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Dear Colleagues, Ladies and Gentlemen,

It is great honor for me to be President of the **International Scientific Conference on Technics, Technologies and Education ICTTE 2013**, organized by the Faculty of Technics and Technologies, Yambol, Bulgaria, October 30 and 31, 2013.
I am pleased that you are participants in the conference. I hope that, in the time of the sessions, you, representatives of science and higher education from different universities and countries have got possibilities about ideas changing, to make discussions and to develop mutually cooperation in the conditions of European integration.
I want to share with you that such scientific forums will ensure the development of the faculty and realized international contacts will consolidate its international recognition.
I am happy to greet you on behalf of the leadership of Trakia University and Faculty of Technics and Technologies, with “Welcome in Bulgaria and the town of Yambol!”

Prof. Ivan Stankov, DSc
Rector of Trakia University of Stara Zagora
President of the International Scientific Conference on Technics, Technologies and Education ICTTE 2013

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CURRENT SITUATION AND FUTURE OF NATURAL GAS IN TURKEY

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Abstract. *In this study, current situation of natural gas and its geo-energetics in our country are analysed and its supply and demand equilibrium is compared. Today, some factors such as its cheapness relatively to many other kinds of fuel, high efficiency, easiness of its use, demand flexibility and low investment cost brought natural gas use into the forefront. By mentioning geopolitical state between natural gas-environment and energy sources of the negotiations between Turkey and European Union (EU), effects of adopted policy are treated. As of 1984 in Turkey, natural gas sector has picked up speed, totally 664 million m^3 natural gas was produced in 2012 and until now 13,5 billion m^3 natural gas has been produced. Production fall was able to be prevented partially with the exploration of new petrol area in Turkey and development of secondary production methods, in 2012 relatively to 2011, %4 fall occurred. Raise of natural gas consumption that occurs every year depending upon developing industry and life quality has been observed. With the international agreements, it is determined that our country, which has a crucial position as a bridge in import and export, will have a 150 billion-m^3 natural gas system.*
Keywords: *Natural Gas, Natural gas plan in Turkey, Future of The natural gas.*

1. INTRODUCTION

Energy and heating need increase continuously in parallel with technological developments, industrialization and population growth today. Till now, this need has been supplied with various kinds of energy sources such as coal, petrol and fossil fuel [1].
Natural gas has the most important role in meeting energy need in Turkey and all over the world. As natural gas has usage area in almost every field in industry today, many countries have come up as producer, distributor and consumer and total energy consumption portion of natural gas started to increase gradually on the earth. Sources of natural gas, which is produced on earth, meet %21 of total energy consumption and it is thought that they will be meeting %25-30 of the consumption in 2030 as long as technological developments go on. After the petrol crisis in 70's, energy sector in the world started to extend its investments with gas sector gradually. Depending upon a development like this, natural gas has become one of the most important energy sources of the world [2]. With the gaining importance of environmental policies on the earth, natural gas, which pollutes less the atmosphere and is cleaner energy source than fossil fuels relatively, is more preferable.
It is evaluated the fact that ration of natural gas and renewable energy types will increase, concrete fuel and nuclear energy contribution to total energy consumption will decrease until 2030 [2]. Although demand variety in natural gas sector and meeting this demand in any way

