

GEOPOLITICS OF ENERGY IN EURASIA – THE CASE OF TURKMENISTAN



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GEOPOLITICS OF EURASIA- CASE OF TURKMENISTAN

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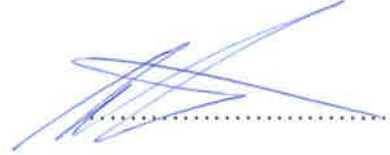
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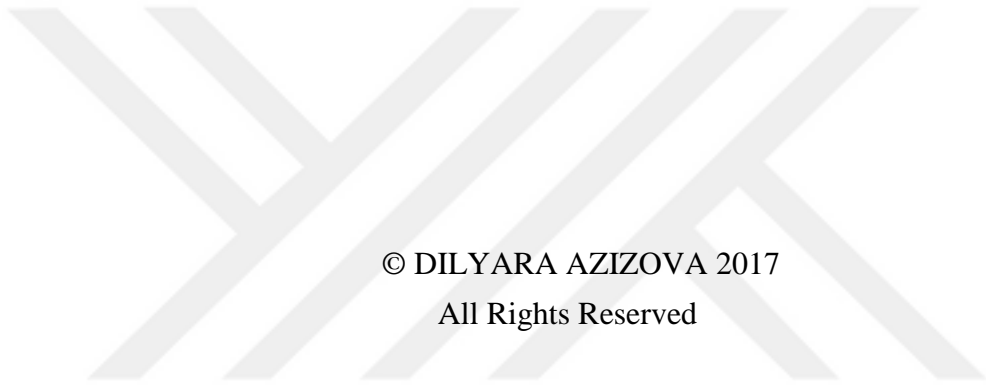


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To my Father



ABSTRACT

GEOPOLITICS OF ENERGY IN EURASIA- THE CASE OF TURKMENISTAN

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M.A. Thesis in Political Science, June 2017

Thesis supervisor: Assoc. Prof. Mehmet Emre Hatipoğlu

Keywords: Geopolitics, Natural gas, Turkmenistan, Energy routes, Diversification.

Turkmenistan with the fourth largest natural gas reserves in the world is set to play a crucial role in world's energy politics. Yet, its prospects to do so is hindered due its unfavorable geopolitics and the landlocked position of the country. This thesis provides a broad analysis of the shifting dimensions of Turkmenistan's energy sector by reviewing its bilateral relations with neighboring countries with an emphasis on past and ongoing projects. Additionally, this work will focus on the likelihood of potential diversification of existing natural gas routes by taking up geopolitical considerations such as security, access to international waters and relations with the surrounding neighborhood. The main research questions that this thesis seeks to answer are the following: what are the feasible scenarios for Turkmenistan to diversify their natural gas export market? What are the major geopolitical factors that restrict Turkmenistan's ability to diversify their gas routes? In considering these questions, the emphasis will be on determining the feasibility of different natural gas routes between Turkmenistan and its partners, and the future prospects of Turkmen gas trade relations with emerging markets.

ÖZET

AVRASYANIN ENERJİ JEOPOLİTİĞİ – TÜRKMENİSTAN ÖRNEĞİ

DİLYARA AZİZOVA

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Anahtar kelimeler: Jeopolitik, Doğal gaz, Türkmenistan, Enerji kaynakları, Çeşitlendirme.

Türkmenistan dünyadaki en büyük dördüncü doğal gaz rezervine sahip ülke olarak dünya enerji siyasetinde önemli bir rol oynamaktadır. Ancak, bu role dair beklentiler ülkenin elverişsiz jeopolitiği ve kara ile çevrili pozisyonu dolayısıyla engellenmekte. Bu tez Türkmenistan'ın enerji sektörünün değişen dinamiklerini komşu ülkelerle hali hazırda sürdürülen ve geçmişte yapılmış projeleri inceleyerek geniş bir analizini sunmaktadır. Ayrıca, bu çalışma mevcut enerji yollarının potansiyel farklılaşması ihtimalini jeopolitiği güvenlik, uluslararası sulara ulaşım ve çevredeki komşu ülkelerle ilişkiler üzerinden inceleyecektir. Bu tezin cevaplamaya çalıştığı temel araştırma konularından bazıları: Türkmenistan'ın doğalgaz ihracat marketini çeşitlendirmek için uygulanabilir senaryoları nelerdir? Türkmenistan'ın gaz rotasını çeşitlendirmesini sınırlayan başlıca jeopolitik faktörler nelerdir? Bu soruları göz önünde bulundurduğumuzda, Türkmenistan ve ortaklarının arasındaki farklı doğalgaz rotalarının uygulanabilirliğine karar verilmesi ve yeni gelişen pazarla birlikte Türkmen gaz ticaretinin gelecekteki görünümü üzerinde durulacaktır.

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LIST OF SYMBOLS AND ABBREVIATIONS

BCM : Billion Cubic Meters

BP: British Petroleum

CNPC: China's National Petroleum Company

EIA: U.S Energy Information Administration

EU: European Union

IEA: International Energy Agency

INOGATE: Interstate Oil and Gas Transportation

LNG: Liquefied Natural Gas

TCM: Trillion Cubic Meters

TAPI: Turkmenistan-Afghanistan-Pakistan-India Pipeline

TSO: Transmission System Operators

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INTRODUCTION

Turkmenistan has enormous natural gas reserves, estimated at 17.5 trillion cubic meters, ranked as the fourth largest following those of Qatar, Iran and Russia.¹ Following the independence in 1991, Turkmenistan had to learn how to manage its own natural gas reserves. One of the initial steps that the first President of Turkmenistan, Saparmyrat Niyazov, took was to maintain gas trade relations with countries to which there were existing pipeline connections. Since these early years, natural gas is exported to external actors solely based on bilateral agreements and which are usually signed for the long term, the shortest being around five years.

Since the collapse of the Soviet Union the biggest buyer of Turkmen gas has been Russia (mainly because of existing pipeline connections). This has resulted in Russia's monopolization of Turkmen gas. Consequently, in order to break free from Russian influence, Niyazov created a plan for diversification of Turkmenistan's energy routes. While the state was able to diversify to the direction of neighboring Iran in the 1990's and China starting in 2009, one of the major problems that Ashgabat still faces is its unfavorable geopolitical position and the landlocked nature of the country.

This thesis identifies the formidable challenges facing Turkmenistan's in its efforts to export its natural gas and then examines possible future scenarios for diversifying its export destinations. Analyses made in the thesis point to Turkmenistan's unfortunate geopolitical situation as a landlocked country the chief cause of its to diversify its natural gas markets. In this thesis the notion of geopolitics will be looked through Turkmenistan's energy relations with neighboring countries. Under the term of the 'geopolitics of energy' I identify the current and future scenarios of possible gas pipeline connections from Turkmenistan's gas fields connecting abroad. As for the theoretical standpoint, I go onto elaborate three major dynamics at play with respect to geopolitics: post-Soviet legacy, neighboring hegemony, and cross national borders. By post-Soviet legacy, I consider the

¹ Mammadov.Q (2015), "Turkmenistan positions itself as Eurasian natural gas power", *Oil and Gas Journal*. Baku.Az

role of Soviet drawn national borders as well as inherited already existing pipeline networks. This dynamic is crucial in explaining the case of Turkmenistan as compared to other resource rich and landlocked countries. By neighboring hegemony, I first examine Russia's influence in the Central Asian gas market during the 1990s and then go on to consider the shifting of regional hegemonic power from Russia to China beginning in 2010. By cross national borders, I explain the decisive role that borders play with regard to the trade and transportation of natural gas between countries.

This thesis is divided in to six chapters. The first chapter provides an overview of Turkmenistan geopolitics and the natural gas trade following country's independence from the Soviet Union. This chapter reviews the total natural gas reserve capacity in the country by examining the exiting gas fields that are being used and the companies that are in charge of operating them. Moreover, this chapter lists the number of developed and undeveloped gas fields illustrating the full potential of the country's reserves that are ready to be exported.

The second chapter focuses on China's rising natural gas demand in tandem with its consumption. Growing concern of increasing environmental effects of coal, China might also shift to natural gas taking advantage of low prices of LNG in global markets. In addition this chapter provides a justification based on the future gas demand scenario for further bilateral energy cooperation between Turkmenistan and China.

The third chapter focuses on past bilateral relations between Russia and Turkmenistan starting from mid 1990s. In this chapter I briefly analyze the transition of Turkmen- Russian Gas relations and its transformation after the disintegration and the tensions that the two countries faced due to the gas disputes in early 2000's. This chapter is essential to investigate Turkmen – Russian rivalry over the European Gas market and Russia's geopolitical advantage over Turkmenistan. The last part of the chapter provides a detailed breakdown of the reasons behind the termination of the Gazprom's contracts with Turkmenistan leading to end of Russo – Turkmen gas cooperation on January 2016.

The fourth chapter takes up on Turkmenistan's energy relations with Iran and their share in overall gas exports from Turkmenistan. The main challenges on writing this chapter is the limited statistical evidence available and lack of transparency in terms of the signed agreements between the two countries. Additionally, this chapter deliberates on the barter exchange of goods in return to Turkmen gas in Iran which is one of the leading causes for current dispute on debt settling between the two parties. This chapter will sum up by analyzing the scenarios of future bilateral cooperation and reasons why there is an anticipation of the successful resolution of the debt dispute between the two countries.

The purpose of the chapter number five is to analyze the feasibility of the Trans-Caspian pipeline. The chapter indicates the barriers limiting the usage of Caspian as the energy transit zone. The first barrier is the unresolved legal status of the Caspian, the issue that created an open conflict between the coastal states. Hence, this chapter will view the negotiation rounds in attempts to resolve this issue, furthermore illustrating Russian predominant role in settlement of the dispute.

The last chapter considers Turkmenistan's possible diversification towards its partners in the East mainly through three main projects: TAPI, Central Asia- China pipeline and Iran as a potential LNG hub. This chapter identifies possible challenges that could undermine the feasibility of each project by mentioning why some of the projects (particularly TAPI) have not been successful up until now.

The main sources that I use in this work include the annual reports of International Energy Agency, notably, *World Energy Outlook* and statistics collected by British Petroleum Company. On the basis of available information, this thesis analyses current and previous bilateral relations between Turkmenistan and its partners, identifying the major factors that pose challenges to Turkmenistan's ability to export gas and thus, to take advantage of its substantial energy resources.

CHAPTER 1

The Geopolitical significance of Turkmen Gas

The geopolitical fate of Turkmenistan has been determined by two major factors; its geographical location and its abundance of natural gas supplies.² Following the breakdown of the Soviet Union, the ex com-party leader Saparmyrat Niyazov became the first president of the independent Turkmenistan. After gaining their independence on 27 October 1992 one of the first steps that President Niyazov took was to obtain a status of ‘neutrality’ – some critics argue that initial idea of asking for this status was to break free from Russian influence³. I on the other hand think Russia is not the only reason behind Turkmenistan’s willingness in getting their neutrality. Lack of strong military apparatus and inability of Ashgabat to secure the state from the external threats was also another reason for seeking such status.⁴ Moreover, the status of ‘permanent neutrality’ provided Turkmen’s sovereignty to conduct a bilateral foreign policy with different countries with relative independence from Russia. Furthermore it also allowed Turkmen leadership to pursue the track of isolationism which has started during Niyazov’s term and still continues with current Berdimuhammedov’s policies.

Turkmenistan remains a highly authoritarian state with a presidential single-party system. Abundance of hydrocarbon resources is what enables the consolidation of the existing authoritarianism.⁵ In this chapter I will first examine the domestic production and consumption patterns of Turkmen gas; second look at the existing gas field reserves and the future natural gas production scenarios which have been covered in the report of 2016 World Energy Outlook.

² Akiner, Shirin. The Caspian: politics, energy and security. Chapter 11: *Turkmenistan's Caspian resources and its International political economy*, author: Germana Canzi London: Routledge Curzon, 2004. Print.

³ Cummings, Sally N., ed. *Oil, Transition and Security in Central Asia*. London: Routledge Cruzon, 2003.

⁴ Ibid

⁵ Ibid

1.1 Turkmenistan Natural Gas production and consumption

Year	2009	2010	2011	2012	2013	2014
T bcm	36.4	42.4	59.5	62.3	62.3	69.3

Table 1.1 Turkmenistan's gas production per year

According to the BP Report for 2015, the total change in the production between 2013 and 2014 was about 11 percent in total. The domestic gas consumption on the other hand remains relatively low. This low domestic consumption could be explained by Turkmenistan's small population which is estimated to be about 4.5 million. Table 1.1 illustrates the data on the domestic consumption of the country from 2009 to 2014.

Year	2009	2010	2011	2012	2013	2014
bcm	19.7	22.6	23.5	26.3	22.9	27.7

Table 1.2 Turkmenistan's annual gas consumption

As the table 1.2 demonstrates, the domestic consumption of Turkmenistan hasn't been more than 30 bcm per year. Yet given its population (4.5 million), per capita domestic consumption is high. This is the case since there are no other sources of energy available. The low domestic gas consumption could be mainly explained by the lack of advanced industry in the country.⁶ Gas derived energy products are sold to the citizens at a much discounted price. After the collapse of the Soviet Union the domestic gas consumption was completely free in the country and following the President's Niyazov death and the ensuing in leadership in 2006 domestic prices have increased only slightly.

⁶ Bohr, Annette "Independent Turkmenistan: from post-communism to Sultanism." Cummings, Sally N., ed. Oil, Transition and Security in Central Asia. London: Routledge Cruzon, 2003.

The projected scenario for Turkmenistan’s natural gas production in comparison to the Non-OECD countries clearly illustrates the expected result of rich resources recently discovered.

