saying “No idea”.

Questions:

5- Does this project help in the integration of Albania into Balkan Economy?

6- Do you believe that this project will help Albania to integrate into Europe?

Answers that are given to these two questions show us people’s opinion about integration of Albania to its region and Europe. Integration to Europe is very important for Albania. Results are given in Table 12 and Table 13 respectively, below.

Table 12. Integration to Balkan

	Frequency	Percent
Valid No	88	22,1
No idea	74	18,5
Yes	237	59,4
Total	399	100,0

Table 13. Integration to Europe

	Frequency	Percent
Valid No	112	28,1
No idea	1	,3
Yes	286	71,7

Table 12. Integration to Balkan

		Frequency	Percent
Valid	No	88	22,1
	No idea	74	18,5
	Yes	237	59,4
	Total	399	100,0

Majority of people think that TAP will enhance to integration of Albania to Balkans (59,4%) and Europe (71.7 %). But their belief in integration to Europe is higher than Balkan. It can be assumed as normal because TAP will connect Greece, Albania and Italy. At the same time Albania is assumed as it will be a part of European Union.

Conclusion

By the results of the research we can say that for Albania, a country in transition, the need for economic decisions in energetic is very high. The history of pipeline projects has shown that such an investment may be a solution for recovering energetic system and increasing economic growth of the country.

The survey applied in Albanian citizens shows that people have positive percieveeness about TAP. For example, Majority of people (73.4%) affirmed that TAP will enhance Albania economy. Then, 68.2% of people think that TAP will help families 'energy problem in Albania. And, 44.4 % of people think TAP will help in solution of politic problems in Balkan.

Another important findings are related with integration of Albania into Balkan and Europe. Majority of people think that TAP will enhance to integration of Albania to Balkans (59, 4%) and Europe (71.7 %). They believe in that TAP will provide an opportunity in integration to Europe as their final goal being a member of European Union. It will support to achieve this goal.

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