from different sources cause natural gas systems become more complex, this situation won't prevent natural gas from being preferred. It is indicated that energy consumption will be increased %60 in the world and more than %100 in Turkey in 2030 beside today [3].
At the beginning of 2011, 3.178,2 billion m3-natural gas production increased %3, 1 at the beginning of 2012 and became 3.276,2 billion m3. This raise in natural gas production takes its source from U.S.A., Russia and Qatar. Russia is the first in the world as natural gas producer with %33, 2 proportions; U.S.A. is the second one with %28 while production of European Union countries decreases continuously [4]. It is known that European Union is where the most intense energy consumption happens, despite it hasn't enough facility in terms of energy source. After the last developments, E.U. has 25 members that's why its foreign-source dependency has increased. This case forces E.U. to make new declinations in terms of energy need security. Having multi-pipelines policy among its policies of E.U. so creating source variety in energy import is the most remarkable subject. At the same time, this subject constitutes one of the most important contributions to the membership of Turkey for E.U. [5]. On October 3, 2005, with the beginning of Turkey-E.U. negotiation, European Union becomes adjacent zone with main energy areas of the world. In this regard, importance of October 3, 2005 on E.U. must be accepted as much as Turkey's. Turkey has properties having not only necessary but strategically importance for energy. Subjects such as providing energy securely and continuously, plentiful usage, decreasing greenhouse gas effects and saving environment, tendency of petrol price raise and indecision, transition from fossil sources to new and renewable energy sources are the subjects concerning all the world and Turkey should deal with and include these in its policies [3]. Natural gas is the first one of these sources in Turkey as all over the world. To able to comprehend the importance of this subject, current state of natural gas, Turkey's strategic location and state in the future need to be examined.

2. CURRENT STATUS OF NATURAL GAS IN TURKEY AND THE SITUATION OF GEO-ENERGETIC IN THE REGION

Natural gas sector in Turkey in 1984 gathered speed with the agreement between Turkish government and old USSR [1,2]. For the first time, From Bulgaria border to Ankara, natural gas pipeline was started to be broadened and in 8 years, it was done in 5 town [1]. Turkey is the seventh in natural gas consumption in Europe and %5 of total consumption in Europe occurs [3]. When we examine natural gas consumption year by year; nearly 22 billion m3 natural gas is consumed in 2004, 27 billion m3 in 2005, 30,5 billion m3 in 2006, 36,5 billion m3 in 2007. 2007-natural gas consumption is increased which is composed by dwelling sector %22,2 with totally 7,8 billion m3 annually, industrial sector %21,7 with 7,6 billion m3, electrical sector %56,1 with 19,7 billion m3 [7,8]. Turkey's energy need, especially electric and natural gas need, is getting more and more day by day. Energy production in Turkey can just meet %48 of the need. Total energy need is 98 Mtoe in 2001 and this need will be 308 Mtoe in 2020 [10]. Natural gas production areas, which are known, were established in Southeastern Anatolian region in sequence [10].

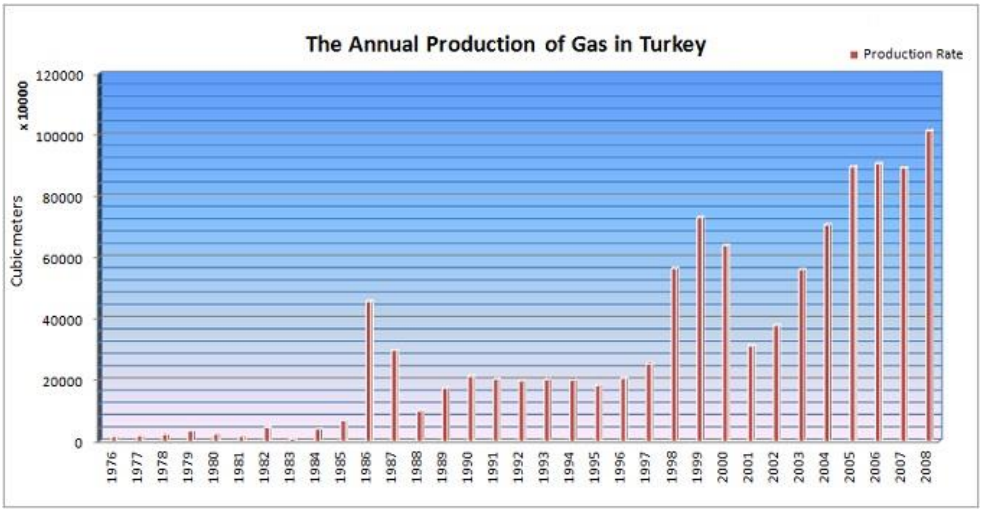

Figure 1.
The annual production of gas in Turkey

As of the end of 2008, our total domestic producible natural gas reserve is 6,827 million m3. It is predicted that unless new explorations are done with the production level today, natural gas reserves in Turkey can resist just 6-7 years [6].