Years	2000	2014	2020	2025	2030	2035	2040	2014-2024 Change
Non OECD	1396	2267	2393	2672	2981	3300	3600	1.8%
E.E/Eurasia	729	858	879	949	1020	1095	1142	1.1%
Azerbaijan	6	19	25	35	43	51	55	4.1%
Russia	573	630	636	668	698	730	758	0.7%
Turkmenistan	47	80	97	119	142	166	181	3.2%

Table 1.3: World’s Gas Production Scenario 2016⁷

The table 1.3 demonstrates the projected production scenarios shows an increase starting from 2000’s up until 2040 it is estimated that it is going to increase even further. The reason for the increase in production is mainly due to the discovery of the new gas fields. These projections point to Turkmenistan’s need to monetize its natural gas resources by finding access to new markets.

⁷ For details look at the World Energy Outlook gas production 2016.

1.2 Turkmenistan's Gas Fields

Field name	Proven reserves (bcm)	Operator	Current Market	Potential Market
Dauletabad	1200	TurkmenGaz	Before domestic Russia, Iran	India, Pakistan
Darganata	n/a	TurkmenGaz	Before domestic Russia, Iran	
Mayskoye	11	TurkmenGaz	Russia	
Gagarinskoe	23	TurkmenGaz	Russia	
Korpezhe	141	TurkmenGaz	Russia	
Malay	n/a	TurkmenGaz	Russia	
Shatlyk	1000	TurkmenGaz	Russia	Europe
Naip		TurkmenGaz	Russia	
Kerpichli	n/a	TurkmenGaz	Russia	
Kukurtli	n/a	TurkmenGaz	Russia	
Seirap	n/a	TurkmenGaz	Russia	
Uchhadzhy	n/a	TurkmenGaz	Russia	
Shokrat	n/a	TurkmenGaz	Russia	Europe
Okarem	n/a	TurkmenGaz	Russia	
Byazshkyzyl	100	TurkmenGaz	Russia, China	
Saman Depe	1300	CNPC	China	
Galkynysh	13100	CNPC, Hundai/en	China	India, Pakistan
South Gutlayak	n/a			
Agarguyu	n/a			
North Gazlydere	n/a			
Dervezekom	n/a			
Shabasan	n/a			
Karadzhulak	n/a			
Total	17500			

Table 1.4: List of Turkmenistan's Gas Fields⁸

There are a total of 22 gas fields that are fully developed in Turkmenistan, while remaining potential 6 gas fields are not developed yet.⁹ According to British Petroleum estimates of the 18 existing developed gas fields, there are records for only 8 of them:

Dauletabad field: is located on the Northern Iran border and the proven reserves are estimated to be about 1,200 bcm.

Mayskoe (Minara) field: is located in the Southeastern part of Turkmenistan's Mary region estimated gas reserves are 11 bcm.

⁸ Table recreated from Oil and Gas Journal, 2016

⁹ See table 1.4

Gagarinskoe gas field: also located in Southeast of Turkmenistan and the estimated gas reserves are 23 bcm.

Byashkyzyl gas field: total capacity of the field is 100 bcm one of the Caspian fields located in Turkmenbashy area.

Shatlyk gas field: located within the area of the Amu-Derya basin, the fourth biggest gas field in Turkmenistan, the proven reserves estimated to be about 1000 bcm.

Korpedzhe gas field: located in the Southwest of Turkmenistan, one of the major onshore assets in the South Caspian basin, the estimated reserves are 141 bcm.

Saman-Depe gas field: located in Lebap province, it belongs to the Bagtyyarlyk area. It is the second largest gas field in the country, estimated gas reserves in this field are 1300 bcm.

Galkynysh gas field: located in the South Yoloten, Mary region and it is the largest gas field in Turkmenistan and Central Asia, the estimated gas reserves is 13,100 bcm.

Even though Russia's major gas fields are higher in terms of its proven gas reserves (for example: Bovanenskoe field is about 67,400 bcm) still Turkmenistan's proven gas reserves (with the total capacity of 17500) are enough to fulfill the demands of the major Asian energy importers.¹⁰ However, the geopolitical location and the landlocked nature of the country limit its sale potential. In the next part I will review the major international gas companies that have signed bilateral export agreements with Turkmenistan.

¹⁰ Gazprom official web site:” Russian Bovanenskoe Gas field” Retrieved from: <http://www.gazprom.com/about/production/projects/mega-yamal/> Retrieved on: 24/05/2017

1.3 Bilateral Agreements with International Gas Companies.

There are total of three international gas companies that have invested/operated in Turkmenistan. One of the first companies that have contributed with their investments was Russian Gazprom in the beginning of 2000's. Gazprom has breached their contract with Turkmenistan in January 2016. The company that is currently operating and has a long-term bilateral contract is CNPC that has sponsored the Central Asia- China pipeline.

CNPC: China's National Petroleum Company: the major pipeline was constructed in 2013, China is mainly importing from the largest field, which is Galkynysh. The starting exports in 2013 were about 25 bcm per year. According to Russia state news agency TASS, China is purchasing Turkmen gas at a giveaway rate of 185 USD per thousand cubic meters while to normal price rates are currently about 200-220 USD per thousand cubic meters of gas.¹¹ CNPC also exports from Saman-Depe, Altyn asyr pipeline the total amount taken from this gas field is unknown.

Iran National Gas Company: operates in the Korpedzhe gas field, starting from the early 2000's, estimated supply 7.5 bcm per year¹².

Russia's Gazprom: Out of 22 fields half of them used to be utilized by Russian Gazprom Company, the operations halted in the beginning of January in 2016, when following the termination of its contract with Turkmenistan.

1.4 Conclusion

To conclude this chapter, as one can observe even though the total gas reserves are very high, in 2016 Turkmenistan has lost Russia as one of their major gas market. The result of the termination had mainly to do with the fall of the demand in the European market. Additionally, some critics argue that Russia was ready to leave Turkmenistan after

¹¹ "China Figures Reveal Cheapness of Turkmenistan Gas." Eurasia Net, October 31, 2016. <http://www.eurasianet.org/>

¹² Parkhomchik Lidiya, Hayal Ayca Simsek and Zhuldyz Kanapiyanova. "Turkmenistan-Iran Energy Cooperation." *Eurasian Research Institute*, July 07, 2015. Accessed July 13, 2015. <http://eurasian-research.org/>

the economic crisis of 2009¹³. After the departure of Gazprom the fields that used to be operated by the company are now empty. On the other hand, Iran's exports have also been halted by Ashgabat due to the debt of almost two billion dollars that still haven't been paid by the Tehran.

Consequently, currently there are only two gas fields operated by China (Galkynysh and Saman-depe) which bring profit to the country, meaning that the stability of the Turkmen economy is solely dependent on the gas demand scenario of China. Consequently, the next chapter will discuss China's future gas demands and the future geopolitical prospects of the country.

¹³ Vasánczki, Luça Zs. "Gas exports in Turkmenistan." *Paris, Ifri* (2011).

CHAPTER 2

China's Gas Demands and Geopolitical change

China's adoption of the 'open-door policy' in 1978 resulted in staggering economic growth for over four decades. This rapid economic development in the country has further resulted in the growth of its energy demand thus requiring the expansion of the existing energy market. After 1978, China underwent remarkable expansion by introducing different policies to encourage foreign investment including structural reforms, market incentives, and decentralization policies.¹⁴ In 1997, the four-step restructuring plan in the electric power industry of China was introduced, which according to their plan is to be fulfilled by 2020. In 1998 China began its restructuring of coal and gas fields. The policies that were introduced to restructure the Chinese energy sector have resulted in the boom of the energy sector in China. The economic development has also brought an increase in China's electricity sector. As a result, China has had to react fast to fulfill the energy demand gap and start negotiations with different countries on gas imports and investments in transnational pipelines. The investment decisions of China resulted in a geopolitical transformation of the world's gas market. Chinese national gas companies were willing to invest in the Eurasian countries and import their gas easily, without the direct interference of Russia. I argue that this is mainly possible due to the geographic location of the China.

In this chapter I will discuss the importance of geopolitical location which determines the pool of countries from which China will be able to import conventional gas and other sources of energy to fulfill the increasing energy demand in China. The main focus will be on the import scenario of conventional and LNG gas to China.

Natural gas is the third most important natural resource after coal and oil. According to the International Energy Agency, natural gas is one of the fastest growing primary

¹⁴ World Energy Outlook (2014), "Gas Consumption Scenario", pg: 140 Published by: *International Energy Agency*, Paris 2014.

energy sources in the world.¹⁵ However, the transportation of this type of commodity is fairly difficult; there are two ways by which the natural gas can be transported; through pipeline or by the process of liquefaction. Both of the transportation techniques are hard and very expensive. The construction of pipeline takes time and demands a high investment in its construction; the liquefaction of the gas has been more expensive however, in the past two years the process of liquefaction is becoming cheaper. For decades China has been using coal to fulfill their energy demands, however in the recent years the Chinese government has implemented new policies that will enable China to consume less coal substituting it with alternative energy sources, for the most part, with natural gas.

China is the world's most populous country, and according to the EIA reports in 2013 it has surpassed the US as the world's largest net importer of petroleum and other liquids, though it was mainly caused by China's raising oil consumption. The 'Open door policy' has enabled the industrial and technological advancement of the country, resulting in a growth of energy demand to maintain their factories and trading sector. As we know, the energy demand growth is directly linked to the increase in energy consumption. The second chapter of my thesis is going to analyze the newly emerging demand for the natural gas in China and a general picture of its effects on the potential exporter. Since Turkmenistan is one of the main conventional gas suppliers to China I believe there is a need to analyze China's future natural gas scenario closely. Consequently, the first part of the chapter is going to provide figures that will summarize China's energy consumption growth.

2.1 Energy Consumption

For the most part China was able to fulfill their energy demand for years by using coal. About 66 percent of the state's total energy supply was primarily covered by coal.¹⁶

¹⁵ IEA "Natural Gas" Retrieved from: <https://www.iea.org/topics/naturalgas/>

¹⁶ "China: CNPC Increases Its Share Of Investments In Turkmenistan". 2016. *Abo.Net*. <http://www.abo.net/oilportal/topic/view.do?contentId=2244400>.

Second largest energy source in 2012 was oil (petroleum and other liquids). The attempt to diversify energy resources of China in 2012 was still not able to cover the amount of coal that is still being used in China. The figure 2.1 illustrates the redistribution of the Energy according to different sectors:

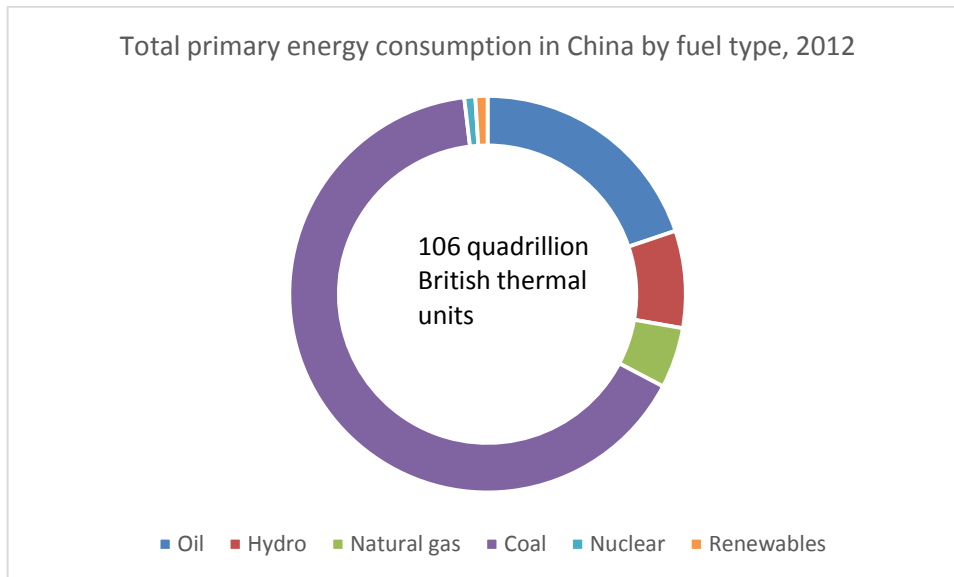


Figure 2.1: China’s primary energy consumption graph

From the figure 2.1 we can see that oil takes up only about 20 percent of the total energy consumption in China. Hydroelectric power is only about 8 percent while natural gas remains of very minimal part to the total (5 percent) on the energy circle.¹⁷ The major problem which is illustrated in this cycle is the amount of coal that is being used which results in severe air pollution throughout the country. China remains one of the most polluted countries in the world.¹⁸ The main reason for why coal is being used to the larger extent is the fact that there is an abundance of coal found within the country itself and also coal remains one of the cheapest raw material for the energy production which is used for

¹⁷ World Energy Outlook (2014), “Gas Consumption Scenario”, pg: 140 Published by: *International Energy Agency*, Paris 2014.

¹⁸ *World Energy Outlook 2014*. Overview Gas Demand. Paris: International Energy Agency

both electricity and heat generation. However, the air pollution which is caused by the burning of coal in China is becoming an increasingly significant point to consider. As a result of the high CO₂ emissions, the Chinese government has adopted a new policy in an attempt to minimize the coal dependence from around 66 percent of total energy supply to 62 percent by 2020.¹⁹ To achieve this goal, China first began investing in gas pipelines of natural gas rich countries such as Turkmenistan.

The following chart illustrates the success of China's reduction policy:

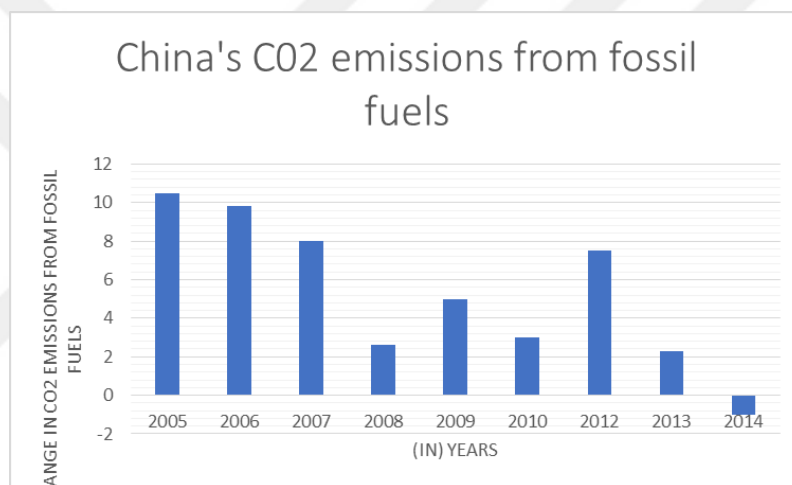


Figure 2.2 China's CO₂ Emissions

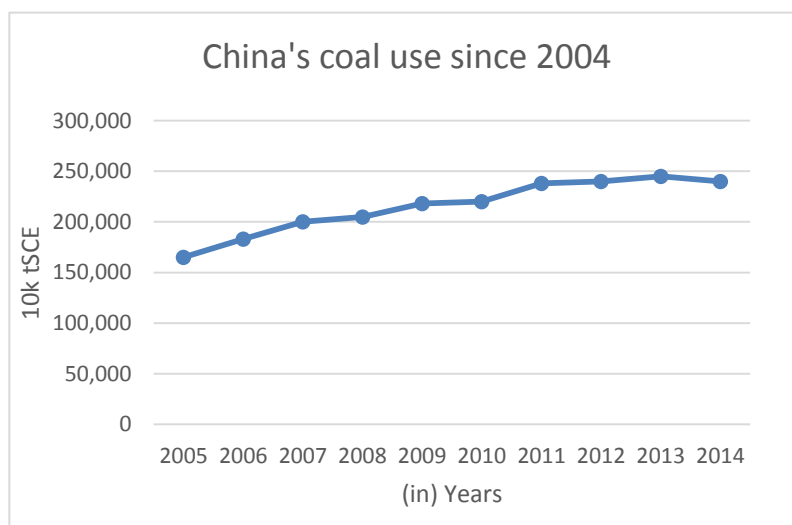


Figure 2.3: China's coal use

¹⁹Dale. S (2015), "Energy in 2014: After a calm comes the storm", Published by: *British Petroleum*, London, June 2016.

This figure 2.2 illustrates that the policy change in regards with the lowering the coal consumption has resulted in a positive effect. In a comparison with 2012, Chinese National Energy Agency has claimed that the coal consumption has dropped to almost 64.2 percent by 2014.²⁰ This progress is most likely due to a decline in a long-term scenario as the total energy consumption rises. However, Chinese high energy efficiency and its goal in increasing environmental sustainability are expected to result in the decrease of coal's share in overall energy consumption.²¹ The implementation of these goals requires a transition from coal and oil to cleaner burning fuel which is natural gas. The next part of the second chapter will focus on China's gas consumption according the newest World Energy Outlook.

2.2 China's Gas Production vs Consumption

	1990	2012	2020	2025	2030	2035	2040	2012-2040	
								Delta	CAAGR*
OECD	1036	1626	1724	1809	1886	1952	2004	378	0.70%
Americas	628	901	994	1048	1109	1146	1184	283	1.00%
United States	533	727	791	827	869	881	895	168	0.70%
Europe	325	507	531	558	572	595	610	103	0.70%
Asia-Oceania	83	218	199	203	207	211	210	-7	-0.10%
Japan	57	127	99	99	101	103	102	-25	-0.80%
Non-OECD	1004	1806	2142	2431	2724	3035	3343	1537	2.20%
E.Europe/Eurasia	738	692	693	714	740	775	807	115	0.50%
Caspian	100	117	134	146	155	166	177	60	1.50%
Russia	447	471	455	459	471	488	504	33	0.20%
Asia	85	433	645	793	934	1086	1240	807	3.80%
China	16	148	295	387	471	545	603	455	5.20%
India	13	57	82	109	136	167	202	145	4.60%

²⁰ China: CNPC Increases Its Share Of Investments In Turkmenistan". 2016. Abo.Net. <http://www.abo.net/oilportal/topic/view.do?contentId=2244400>.

²¹ *World Energy Outlook 2014*. Overview Gas Demand. Paris: International Energy Agency.

Middle East	86	404	469	531	598	650	696	292	2.00%
Africa	35	120	156	185	215	250	294	174	3.20%
Latin America	60	156	178	208	237	273	306	150	2.40%
Brazil	4	32	38	54	66	81	96	64	4.00%
World	2040	3432	3872	4249	4626	5007	5378	1946	1.60%
European Union	371	478	491	515	528	546	559	81	0.60%

Table 2.1: Data on China's natural gas

The New Policies Scenario published by WEO projects that gas demand in China is expected to have the largest growth between 2012 and 2040.²² From 148 bcm in 2012 China's demand is expected to increase to around 603 bcm by 2040 which is illustrated in Table 2.1 Natural gas demand by region

The diversification of the energy mix (especially in urban areas) from the large use of coal to the natural gas consumption is the way to improve air quality and reduce the air pollution. To make this expansion possible the government will be required to continue their gas reforms started in the last couple of years and as well as their investments in this sector. To understand how dependent China is on the external gas resources, it is necessary to look not only to the conventional gas exports through pipelines but to LNG supplies and suppliers as well.

The demand for gas in China has doubled from 2011 to 2015, hence, all sources of gas supply including domestic production, unconventional sources, LNG and pipeline gas has become necessary to satisfy this demand. It is not enough just to import sufficient amount of gas to satisfy the supply, but gas also needs to be distributed to the final users in the regions where there is a deficiency as well as ensuring security of the supply in those regions.²³ The process of such redistribution requires a significant amount of investments; hence, China will have to continue on expanding their existing investments in the energy markets. There are several challenges that the government is facing while implementing

²² *World Energy Outlook 2014*. Overview Gas Demand. Paris: International Energy Agency.

²³ Dale. S (2015), "Energy in 2014: After a calm comes the storm", Published by: *British Petroleum*, London, June 2016.

their new gas market policies. The first problem is the gas pricing and the regulatory reform of Chinese market. The transition of China's gas from 148 bcm to 295 bcm is not only challenging in terms of attracting the possible countries where to invest but also challenging in terms of the creation of a sufficient import infrastructure. During the project the infrastructure has to be built in such a way so it could directly connect to domestic transmitting system. Moreover, for the LNG gas there is a need to have a more expansive storage infrastructure (especially for the LNG gas). Nevertheless, these issues haven't become major obstacles for China to build significant import infrastructures in Myanmar, Central Asia and in addition other LNG markets. The infrastructure however, is mainly dominated by the three big National Oil Companies such as CNPC, SNP and Sinopec.

Although natural gas production in China is increasing, the total fuel is still limited to 5 percent of China's total energy cycle. China itself holds about 164 trillion cubic meters of proved natural gas reserves.²⁴ There are several policies and agreements that have been signed to expand not only the gas import of China but to also expand China's own natural gas production. China has tripled in their natural gas production between 2003 and 2013. The main target that the state wants to reach is 6.5 trillion cubic feet (184 bcm) by 2020²⁵, in order to use more of the natural gas as the primary energy sources in a replacement of burning coal and oil. The next graph will illustrate China's gas production in numbers.

²⁴ EIA "Technically Recoverable Shale Oil and Gas Resources: China", Published by : EIA, Washington DC, 2015.

²⁵ Ibid

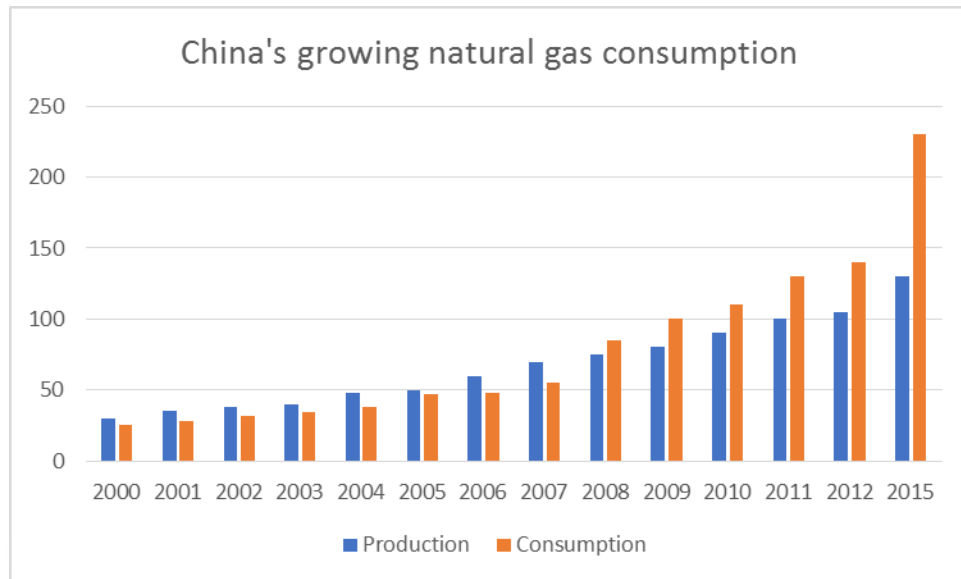


Figure 2.4: China’s growing natural gas consumption²⁶

From this chart we can see that the breaking point in the gas production took place in 2007 (when the imports exceeded the exports) with the rapid growth in the gas demand and it haven’t changed since then, on the contrary the demand level continues to exceed the production level of natural gas in China. The state is anticipating improving the share of natural gas almost to 10 percent by 2020 which will help them to lessen their coal production and reduce CO2 emission caused by the burning of coal.²⁷ Switching from coal to gas is also important due to the heating system of China during the winter, traditionally Chinese people are burning coal to warm their houses during winter, and as the result there is more air pollution during the winter time especially in the urban areas, where no other alternative heating system is established. Even though the majority of gas consumption stems from the industrial user which is about 32 percent of the total gas usage, the other share is used in the power and transportation sectors which have increased in the last decade.²⁸ China’s energy consumption by source is shown in figure 2.5:

²⁶ BP “ Report on China’s growing natural gas demand” 2015 Outlook

²⁷ EIA “Technically Recoverable Shale Oil and Gas Resources: China”, Published by : EIA, Washington DC, 2015.

²⁸ "China - International - Analysis - U.S. Energy Information Administration (EIA)". 2016.*Eia.Gov*. <https://www.eia.gov/beta/international/analysis.cfm?iso=CHN>.

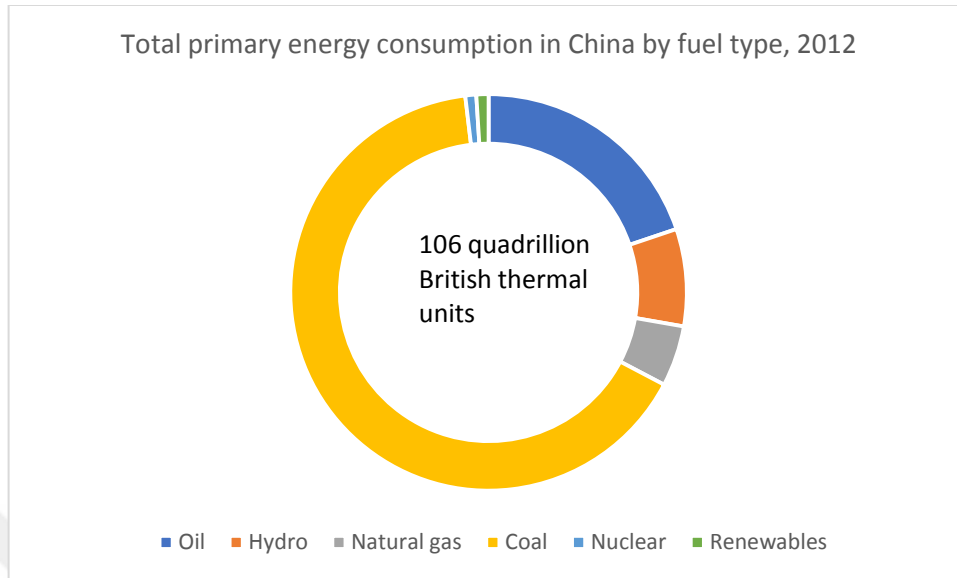


Figure 2.5: China Energy Consumption by Fuel type²⁹

From the graph given above we can see the pre-dominance of coal as the major energy source, and the lowest source is renewable. Gas usage as the primary energy source between 1982 and 2010 is also minimal in comparison with other countries.³⁰ One of the reasons why gas rate is so low is because of a lack of existing pipeline infrastructure In China. Consequently, since there are no exiting pipelines, there are only two ways to import foreign gas firstly, by infesting and building the pipelines and secondly, by importing LNG gas. After reviewing the general situation of China's has market and its consumption, the next part of the chapter will be devoted to a discussion of China's investments , exiting projects and future investments and potential challenges of the gas market.

2.3 China's Natural Gas Fields

There are several on regions in China that produce a shale gas. There are total of 7 shale gas basins in different parts of China. In the Southwest – Sichuan basin, Northwest-

²⁹ Energy Collective graphs from online journal.

³⁰ World Energy Outlook 2014; Overview Gas Demand. Paris: International Energy Agency.

Tarim, Junggar and Qaidam Basins, up North-Ordos basin and the last one which is an offshore basin is Pearl River Mouth basin. I will divide the basins into three categories:



Map 2.1: China's Natural Gas (Shale Gas Fields)

- a) Sichuan Basin: This is China's key natural gas producing area located in the Southwestern region in China. Sinopec has discovered up to 350 billion cubic feet in 2012.
- b) Northwest Basins: This basin is located in Xinjiang Autonomous region of China, historically it was China's most productive gas producing regions, currently, and in 2014 it was supplying 832 billion cubic feet which is 19 percent of China's total gas production.
- c) Northeast Basins: Changqing oil basin is China's largest gas producing area. About 31 percent of all gas supplies in China are coming from that basin.