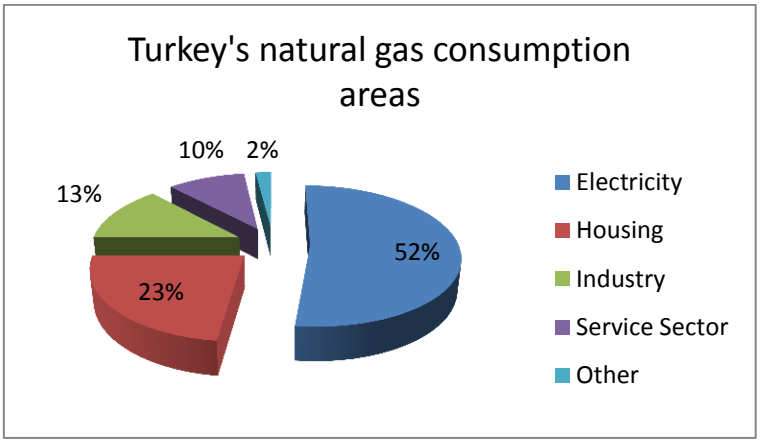

Figure 2.
Turkey's natural gas consumption areas

In figure 3, international natural gas pipeline map is shown. Map shows current natural gas pipeline, plus this can be evaluated as delivery scheme of natural gas provided by Russia. As of 2004, natural gas reserves in Turkey is shown in Table 1.

Figure 3. International Map of the natural gas pipeline projects

Table 1. Natural gas reserves in Turkey

	Visible	Probable	Feasible	TOTAL
Hard Coal (Million Tons)	**526**	**425**		**1.319,40**
Brown Coal (Million Tons)				
Elbistan	4.381,30			4.381,30
Other	6.401,00	826,8	143,1	
Total	10.782,30	826,8	143,1	
Asphaltite (Million Tons)	**40,7**	**29,5**	**7,3**	
Bitumen (Million Tons)	**1.641,40**			**1.641,40**
Hydraulic				
GWh/Year	129.388,00			129.388,00
MW/Year	36.603,00			36.603,00
Crude oil (Million Tons)	**43,1**			**43,1**
Naturel Gas (Billion m3)	**6,2**			**6,2**
Nuclear Sources (Tons)				
Naturel Uranium	9.129,00			9.129,00
Thorium	380.000,00			380.000,00
Geothermal (MW/Year)				
Electricity	98		512	600
Heat	3.348,00		28.152,00	31.500,00
Sun (Million TOE)				
Electricity				
Heat				32,6
Wind				
Electricity (MW)				48.000,00
Heat				
Biyokütle (Million TOE)				
Electricity				2,6
Heat				6

3. NATURAL GAS TRANSMISSION LINES IN TURKEY, AND THE IMPORTANCE OF THE REGION

Turkey has started to perform producing with its own sources in 1976. These first applications was done by TPAO. Studies about natural gas provide plannings and gas demand guess was carried out by BOTAŞ in 1980. As of 2008 until now, 10.5 billion m3 natural gas production has been done. As of 2010, Turkey has 6,2 billion m3 producible natural gas reserve [9].

4. THE FUTURE OF NATURAL GAS IN TURKEY

It is announced by the authorities that Turkey claims to have a 150 billion m3-natural gas pipeline system in total that will be able to transfer 100 billion m3 gas to Europe and consumes 50 billion m3 natural gas in 2020's [3]. Turkey makes Greece and Bulgaria more important in terms of strategic location as it will be used as a bride to transfer the natural gas in Russian and Arabic countries In next years.

5. CONCLUSION

Nowadays natural gas has a wide range of usage area. The usage rates of natural gas are increasing day by day all over the world as well as in Turkey. While the first main reason for this increase is warming but also the usage of natural power stations are increase. In this study, Turkey's demand of natural gas over the years is researched and assumptions are made for the future demand. Furthermore the policies and consumptions of natural gas have been compared between Turkey and The Countries of European Union.

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