In total it is estimated that due to the adoption of new policies by China the gas consumption in the region will increase resulting in the increase in demand, which China won't be able to satisfy through their domestic gas production, hence, the gas imports will increase. According to this graph it is estimated that by 2035 gas consumption will

increase up to twelve trillion cubic feet of natural gas, while the production will be satisfying only half of the consumption which is about 6 trillion cubic feet. The following graph will illustrate the general picture on China's demand vs supply scenario.

Consumption and Production of Natural Gas in China (2013)

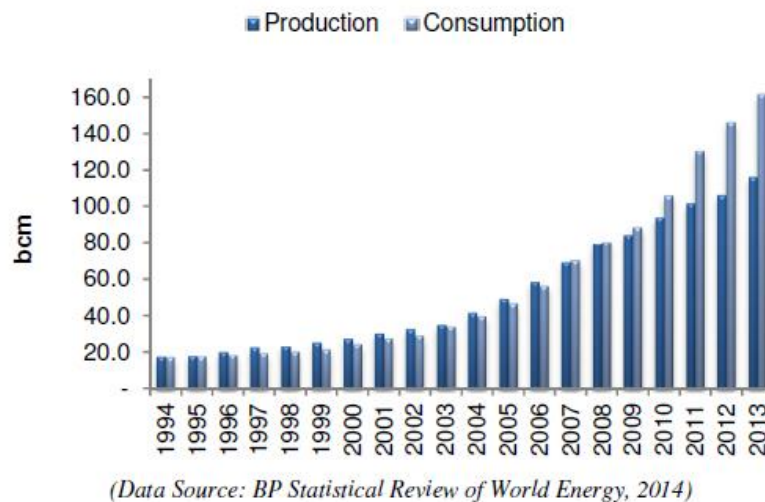


Figure 2.6: Consumption and Production Scenario in China

According to the BP statistics the estimated consumption of gas in China in the year of 2013 was about 160 bcm in total and the production level was about 100 bcm, the supply gap was satisfied by the imports coming from the external markets.

2.4 China's Gas market interests and investments

When a country decides to expand their gas market, there are several factors that this country will consider. Firstly, they will look at existing pipeline routes, through which the country can import the gas. This was the case in the post- Soviet countries when the gas exporting countries continued to export their gas because of the pipelines that were inherited from the Soviet Union. Secondly, the potential importer would look at the world map and select closest country with abundance of gas resource and will try to establish the energy trading relations with them. The second scenario is exactly what China did

(considering the gas prices) while planning their investments. However, the second feature does not apply to the LNG gas contracts that China has signed with African countries. In this part of the paper I will review the list of the gas rich countries and will see the investment patterns of Chinese national oil companies in the pipelines and gas fields in different countries.

According to BP estimates and IEA agency China has become second largest natural gas importer. In 2014, however BP has project that due to the sharp slow in the economic growth in China the energy consumption is also expected to slow to about 2.6 percent in 2014 (which is still very high number considering the GDP of the country), though it is less than half of the average that China had in the last ten years.³¹ In terms of China's gas importing countries, Turkmenistan has received the major portion of investments from China. In 2014 according to the official figures provided by CNPC, they have signed a 4 billion dollar agreement with Turkmenistan for the development of Bagtyyarlyk area. The capacity of the Galkynysh field in Turkmenistan is about 9 billion cubic meters per year, and the second field is about 6 billion cubic meters, which makes a total capacity of 10 billion cubic meters per year making Turkmenistan a country with 4th largest gas reservoirs on earth.³² The total import from Turkmenistan to China is about 46 percent of the total China's gas imports. The second largest country for the China's imports is Qatar, satisfying about total of 16 percent of country's gas imports and the third largest country is Australia taking up about 12 percent of the total gas imports coming to China. The following figure will illustrate the other countries in the circle of exporters:

³¹ "China: CNPC Increases Its Share Of Investments In Turkmenistan". 2016. *Abo.Net*. <http://www.abo.net/oilportal/topic/view.do?contentId=2244400>.

³² "China - International - Analysis - U.S. Energy Information Administration (EIA)". 2016. *Eia.Gov*. <https://www.eia.gov/beta/international/analysis.cfm?iso=CHN>.

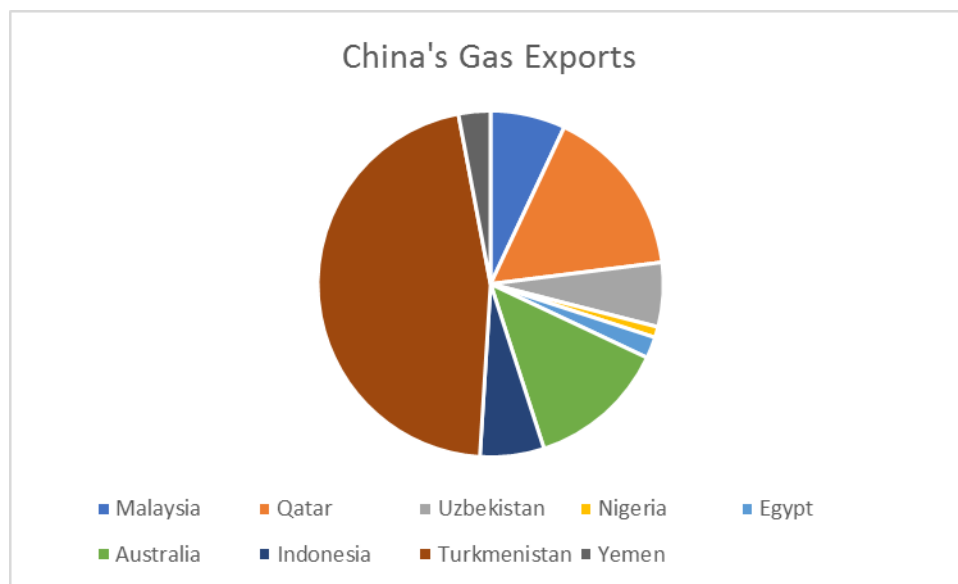


Figure 2.7: China's Gas Exports graph³³

The figure 2.6 is a good illustration of the importance of geopolitics when we talk about energy market. Geopolitics is the defining term to describe where the combination of resources is located geographically. Political aspect of the negotiations should also be taken into consideration hence, energy most of the times used as the political tool in changing and reversing political game in favor to the exporting country. Despite this fact, abundance of natural resources doesn't always bring benefits to the exporting countries, especially if the state that sells the product is initially bound by a rentier type of economy and is dependent on the income coming from the sales of the energy product.

Turkmenistan remains a vital energy partner for China due to its large gas reserves and the geographical location, which makes the process of pipeline construction easier. China has expanded their gas purchases not only to Turkmenistan but including Uzbekistan and also sees Kazakhstan as the potential energy partner as well naming their project "A new Silk road". This project initiated by China was welcomed in Turkmenistan and Uzbekistan but alerted Kazakhstani government. The major threat that Almaty is afraid of facing is the potential expansion of China which will result in spill over on the borders between China and Kazakhstan³⁴. The position of Turkmen government and their warm feelings to China is not surprising. After the Gazprom terminated their contract with

³³ BP 2015 report on Gas Exports to China

³⁴ Wu, Kang. 2013. *Energy Economy in China*. New Jersey: World Scientific.

Turkmenistan on gas purchases in the beginning of this year, the rentier state had to feel in their economic gap by finding an alternative market to sell their gas. Though there is a risk of Turkmenistan to become completely dependent on the China's gas purchases which will be disastrous for the Turkmen economy in case of sharp decline of China's gas demand. The sudden drop in the oil prices at the end of March 2016, has directly influenced the gas market as well. Despite the fact that the natural gas sales are initiated through direct bilateral agreements decrease in oil prices could potentially lead to the decrease in gas prices as well.

2.5 Future Gas Market Scenario in China

As in any other developing economy, there is time when economy hits recession likewise China has faced a sharp economic decline in 2014. This slowing has been for the most part complemented by the continuing shift of the pattern of growth³⁵, from the sectors such as steel production, iron and cement China has shifted to the more service- oriented parts of its economy.³⁶ While this change should result in the decline of the China's energy imports, gas sector demand will remain the same due to the China's plan to reduce the air pollution and decrease in coal production. In terms of LNG imports, all of the gas coming from Qatar will be in form of LNG gas, due to logistic difficulties in importing gas via pipelines. Most of the gas that will be entering China through pipeline will be coming from Turkmenistan. The LNG market scenario is indicated illustrated from the figure 2.7:

³⁵ China - International - Analysis - U.S. Energy Information Administration (EIA). 2016. *Eia.Gov*. <https://www.eia.gov/beta/international/analysis.cfm?iso=CHN>.

³⁶ China: CNPC Increases Its Share Of Investments In Turkmenistan. 2016. *Abo.Net*. <http://www.abo.net/oilportal/topic/view.do?contentId=2244400>.

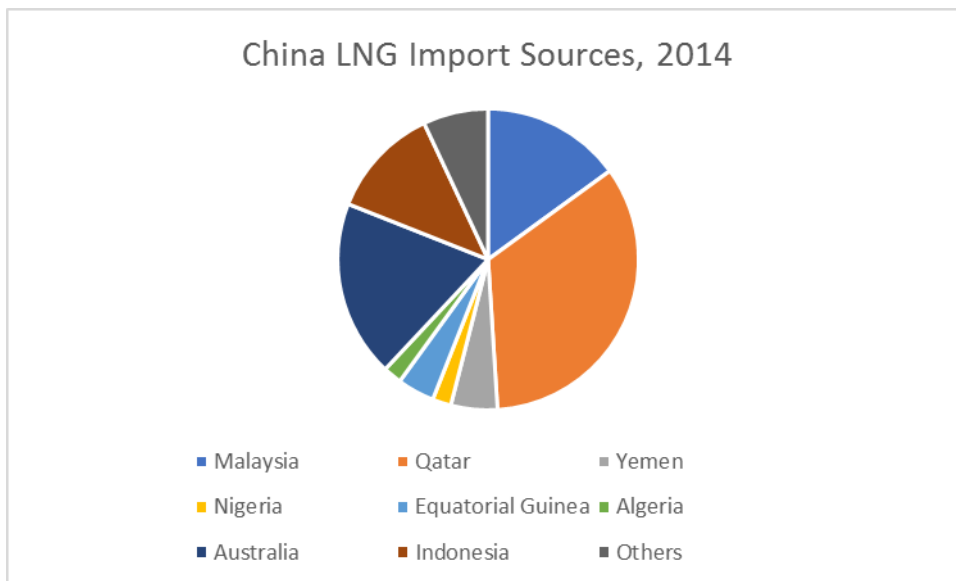


Figure 2.8: China LNG import sources, 2014³⁷

Qatar having the largest gas reserves in the world will be the major LNG supplier to China. Australia and Malaysia is the other two countries exporting LNG to China. In 2016, for the first time exports from the Caspian region to China overtook those to Russia, mainly, due to the cancellation of the Gazprom gas contracts with Turkmenistan and Uzbekistan.

2.6 Conclusion

To conclude my chapter on short analysis of China's gas market we should summarize several points. Firstly, China's further gas investment will depend on the energy demand rate and the economic development of the country. As if for now, the future scenario is illustrated in the table 2.2:

	1990	2000	2005	2010	2011	2012*	2018**
Production (mcm/y)	15300	27200	49320	94848	103100	109364	172728
Demand (mcm/y)	15990	24503	46764	105526	130950	142000	295000
Net Imports (mcm/y)	690	2697	2556	10678	27850	32636	-
Import Dependency (%)	4	11	5	10	21	24	-

³⁷ British Petroleum, special report on China, 2014. Retrieved from: https://energy.gov/sites/prod/files/2016/04/f30/China_International_Analysis_US.pdf

Natural gas in TPES (%)	1	2	2	2	4	-	-
--------------------------------	---	---	---	---	---	---	---

Table 2.2: Data on China's natural gas³⁸

According to the forecasts the gas demand for 2018 is expected to increase from 142 000 (mcm/y) to 295 000 (mcm/y).

Secondly, China has already invested a huge amount of money to Turkmenistan and in the long-term Chinese will just continue on using the pipelines that it just finished building in this country. Thirdly, since the gas market is highly dependent on the global oil prices, market shocks may result in the change of the current energy scenario. Lastly, there are several scenarios that describe future of energy politics in China. One of them has to do with an expansion of shale gas market in US. China has not yet started to export the shale gas from United States, but with the technological advancement and if the prices for gas will not drop sharply, considering the continuation of the high demand in the country, there is potential that US will become next China's trading partner. As for Central Asian region CNPC remains the major investing company in the Central Asian region, China was able to engage in bilateral negotiations with the countries in that region without the interference of Russia in their Scenario. Russia keeps their focus mainly on the European market and doesn't intervene (at least for now) in the energy relations of China and Central Asian countries. Consequently, if the situation remains as it is, we will continue to observe China's progress in terms of their diversification strategy of its internal energy market and suspect the sharp decrease in the coal consumption which should be at least partially replaced with natural gas market by 2020

³⁸ IEA: International Energy Agency, data collected in 2012

CHAPTER 3

Russian- Turkmen Gas Relations

3.1 Gas Pipeline Network

The gas pipeline structure inherited by Turkmenistan following the disintegration of the Soviet Union is mainly located in the east part of post-Soviet states.³⁹ During the Soviet times, the ‘CENTER’ Central Asian Pipeline network was the major network connecting former Soviet Republics via Central Asia.⁴⁰ Due to this former Soviet legacy and the way the pipeline structure has been built, has given Russia a leverage to control Turkmenistan’s gas market after the disintegration. In order to understand the transformation of Russo-Turkmen gas cooperation, it is important to examine how the usage of Central Asia ‘Center’ pipeline network has been transformed after Turkmenistan has become a sovereign state. Before I start analyzing the pipeline connection with Turkmenistan and how it has changed, I will first look at the ‘Center gas pipeline’ in connection with the ‘pre-Caspian’ gas pipeline which is illustrated in the map 3.1.



Map 3.1: Center Pipeline Network

³⁹ Vasánczki, Luça Zs. "Gas exports in Turkmenistan." *Paris, Ifri* (2011).

⁴⁰ Ibid

As it can be seen from the pipeline structure above, the Pre-Caspian gas pipeline has been connected through the Central Asia ‘Center’ network, which not only supplied Central Asian countries with gas but also has been a part of the pipeline route from Turkmenistan through Kazakhstan to Russian soil crossing the Alexandrov Gai passage. Through this route, Turkmen gas was then redirected to the bigger pipeline web controlled by Moscow which eventually connects to the Russian-EU Gas pipeline structure. This pipeline structure still exists up until today but Turkmenistan, despite being a crucial potential gas exporter has been excluded from this gas network, due to the changes that have taken place in the Energy market as well as general economic changes since the collapse of the Soviet Union.

To understand how Turkmenistan was excluded from the Russian gas alliance, it is necessary to look closer at the Turkmen-Russian energy relations which have prevailed since Turkmenistan’s independence in 1991.

3.2 Turkmen-Russian relations during the early years of independence.

The transition period was the time which would determine the pattern of the Natural Gas export scenario in Turkmenistan.⁴¹ Due to the economic crisis in Central Asian countries following their independence and their inability to independently control the industrial sector inherited from the Soviet Union, there has been a significant decline in the gas demand⁴². One of the major challenges that Turkmenistan has faced has been the problem of the reimbursement for the gas sold to the former Soviet Union States.⁴³ The state-planned economy of the FSU countries had been mainly based on the barter system, where one country would barter with another depending on the demand and supply which was controlled by Moscow. After the dissolution, *Itera* was an acting mediator regarding gas transit disputes in the FSU countries. Ukraine being a major importer of Turkmen gas

⁴¹ Vladimir Milov, “Ups and Downs of the Russia-Turkmenistan Relations,” in *Russian Energy Security and Foreign Policy*, ed. At Adrian Dellecker and Thomas Gomart (London: Routledge, 2011)

⁴² Ibid

⁴³ Vasánczki, Luça Zs. "Gas exports in Turkmenistan." *Paris, Ifri* (2011).

couldn't pay the debt which Ashgabat had hoped on getting back.⁴⁴ From time to time the Turkmen side had to freeze their exports as one of their strategies to pressure Ukraine to pay its debt which didn't bring any significant results.⁴⁵

In early 2000's *Gazprom* replaced Itera with a different intermediary company, though the name of the company has remained.⁴⁶ This replacement has played a significant role in the Turkmen export to Ukraine which I believe and served as an initial step for the process of elimination of Turkmen gas from the European gas market. When Gazprom became a major player in Russian gas industry, it signed an agreement with Naftogaz (Ukrainian Gas Company) and Eural Transgas was placed as an arbitrator. According to this agreement Turkmenistan was to export about 36 bcm of its gas to Ukraine using the existing pipeline structure from 2003-2006.⁴⁷ At the same time, Russia started changing its attitude towards the Caspian by cutting the gas stream to the west and this way also illustrating its monopoly to the trading partners and lowering the expectations of the Caspian States. Before the disintegration of the Soviet Union there have been minimal quotas established by Moscow, which distributed the amount of gas to each Soviet state in terms of how much gas they were allowed to sell abroad. In 1994 with the economic crisis and the collapse of the Soviet Union the quota system was reshaped giving the priority to the center and then allowing for the redistribution for the other states. Since Turkmenistan has significant gas reserves, it has been a primary competitor for Russian gas, which in the coming years with the leadership of Putin would result in tensions with the respect to bilateral relations of the two countries.

⁴⁴ Ibid

⁴⁵ Pomfret, Richard. "Turkmenistan's Relations with Russia." *Russian Analytical Digest*, no. 71 (2010): 10-13. <http://www.css.ethz.ch/en/publications/rad/rad-all-issues.html>

⁴⁶ Vasánczki, Luča Zs. "Gas exports in Turkmenistan." Paris, Ifri (2011).

⁴⁷ Michael Fredholm, *Natural-Gas Trade between Russia, Turkmenistan, and Ukraine. Agreements and Disputes* (Stockholm University:Asian Cultures and Modernity Research Report 15, 2008).

3.3 Russo-Turkmen Gas transition

The inclusion of *Itera* as an intermediary dispute settling company between Russia-Ukraine and Turkmen gas sales has not been successful in settling the gas dispute between Ukraine and Turkmenistan thus resulting in a slow decline of Turkmen gas exports to the Ukrainian market, due to Ukraine's inability to pay hard currency. Despite the fact that, according to the agreement only 40 percent was to be paid in hard cash while the rest of the payment through the barter food and other goods. Turkmenistan has nevertheless been excluded from the agreement before 2002-2003 Russian-Ukraine gas crisis. At the beginning it seemed like the inability of Ukraine to pay their gas bills was solely a Turkmen problem, yet in the coming years it would become evident that this problem has transferred into a Russian as well. After the first gas crisis with Ukraine, the share of the exports coming from Turkmenistan dropped to 6 bcm.⁴⁸ In 2005 Ukraine could still buy gas from Turkmenistan directly, however, there were two obstacles that made this gas transaction impossible; first, Ukraine's inability to pay its debts making it unfeasible for Turkmenistan to sign new trade deals with Ukraine and therefore complicating their bilateral gas trade relation. Fearing that the same would happen with the new contracts Turkmenistan stopped its transactions with Ukraine choosing to wait for at least a partial payment from the country.⁴⁹ The second obstacle was a technical one, which had to do with the pipeline Central Asia 'Center' gas pipeline capacity.⁵⁰ The contract was to purchase 40 bcm of gas from Turkmenistan and then 30 from Gazprom, yet what made this deal impossible, was the fact that the pipeline capacity was only for 45-50 bcm, which meant that Russia would use its monopoly to sell their gas and lower the flow of Turkmen gas to the West⁵¹.

⁴⁸ Michael Fredholm, Natural-Gas Trade between Russia, Turkmenistan, and Ukraine. *Agreements and Disputes* (Stockholm University:Asian Cultures and Modernity Research Report 15, 2008).

⁴⁹ Global Witness, *It's a Gas: Funny Business in the Turkmen-Ukraine Gas Trade* (Washington, DC: Global Witness Publishing, April 2006,) 26.

⁵⁰ Gazoprovod Centralnaya Aziya- 'Centr': Mingas.ru

⁵¹ Soglashenie mezhdru Rossiey I Turkmenistanom o sotrudnechestve v gazovoy otrasli, Moskva, Kreml', April 10, 2003 (at Ministry of Foreign Affairs web site, ww.in.mid.ru)

3.4 Beyond Energy Politics

Turkmenistan's approach to Foreign Policy towards Russia has been drastically different from the other former Soviet Union Central Asian states. While other Eurasian states preferred being under Russian protection umbrella, Turkmenistan's leaders chose a more dangerous route. In the first years of independence the main objective that Niyazov had was to completely free his state from all the Russian influence so that he would be able to control his country's natural gas reserves without any Russian influence. Even when there was a security threat in Afghanistan, Turkmenistan sought to negotiate with the Taliban and partially with US rather than seeking assistance from Russia. The status of 'permanent neutrality' gave Turkmenistan the grounds for isolationism from the international community. They have illustrated this position by not allowing Russia to participate in the 1996 Central Asian Summit and later by refusing to become a member of the Russian headed CIS organization.⁵² The dispute on the legal status of the Caspian sea was another issue in which Turkmenistan was not willing to comply with Russia and their allies to their disadvantaged position in the coast of the Caspian.

(a) Russo-Turkmen Gas Contracts before 2009: *Volumes*

In order to contain Turkmenistan from selling their gas abroad, Russia had negotiated on a series of contracts which in the short term gave them a better deal than they had before. According to the official MFA estimates the long-term bilateral agreement of 2003 has been structured as the following⁵³:

⁵² Rumer, Boris Z. Central Asia and the new global economy. ME Sharpe, 2000.

⁵³ Soglashenie mezhdru Rossiey I Turkmenistanom o sotrudnechestve v gazovoy otrasli, Moskva, Kreml', April 10, 2003 (at Ministry of Foreign Affairs web site, ww.in.mid.ru)

2006	10 bcm
2007	60-70 bcm
2008	63-73 bcm
2009- 2028	70-80 bcm

Table 3.1: Russian-Turkmen bilateral Agreement: Volume

The graph above illustrates the amount of bcm that Moscow had agreed to purchase starting from 2006. I have specifically selected the date starting from 2006 due to the significant changes (when compared to earlier years) in demand and gas purchase.

	1980	2004	2010	2015	2030	2004- 2030
Russia	n.a	420	469	503	582	1.3
<i>European Union</i>	n.a	508	560	609	726	1.4

Table 3.2: World Primary Natural Gas Demand Scenario in bcm (2006)

As the table 3.2 clearly shows, starting from 2004 to 2010, European demand has increased by 52 bcm in total and Russia's own demand has increased by 49 bcm during the same period. According to the same year World Energy Outlook report, the supply of the European Union at that time was -214 bcm which meant that Russia needed an additional supply source that Turkmenistan was willing to provide. As I have mentioned in the previous paragraph, even though Russia was aiming to purchase a maximum of 80 bcm between 2009-2028, in reality, due to the low capacity of the pipeline network (which could only carry up until 40 bcm per year), it had to nevertheless limit their purchases. In

fact, according to the estimates Russia has never imported more than 45 bcm in spite of the initial agreement.⁵⁴

3.5 Russo- Turkmen Gas Contract before 2009: *Prices*

Although Russia has increased the amount of gas it was buying from Turkmenistan, the pricing has been a long standing issue for Ashgabat. There are several reasons that made the pricing procedure rather complicated, first, in the beginning the gas trade continued with the old pricing system and Turkmenistan didn't have enough to renegotiate the price that had been set, and second, the transition process gave Russia an advantage to set their own price to their FSU partners. Russia's main strategy was buying Turkmen gas for less money and reselling this gas to Europe for much higher price. In 2004, with the increasing oil and gas demand in Europe there was a dramatic increase in gas prices.⁵⁵ Considering the dramatic changes in market, Turkmenistan sought this opportunity to renegotiate the gas prices with Russia. In the first round of the negotiations, Ashgabat's first demand was that Moscow was to pay twice of the initial price and in cash instead of partial barter. In the beginning, neither Russia nor Ukraine was willing to increase the price, and so the result Turkmenistan had to cut their gas deliveries on December 31, 2004. Due to the high European demand Russia had to negotiate to fulfill the supply gap which has led to the new adjusted pricing scheme for Turkmen gas as illustrated. (Table 3.3)

<i>Supply Periods, year</i>	<i>Gas supply price, US\$/ tcm</i>
2005	44 (in cash)
2006	65
2007	100
2007 (November)	130
2008- 2009	150

Table 3.3: Gas Supply Prices from Turkmenistan to Russia 2005-2009

⁵⁴ Vasánczki, Luça Zs. "Gas exports in Turkmenistan." *Paris, Ifri* (2011).

⁵⁵ Michael Fredholm, Natural-Gas Trade between Russia, Turkmenistan, and Ukraine. *Agreements and Disputes* (Stockholm University:Asian Cultures and Modernity Research Report 15, 2008).

3.6 Economic Crisis of 2009

After the European Union released its 'Second Strategic Energy Review' in 2008, Russian foreign and domestic gas demand started to decline rapidly.⁵⁶ Some authors claim that Russian- Ukrainian gas disputes have played a significant role in the European decision to diversify their energy routes, leading them negotiate with the countries such as Libya and Algeria. This meant that Russia could no longer maintain the capacities and the prices that it had agreed upon with Turkmenistan in 2008 and earlier.⁵⁷ On April 11 2009, Turkish news agency Hurriyet reported that there was a pipeline explosion on the Dowletabad-Dariyalyk (CAC-4) pipeline on the Turkmen-Uzbek border; this was the pipeline that had been transferring Turkmen Gas to Russia⁵⁸. According to the reports provided by Turkmenistan's Ministry of Foreign Affairs the reason for the explosion was the dramatic drop in gas demand, which the Russian side 'irresponsibly' cut without notifying Turkmen side. Ashgabat failed to control the pipeline pressure which led to the rupture of the pipeline⁵⁹. This became a critical juncture in Turkmen-Russian gas relations transforming the further gas trade scenario between the two countries.

3.7 New wave of Turkmen-Russian relations 2009-2016

It took two sides almost nine months to settle the gas argument; the final agreement was made only towards the end of the year (22 December 2009), which meant that the trade could be resumed from the beginning of the next year.⁶⁰ After the incident, Gazprom could now dictate its own rules just like it had after the collapse of the Soviet Union. The negotiation terms that were unilaterally imposed on Turkmenistan illustrate one of the

⁵⁶ Horák, Slavomír. "Turkmenistan's Shifting Energy Geopolitics in 2009-2011." *Problems of Post-Communism* 59, no. 2 (2012): 18-30. doi:10.2753/ppc1075-8216590202.

⁵⁷ Ibid

⁵⁸ Hurriyet Archive "Turkmenistan Blames Russia for pipeline blast", from Reuters April 11, 2009 Retrieved from: <http://www.hurriyet.com.tr/turkmenistan-blames-russia-for-pipeline-blast-11409332>

⁵⁹ Bruce Pannier, Pipeline Explosion Raises Tensions between Turkmenistan, Russia, April 14, 2009. Retrieved from: https://www.rferl.org/a/Pipeline_Explosion_Stokes_Tensions_Between_Turkmenistan_Russia/1608633.html

⁶⁰ Vasánczki, Luča Zs. "Gas exports in Turkmenistan." Paris, Ifri (2011).

major issues in the bilateral agreement, which is the reliability of the sides. Russia has proposed two scenarios from which Turkmenistan could choose:

- *First scenario:* volumes of exports would remain the same, but the price would be cut by 40 percent.⁶¹
- *Second scenario:* prices would remain the same; the exports would be cut by 80 percent.⁶²

After the round of negotiations, Turkmenistan was able to get a relatively fair deal, 30 bcm of gas would be delivered through the long term contract between 2010-2028.⁶³ On the price side, Turkmenistan was able to negotiate the number close to EU market prices, which in 2010 was 250 USD per tcm.⁶⁴ The exports resumed in the beginning of January 2010, estimated exports were about 11 bcm for that year.⁶⁵ From that day Russian-Turkmen gas imports have been transformed in following way:

Years	2010-2014	2015	2016
Bcm	10-11	4	0

Table 3.4: Changes in Export Scenario between Russia and Turkmenistan 2014-2016⁶⁶

In 2015 the European gas market was continuing its successful progress towards the efficient use of energy by switching to the renewable energy market and by starting to decrease its energy dependency on Russia. Consequently, there was a fall in Russian

⁶¹ Bruce Pannier, "Medvedev Brings a Strong Hand to Gas Negotiations with Turkmenistan", Radio Free Europe Liberty, 22October,2010.Retrievedfrom:

https://www.rferl.org/a/Medvedev_Brings_A_Strong_Hand_To_Gas_Negotiations_With_Turkmenistan/2196378.html

⁶² Vasánczki, Luça Zs. "Gas exports in Turkmenistan." Paris, Ifri (2011).

⁶³ Ibid

⁶⁴ Michael Fredholm, Natural-Gas Trade between Russia, Turkmenistan, and Ukraine. *Agreements and Disputes* (Stockholm University:Asian Cultures and Modernity Research Report 15, 2008).

⁶⁵ Ibid

⁶⁶ Exeter Central Asian Studies Network 2016

supply to the European gas market. This meant that Russia didn't need Turkmen gas anymore. As a result of the significant oil price drop in December 2015, Russia lowered its purchases from Turkmenistan to 4 bcm per year.⁶⁷The same year Russian Gazprom filed a lawsuit against Turkmenistan in the arbitrary court of Stockholm over the gas prices.⁶⁸ Several news agencies have speculated that Russia demanded that Turkmen gas reimburse 5 billion dollars to Gazprom for the losses it suffered from falling prices and a decrease in demand to Europe.⁶⁹

In January 2016, Interfax reported on the termination of Gazprom's contract with Turkmen State Concern.⁷⁰ Russian side blamed Turkmen government of serious violations of the bilateral agreement and for the first time was asking for the retroactive revision of the gas trade of the two countries contracts between 2010-2015. According to Bruce Pannier⁷¹ there was a political motive behind the termination of the contract. However, due to transparency issues between the two states, we can only speculate about the reasons behind this termination. Since 2016, there have been no significant changes in the bilateral gas trade between Turkmenistan and Russia.

To conclude, it could be said that with the current state of European gas demand the possibility of cooperation between Turkmenistan and Russia seems highly unlikely. Another factor which makes Russian Gazprom unattractive is the irregularity of Russia as a gas partner. On the other hand while Russia has been a long standing gas partner for Turkmenistan, the state lost from this dispute amounts only 4 bcm of the total profit which

⁶⁷ Ibid

⁶⁸ Pannier.B "The End Of The (Gas Pipe-) Line For Turkmenistan" Radio Free Liberty. Retrieved from: <https://www.rferl.org/a/turkmenistan-gas-pipeline-china-berdymukhammadov-iran-russia/28353522.html>

⁶⁹ Michael Fredholm, Natural-Gas Trade between Russia, Turkmenistan, and Ukraine. *Agreements and Disputes* (Stockholm University:Asian Cultures and Modernity Research Report 15, 2008).

⁷⁰ Ibid

⁷¹ Bruce Pannier, "Medvedev Brings a Strong Hand to Gas Negotiations with Turkmenistan", Radio Free Europe Liberty, 22October,2010.Retrievedfrom: https://www.rferl.org/a/Medvedev_Brings_A_Strong_Hand_To_Gas_Negotiations_With_Turkmenistan/2196378.html

can potentially be mitigated by other alternative routes. Consequently, the termination of the contract in 2016 has only strengthened Turkmenistan's plans to diversify its gas routes towards Eastern direction.



CHAPTER 4

Iran's Gas Demand and Gas Trade with Turkmenistan

4.1 Geopolitics of the two countries

Following the collapse of the Soviet Union, Iran became one of Turkmenistan's major partners in the Energy cooperation. The two countries have been able to establish stronger relations as compared to any other Central Asian states. Geopolitically, Iran plays an important role due to fact that it shares a common state border with Turkmenistan which is about 1000 km long, making the trade relations easier due to the availability of land transportation.⁷²



Map 4.1: Map of Turkmenistan

⁷² Parkhomchik L, Simsek H.A and Kanapiyanova Z, "Turkmenistan-Iran Energy Cooperation." *Eurasian Research Institute*, July 07, 2015. Accessed July 13, 2015. <http://eurasian-research.org/>

Another geopolitical advantage shaping Turkmen-Iran trade relations is the fact that the capital city Ashgabat is located very close to the Iran border (see map 4.1) making railroad transit easier.

4.2 Turkmenistan-Iran Cooperation

The first decade after the disintegration of the Soviet Union, Turkmenistan was desperately seeking for alternative routes for their gas exports. The first steps of cooperation with Iran started with the transmission of electricity and the building of the electricity grid, which was the only grid that started to provide electricity to the Northern provinces of Iran. Gas exports were also within the scope of the Energy cooperation between the two countries. In the beginning of 2000s, Iran began to import gas from Turkmenistan to the northern part of the country.⁷³ Iran soon became one of the vital energy partners of Turkmenistan. In 2015 when Russia decreased its purchases from 11 bcm to 4 bcm, Turkmenistan's dependency on Iran as the gas importer increased. As a result Iran became the second major importer of Turkmen gas.⁷⁴

4.3 Turkmenistan-Iran Gas Pipelines

There are a total of two pipelines that connect Turkmenistan and Iran. These two pipelines provide access to the energy for the Northern region of Iran where there are substantial shortages in energy sources and a lack of internal gas infrastructure. The Korpeje-Kurkui pipeline was launched in 1997 with a total capacity of 8 bcm per year.⁷⁵ According to the Eurasian Research Institute, this pipeline was the first successful project that provided Turkmenistan with an alternative energy route aside from the Russian pipeline network. Since then the gas trade of the two countries has been increasing. It

⁷³ Ibid

⁷⁴ Atai Ferhad and Hamidreza Azizi. "The Energy Factor in Iran - Turkmenistan Relations." *Iranian Studies* 45, no. 6 (October 15, 2012): 745-58. doi:<http://dx.doi.org/10.1080/00210862.2012.726877>

⁷⁵ Parkhomchik L, Simsek H.A and Kanapiyanova Z, "Turkmenistan-Iran Energy Cooperation." *Eurasian Research Institute*, July 07, 2015. Accessed July 13, 2015. <http://eurasian-research.org/>

became clear that the cooperation between the two parties was solely based on the mutual energy interest. Due to the successful launching of the first pipeline and the seemingly satisfactory agreement of 1997, the two parties decided to launch a second pipeline in response to the rising demand in the Northern provinces of Iran. In 2010, 182 km long Dauletabad-Sarakhs-Khangiran gas pipeline was launched.⁷⁶ Initially, the total capacity of the pipeline was 12 bcm per year. After the additional compressor was added the pipeline, the capacity increased up to 20 bcm annually by December 2013.⁷⁷ According to the contract Iran was supposed to buy 14 bcm of gas per year, though the reports say that Turkmenistan has only supplied about 7.5 bcm of gas to Iran in 2013 and 2014.⁷⁸ The following graph illustrates the import and export gas scenario of Iran until 2014⁷⁸:

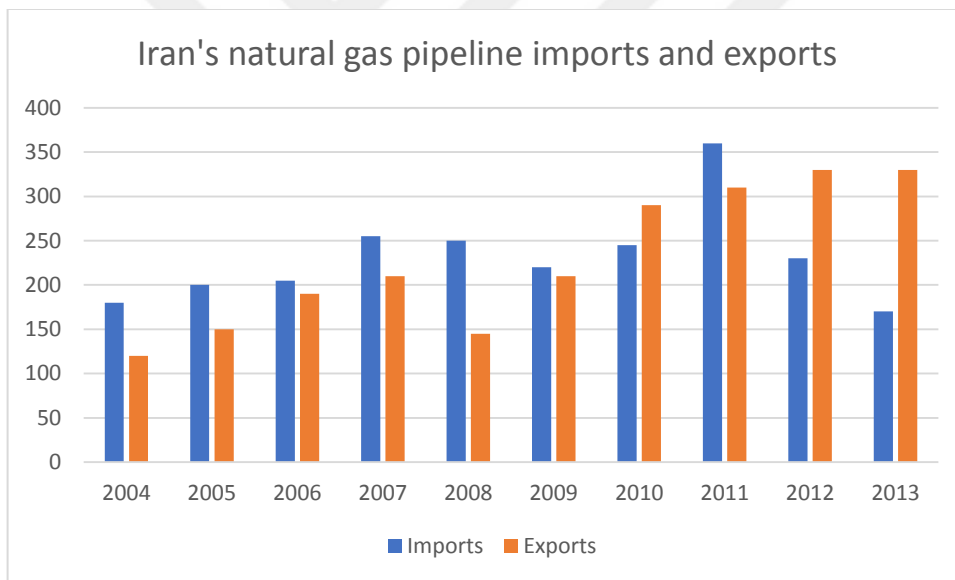


Figure 4.1: Iran’s natural gas pipeline imports and exports

⁷⁶ Parkhomchik L, Simsek H.A and Kanapiyanova Z, "Turkmenistan-Iran Energy Cooperation." *Eurasian Research Institute*, July 07, 2015. Accessed July 13, 2015. <http://eurasian-research.org/>

⁷⁷ Ibid

⁷⁸ The data after 2014 no official sources are found.

As we can see from the figure 4.1, the gas import of the country has been increasing from 2009 to 2013. With the launch of the second pipeline we can see that in 2011 the gas imports have been the highest and in 2012 and 2013 it started to fall. There is only one explanation behind the decrease in the gas imports of the country when Turkmenistan’s capacity was increasing. One of the key reasons for the low level of imports is the economic sanctions imposed against Iran.⁷⁹ The figure 4.2 is illustrating the economic sanctions pattern in Iran starting from January, 2011.

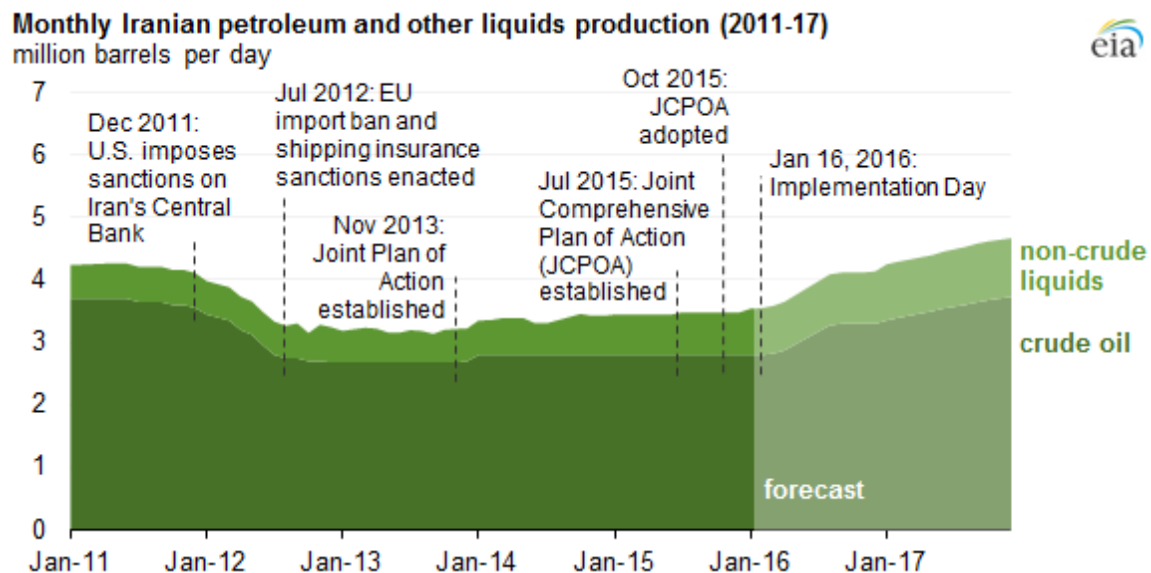


Figure 4.2: Monthly Iranian petroleum and other liquids production

After the US imposed economic sanctions on the Iran’s Central Bank in 2011 it also disconnected Iranian banks from the International Transaction system, SWIFT. This meant that Iran could no longer make international transfers from its national savings.⁸⁰ Inability to pay because of the frozen bank accounts have transformed into National debt. According to estimates the debt that Tehran owed Turkmenistan was more than 1 billion

⁷⁹ U.S. Energy Information Administration, “Short-term Energy Outlook 2016”: Iran’s Petroleum Production Expected to increase after sanctions are lifted. Retrieved from <https://www.eia.gov/todayinenergy/detail.php?id=24592#>

⁸⁰ Ibid

USD in 2013, which started to create tensions that resulted in current gas scenario between the two states.

4.4 Gas Prices

The lack of transparency on the gas trade prices makes it difficult to foretell the dynamics of the gas import-export strategies between the two countries. Even though Turkmenistan-Iran gas negotiations are kept secret, Iranian media outlets argue that according to the agreements of 2005 the prices were approximately \$75 per tcm. According to the Azerbaijani media outlets, Iran has paid Turkmenistan \$515 tcm during 2013.⁸¹ Despite these figures, one of the main challenges that we face when understanding the trade dynamics between the two is the barter side of the agreement that we don't have any estimates for. Iran's state officials have claimed that the half of the price have been already paid through barter of goods.⁸² Even though it is known that Turkmenistan has been pressuring Iran to pay its debts, we don't know the exact amount of the barter included in the unofficial deal and the amount of cash that Iran owed Turkmenistan since the installment of sanctions on the state.

4.5 Current gas Trade dynamics

In the beginning of 2016 the sanctions that had been imposed on Iran for the past decade were lifted.⁸³ For Turkmenistan this meant that the debt of more than 1 billion USD that Iran owed Ashgabat would soon be paid (at least that is what Turkmen officials have been expecting). On December 31, on the New Year's Eve a number of news agencies reported that Turkmenistan had halted their gas exports to Iran.⁸⁴ The next day Turkmenistan's Ministry of Foreign Affairs confirmed that TurkmenGaz had suspended

⁸¹ Azer news "Turkmenistan deals with Iran regrading gas cooperation" Retrieved from: https://www.azernews.az/oil_and_gas/

⁸² "Turkmenistan Limits Natural Gas Supplies Overseas" published by Reuters, Retrieved from: <http://www.reuters.com/article/us-iran-turkmenistan-gas-violation-idUSKBN14N1T9?il=0>

⁸³ Katzman, Kenneth. "Iran sanctions" Current Politics and Economics of the Middle East 5.1 (2014): 41.

⁸⁴ Putz, Catherine. "Gas Spats: Turkmenistan Tangles With Iran." The Diplomat. January 10, 2017. <http://thediplomat.com/2017/01/gas-spats-turkmenistan-tangles-with-iran/>.

exports due to the ongoing payment dispute.⁸⁵ Turkmenistan's officials claimed that the total amount of debt that Iran owes Turkmenistan has exceeded 4.5 billion USD. On the other hand, Iran national Gas Company claimed that the inability to pay this debt was mainly due to the sanctions imposed since 2011. Moreover, Iran's officials have also claimed that they have paid more than a half of their debt through goods and services.⁸⁶ Both of the sides have applied to arbitrary courts and up until now the dispute have not been settled.

Conclusion:

To conclude this chapter, it could be said that Iran has been a vital partner in Energy Cooperation with Turkmenistan. Moreover, the lifting of sanctions has opened up possibilities for the future prospects of new energy projects between the two countries. Notwithstanding the current disputes between the two sides, I believe that the probability of the permanent termination of the gas contracts between the two states is relatively low. This projection can be made mainly due to Turkmenistan's decrease in total number of gas exports which was caused by the termination of Gazprom's contract. Furthermore, since Turkmenistan remains the only alternative for Iran to supply its Northern provinces with gas, makes Iran willing to maintain good relations with its neighbor. As a result we can expect a resolution that will serve the mutual benefit and continue the symbiotic relationship between the two neighboring countries.

⁸⁵ "Turkmenistan halts gas exports to Iran." Oil and Gas Journal, January 04, 2017.

⁸⁶ Parkhomchik L, Simsek H.A and Kanapiyanova Z, "Turkmenistan-Iran Energy Cooperation." *Eurasian Research Institute*, July 07, 2015. Accessed July 13, 2015. <http://eurasian-research.org/>

CHAPTER 5

Turkmenistan and the Caspian Sea

In the early 1990's when the post-Soviet Caspian states started to gain their independence, the dispute on Caspian status became a salient topic for the littoral states⁸⁷. With the formation of four newly emerged Caspian states, each of them started to form their own opinion about the future of the Caspian basin. During the time when Turkmenistan was a part of USSR, the republic wasn't really interested on the broader status of the Caspian unlike Azerbaijan whose proven oil and gas reserves were discovered during Soviet geological explorations.

The first division of Caspian took place in 1970.⁸⁸ Before that there had been two agreements on the status of the Caspian signed between the Soviet Union and Iran in 1921 and 1940, respectively.⁸⁹ This division took a rather symbolic character than a practical one, since four of the countries at that time were part of a single republic.⁹⁰ The newly emerged post-Soviet Caspian states (with the exception of Russia) declared non-recognition of the previous legal contracts signed in a bilateral manner between Iran and the Soviet Union.⁹¹ Following the collapse of the Soviet Union in the beginning of 1990's there have been a number of negotiation rounds to determine the legal status of the Caspian.⁹²

⁸⁷ Goldwyn, David L. Olcott, Martha Brill Nanay, Julia Stauffer, and Thomas R. "THE CASPIAN REGION AND THE NEW GREAT POWERS." Middle East Policy, October 1, 2000.

⁸⁸ Croissant, Michael P., and Aras, Bülent. *Oil and Geopolitics in the Caspian Sea Region*. Westport, Conn.: Praeger, 1999.

⁸⁹ Janusz-Pawletta, Barbara. *The Legal Status of the Caspian Sea Current Challenges and Prospects for Future Development*. Berlin: Springer Berlin, 2016.

⁹⁰ Mamedov, Rustam. "International Legal Status of the Caspian Sea: Issues of Theory and Practice." *The Turkish Yearbook of International Relations* 32 (2001): 218-58.

⁹¹ Ibid

⁹² Ibid

5.1 How did it start?

The question on whether the Caspian Sea is sea or a lake has been disputed for more than two decades. The reason why Caspian legal status plays a crucial role is if it is accepted as a sea, the UNCLOS has to be applied.⁹³ On the other hand if the Caspian is accepted as a lake then the issue will become even more controversial, taking into consideration the non-existence of international law on the status of lakes. Mamedov (2002) in his chapter has divided these negotiation rounds into three stages; the investigation period (1991-1994), the brainstorming period (1995-1999) and the last period, from the time Putin came to power up until now⁹⁴.

- i. *First round of negotiations:* It could be argued that the first round was mainly led by Iran.⁹⁵ During that time Russia remained inactive and took the role of an observer rather than an active participant, which gave other Caspian states an opportunity to openly express their opinions regarding the division of the Caspian⁹⁶. Iran also saw this as a chance to propose the creation of the Organization of the Caspian States Cooperation under the ECO (Economic Cooperation Organization). The purpose of this organization was to promote the multilateral cooperation regarding the trade matters (fishing, marine security etc.) of the Caspian. In the first round Turkmen delegation applied their isolationist strategy illustrating utter indifference towards the issues that were discussed in the conference.⁹⁷

- ii. *Second round of Multilateral Negotiations:* In this stage the international community expressed their support for the determination of the legal status of Caspian.⁹⁸ The main

⁹³ According to United Nations Convention on the law of the Sea 12 nautical miles rule has to be applied for each shore of the littoral state.

⁹⁴ Mamedov, Rustam. "International Legal Status of the Caspian Sea: Issues of Theory and Practice." *The Turkish Yearbook of International Relations* 32 (2001): 218-58.

⁹⁵ Mamedov, Rustam. "International Legal Status of the Caspian Sea: Issues of Theory and Practice." *The Turkish Yearbook of International Relations* 32 (2001): 218-58.

⁹⁶ Ibid

⁹⁷ Ibid

⁹⁸ Ibid

objective in the second stage negotiation was the Russian led project ‘On preservation and use of biological resources in Caspian.’⁹⁹ The topics on boundaries of fishery and preservation of bio-diversity in the Caspian were essential topics of discussion in this round.¹⁰⁰ Nevertheless, the agreement was not signed, due to the fact that Azerbaijan did not agree upon the 20 mile fishery zone as a result which the finalization of the agreement was postponed for further discussion.¹⁰¹ It should be noted that Turkmenistan didn’t attend the last round of meetings. I think that the main reason why Turkmenistan took some of the meetings for granted was the difficulty the leadership faced in selecting their grand strategy on their role in the region. The inability of the Caspian leaders to negotiate in a multilateral manner has resulted in a number of bilateral agreements. As a result, the conclusion of the second round brought even more controversies in terms of the Caspian Status which prolonged the debate on the Caspian to the third round.

- iii. *Third round of multilateral cooperation:* When Putin came to power, as a first step he expressed his special interest in the Caspian region¹⁰². As a second step, he appointed Kaluzhnyy (ex-head of Gazprom) as a special permanent representative of the President in the regulation of the Caspian dispute.¹⁰³ Putin took a pragmatic approach in solving the Caspian dispute suggesting the sea should be divided into national sectors.¹⁰⁴ Putin’s attempt to solve this issue very quickly resulted in more controversies, thereby prolonging the negotiation process even further.

As for today, the recent negotiation process has not brought any substantial changes that could help solve the problem of Caspian’s legal status.

⁹⁹ Mamedov, Rustam. "International Legal Status of the Caspian Sea: Issues of Theory and Practice." *The Turkish Yearbook of International Relations* 32 (2001): 218-58.

¹⁰⁰ Ibid

¹⁰¹ Ibid

¹⁰² Saivets. Carol.R “Putin’s Caspian Policy”, Policy Brief; Caspian Studies program, Published on October 2000, Retrieved from: <http://www.belfercenter.org/publication/putins-caspian-policy>

¹⁰³ Akiner, Shirin. *The Caspian: politics, energy and security*. Chapter 11: *Turkmenistan's Caspian resources and its International political economy*, London: Routledge Curzon, 2004. Print.

¹⁰⁴ Ibid

5.2 Caspian Reserves

The last report on hydrocarbon reserves in the Caspian was published by EIA in 2012. According to the estimates published by EIA there were a total of 7.6 bcm of oil and around 8.3 trillion cubic meters of gas reserves surrounding the Caspian Sea area.¹⁰⁵ The 2012 report by EIA is the only special report published by the Agency on the Caspian region. There are no other official reports as of yet. According to EIA, most of the proved natural reserves are mainly located in South of the Caspian Basin¹⁰⁶. Due to the fact that the legal status of the Caspian is still not resolved, the offshore exploration in the area is limited.¹⁰⁷ According the explorations by Turkmen geologists and US Western Geco the estimated amount of gas reserves in early 2000's were 6.5 trillion cubic meters¹⁰⁸. This means in 12 years the capacity of proven reserves has increased by 1.8 tcm. The distribution of proven and probable offshore reserves combined per country is illustrated in the table above.

Caspian proven and probable offshore reserves as of 2012		
Country	Crude oil condensate (billion bbl)	Natural gas (trillion cf)
Azerbaijan	6.8	51
Iran	0.5	2
Kazakhstan	15.7	36
Russia	1.6	14
Turkmenistan	1.1	9
TOTAL	25.7	112

Sources: US Energy Information Administration, IHS EDIN, Eastern Bloc Research Energy Databook 2012).

Figure 5.1: Caspian Reserves¹

¹⁰⁵ Lukin.O “The future for gas in Turkmenistan’s portion of Caspian” published on July 2011. Retrieved from: <http://legacy.interfaxenergy.com/natural-gas-news-analysis/russia-and-the-caspian/the-future-for-gas-in-turkmenistan%E2%80%99s-portion-of-the-caspian-sea/>

¹⁰⁶ “Oil and natural gas production Is growing in Caspian Sea region” September, 2013 published by: EIA

¹⁰⁷ Ibid

¹⁰⁸ Lukin.O “The future for gas in Turkmenistan’s portion of Caspian” published on July 2011. Retrieved from: <http://legacy.interfaxenergy.com/natural-gas-news-analysis/russia-and-the-caspian/the-future-for-gas-in-turkmenistan%E2%80%99s-portion-of-the-caspian-sea/>

One of the offshore fields near village Kyyanly in Turkmenbashi (next to the Caspian) is known as Magtymguly. The Malaysian company Petronas started the gas treatment on that field in 2011. According to Lukin's (2011) report, the annual capacity of this gas field was about 5 bcm with the potential of being expanded via compressors to 10 bcm¹⁰⁹. As of 2012 according to the table above the proven and probable offshore natural gas reserves in total is estimated to be 112 trillion cubic feet. The highest reserves in the Caspian belong to Kazakhstan with a total of 36 tcf of proven and probable reserves, while Turkmenistan sums up only to 9 tcf of gas in the region¹¹⁰. In the comparative terms Russian total reserves are estimated at 1,688 trillion cubic feet as for January 2015¹¹¹.

The chapter on Caspian illustrates the significance in terms of current and potential reserves. When compared to the energy giants like Russia the 112 trillion feet is not a small number. Moreover what makes Caspian more attractive is not only the amount of reserves it possesses, but the geographical location. Being a bridge between Central Asia, Caucasus to Europe makes the basin an important alternative for seeking a new energy supplier to Europe. However due to the fact that Turkmenistan is located across the Caspian makes it impossible for Turkmenistan to send their gas resources independently hence, the only way for Turkmenistan to export across the Caspian is to make a deal with Azerbaijan, the attempts on negotiations between the two parties are going to be examined in the next part.

5.3 Trans-Caspian Pipeline

The Trans- Caspian pipeline is one of the proposed pipeline routes in the Southern Gas Corridor that was supposed to start from Turkmenistan's Cheleken field, going

¹⁰⁹ Lukin.O "The future for gas in Turkmenistan's portion of Caspian" published on July 2011. Retrieved from: <http://legacy.interfaxenergy.com/natural-gas-news-analysis/russia-and-the-caspian/the-future-for-gas-in-turkmenistan%E2%80%99s-portion-of-the-caspian-sea/>

¹¹⁰ Ibid

¹¹¹ Gazprom "Russian total gas reserves in Caspian basin" Retrieved from: <http://www.gazprom.ru/>

through South Caucasus region and then connecting to Turkey as a transit route (Nabucco route) and finally supplying gas to European Gas market.¹¹²

Initially the idea of Trans-Caspian pipeline was proposed by two USA based companies Bechel and General Electric in 1998.¹¹³ Both EU and Turkey were interested in this project; European Union wanted to limit Russian monopoly on gas imports to EU and Turkey on the other hand wanted to fulfill their rising gas demand with affordable gas route. Both USA and Turkey have agreed to provide the project with the necessary support in terms of the financing. As a result, a 30 year agreement was signed between Turkey and Turkmenistan in 1999. While the project seemed feasible at the time, the discovery of Shah Deniz field provided Turkey with a cheaper alternative for Turkish gas import which making inclusion of Turkmen gas expensive and disadvantageous.¹¹⁴

Russia's response to these negotiations was the proposal of an alternative route bypassing the Baltic Sea, the Nord Stream pipeline.¹¹⁵ The total capacity of the stream was projected to 55 bcm of gas per year.¹¹⁶ The pipeline was successfully launched in 2011 with the joint venture of Gazprom, Wintershall and Uniper supplying Europe without being dependent on Ukraine as a transit country. According to Gazprom reports after the examination on the feasibility in 2012, Nord Stream 2 is projected to be put in to operation sometime before late 2019.¹¹⁷

Despite the fact that the Nord Stream project was signed in 2000, the first negotiation process on Nabucco began in 2002. Following negotiations Ukraine-Russian dispute took place in 2006 (when Russia cut its gas supplies to Europe in the middle of

¹¹² Kalyuzhonova. Y, Jaffe.M. A, Sickles. C.R, Energy in the Caspian region: present and future. Place of publication not identified: Palgrave Macmillan, 2014.

¹¹³ Ibid

¹¹⁴ Ibid

¹¹⁵ Gazprom "Nord Stream Pipeline" project, retrieved from: <http://www.gazprom.com/>

¹¹⁶ Gazprom "Nord Stream Pipeline" project, retrieved from: <http://www.gazprom.com/>

¹¹⁷ Ibid

winter) made the South Stream project even more attractive.¹¹⁸ According to estimates, the total capacity of Nabucco pipeline would be about 31 bcm per year, which only equals to 1 percent of European total demand. The map below illustrates the complete picture of the South stream project.



Map 5.1: South stream pipeline¹¹⁹

The Nabucco project has been officially aborted in 2013 with the decision of the Azerbaijani officials. However from the reports the fate of Nabucco has been determined earlier in 2011, when the Shah Deniz Consortium excluded the whole big Nabucco project due to the lack of available gas for transit which had to be up to 31 bcm.¹²⁰ On the other

¹¹⁸ Baran, Zeyno. "Security Aspects of South Stream project."

[http://www.europarl.europa.eu/thinktank/fr/document.html?reference=EXPO-AFET_NT\(2008\)388962](http://www.europarl.europa.eu/thinktank/fr/document.html?reference=EXPO-AFET_NT(2008)388962). October 2008. Accessed April 2017.

¹¹⁹ Heritage Foundation, Retrieved from: <http://www.heritage.org/asia/report/the-proposed-iran-pakistan-india-gas-pipeline-unacceptable-risk-regional-security>

¹²⁰ EIA: Special report on Caspian, Retrieved from: <https://www.eia.gov/beta/international/regions-topics.cfm?RegionTopicID=CSR>

hand if the demand of Eastern Central Europe will rise after 2020 they would potentially be still interested in Turkmenistan's gas. But since the status of the Caspian hasn't been resolved for the past two decades the feasibility of this pipeline is very limited.

To sum up, it could be said that the Trans-Caspian project under umbrella of greater Nabucco at current stage is not probable. Leaving aside the challenges of technicalities of building the pipeline across the Caspian, one of the major problems that remain is the unresolved legal status of the Caspian Sea. Without the joint agreement of all sides, the dispute is unlikely to be resolved in the near future. As for nowadays, it has been more than two decades since the dispute was first put on the negotiation table. And perhaps it is in this light that Niyazov was right by saying that 'The Caspian smells of blood.'

CHAPTER 6

Scenarios for future geopolitical transition in Turkmenistan

6.1 Ongoing and Future Projects

Since Gazprom's departure from Turkmenistan and the negotiation outcomes with Iran remain unclear, the only country that de facto continues to buy Turkmen gas is China. While China's demands remain high enough for the continued purchasing of gas at a stable rate, there is still a need for the diversification of gas routes so as to prevent future monopolization by China. This chapter will list and classify the alternative gas pipeline projects that could potentially diversify and shift current geopolitical scenarios for Turkmenistan. I will list the desirable projects that Turkmenistan is interested in, and outline the number of factors that tend to prevent these projects from becoming a reality. This chapter will present a total of three alternative pipeline projects that Turkmenistan has hoped to sign following the disintegration of the Soviet Union. This sixth chapter will divide these projects in two categories; the realized projects vs Turkmen dreams. The projects of pipeline routes that are going to be discussed are the following: TAPI, Central Asia- China pipeline (and the updates) and Iran as a potential LNG hub.

6.2 Turkmenistan – Afghanistan – Pakistan – Iran Pipeline (TAPI)

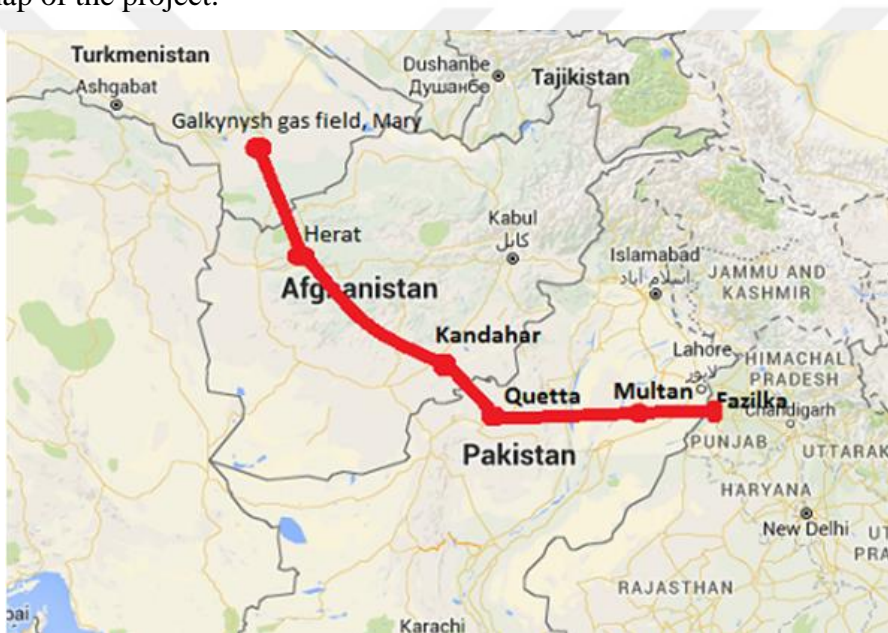
Initially the project was proposed in the mid-1990s. The 1500 km gas pipeline to be constructed from Turkmenistan to Pakistan via Afghanistan, at that time the initiative came from the 'Unocal 74' which is a US based oil company.¹²¹ However according to Bohr (2003)¹²² this company was suspended mainly due to its engagement in the fighting with Taliban- controlled Afghanistan. Author claims that after the disintegration of the Soviet Union, Niyazov retained friendly relations with Taliban mainly due to the inability to

¹²¹ Abbas, Seher. IP AND TAPI IN THE 'NEW GREAT GAME': CAN PAKISTAN KEEP ITS HOPES HIGH? . Report. 4th ed. Vol. 31. 2012.

¹²² Ibid

secure its country on the Afghan-Turkmen border with its own military.¹²³ Then there followed the tragedy of September 11, 2001 and it became clear that Afghanistan needed to be stabilized before this project could be brought to the table of negotiations.

In 2002 when the Taliban was weakened, Turkmenistan sought the opportunity to review the TAPI pipeline project again. The project was planned to start from the Galkynysh field from Mary region with total reserves of 13100 bcm up to Pakistan's network in Multan and continue on to Fazilka in India. The map below illustrates the route map of the project.



Map 6.1: TAPI Pipeline¹²⁴

In 2002, Niyazov proposed this project to UN requesting money to finance this project¹²⁵. The main argument proposed by the leader at that time was that the gas pipeline was ‘the only hope’ for Afghanistan to diversify their economy and decrease its dependence on drug exports.¹²⁶ By the end of the summer of the same year, US agreed to provide the technical support for the project and the World Bank, the Asian Development

¹²³ Kasim, Kemer. Turkmenistan. Ankara: Ataturk Arastirma Merkezi Yayinlari, 2016

¹²⁴ “Turkmenistan breaks ground on ambitious TAPI pipeline”, Dec 2015 Retrieved from: Turkmenistan breaks ground on ambitious TAPI pipeline

¹²⁵ Kasim, Kemer. Turkmenistan. Ankara: Ataturk Arastirma Merkezi Yayinlari, 2016.

¹²⁶ Cummings, Sally N., ed. Oil, Transition and Security in Central Asia. London: Routledge Cruzon, 2003.

Bank and Japanese owned Itochu Company also expressed their interest in financially supporting and providing technical assistance for the project.¹²⁷ Despite the financial assistance, the project hasn't been put in place immediately after the negotiation rounds with UN ended. The death of Niyazov had put hold in the negotiation process.

After Turkmenistan's President Gurbanguly Berdimuhamedov came to power in 2007, he resumed the negotiation rounds. At last, according to the Middle East press the project has been officially resumed and launched on December 2015.¹²⁸ The four leaders of the countries officially signed the launch of 10 billion dollar contract on December 15, 2015.

According to media sources, Turkmenistan will cover almost 85 percent of the total cost of the project.¹²⁹ Out of these approximately 51 percent (out of the 85) will be provided with funds and the rest 34 percent is going to be arranged by different financiers.¹³⁰ Asian Development Bank has already offered 1 billion dollar loan, Islamic Development bank has offered 500 million dollars for the project.¹³¹ Even though the project does seem feasible at first sight there are certain challenges that may change the fate of this project.

Possible Challenges

- i. Security Challenges: Since Niyazov's term, one of the major obstacles that remain in the construction of this project is the instability of Afghanistan. Even though from 2003 there is a reported progress on the stability of the country, it is still difficult to say how stable it actually is. While there are assumptions that Niyazov had friendly relations with Taliban, we cannot be sure of the current's leader's negotiations with the Taliban. But what we do

¹²⁷ Ibid

¹²⁸ Middle East Press "TAPI pipeline", <http://middleeastpress.com/english/>

¹²⁹ 25 - OSCE Academy." Accessed May 30, 2017.

http://www.bing.com/cr?IG=05D6F77E41B744A5A84D1397547EC7BE&CID=34EDE2846F71677A1453E8166E7766B0&rd=1&h=oEdxVjYCRTJhxH_1_9or80hiuR43EWnM7iDsTcEtX2U&v=1&r=http%3a%2f%2fwww.osce-academy.net%2fupload%2ffile%2fPolicy_Brief_25.pdf&p=DevEx,5239.1

¹³⁰ Ibid

¹³¹ Ibid

know from the history is that terrorists tend to target pipelines to send a message. Especially after the recent reports by the opposition of the insurgencies taking place on the Turkmen-Afghan border,¹³² the question of security remains a major obstacle for this pipeline.¹³³

- ii. Pakistan's Domestic insurgency: The guerilla war waged by Baluchistan nationalists against the government of Pakistan in Baluchistan is another threat to the pipeline. Baloch nationalists could also potentially target TAPI to achieve their political means.
- iii. India-Pakistan conflict: India-Pakistan relationship could also potentially become an obstacle for the project. If the disagreement occurs between the two countries this could create greater long-term problems for the implementation of the project.
- iv. Lastly, the security risks may increase the cost of the project. In the early 2000's the cost of the project was estimated to be around 7.5 billion dollars.¹³⁴ During the last course of negotiations it has increased to 10 billion without making additional provisions for security related construction costs. From the financial outline we can see that none of the multinational companies could come to agreement for the finances for this project, after which the leaders decided to launch it with their own resources. This means that security risks mentioned earlier would increase the cost of the project, thereby affecting its feasibility.

To conclude, it could be said while TAPI remains one of the biggest dreams of Turkmen leaders, the above mentioned issues puts the feasibility of the project in doubt.

¹³² "Middle East Press." [Http://middleeastpress.com/english/10-billion-tapi-project-gas-pipeline-launched/](http://middleeastpress.com/english/10-billion-tapi-project-gas-pipeline-launched/), December 14, 2015. Accessed May 17, 2017.

¹³³ "TAPI pipeline: Bigger is not better | Foreign Policy." Accessed May 30, 2017. <http://www.bing.com/cr?IG=05D6F77E41B744A5A84D1397547EC7BE&CID=34EDE2846F71677A1453E8166E7766B0&rd=1&h=ZhZ55sHLK5wNwAw1iPqwsuB3WWWkHW90YCgfk0zMg&v=1&r=http%3a%2f%2fforeignpolicy.com%2f2012%2f06%2f12%2ftapi-pipeline-bigger-is-not-better%2f&p=DevEx,5364.1>.

¹³⁴ "Middle East Press." [Http://middleeastpress.com/english/10-billion-tapi-project-gas-pipeline-launched/](http://middleeastpress.com/english/10-billion-tapi-project-gas-pipeline-launched/), December 14, 2015. Accessed May 17, 2017.

6.3 Central Asia – China Pipeline

In the mid 2000's Russia was trying to do all it can to contain the Nabucco and trans-Caspian pipeline meanwhile China's natural gas demand had been growing. The talks on the construction of this pipeline started in 2006. The Central Asia-China pipeline project was initially divided in to four Lines (A,B,C,D), out of which Line A was launched in December 2009 with the total capacity of 15 bcm per year.¹³⁵ Line B was completed the next year in October 2010 also with the capacity of 15 bcm per year.¹³⁶ According to the agreement with CNPC, the Line C opened in May, 2014. The CNPC official web side reported that in 2015, the exports of the Line C increased to 25 bcm per year.¹³⁷



Map 6.2: Central Asia – China Gas Pipeline¹³⁸

The three lines are indicated on the Map 6.2.¹³⁹ The next plan is to build the two compressors that would increase the capacity of the three lines; however, the total amount of the capacity that is going to be increased is still unknown.

Possible Challenges: Since the pipeline has been already built, there are no significant challenges that could potentially disturb the agreement. The only significant change that has occurred in this pipeline network was back to back delays in the construction of the D line that happened in 2016 and 2017 respectively.¹⁴⁰

¹³⁵ Ze, Ran. PRC-Turkmenistan Natural Gas Pipeline. Report. Beijing: China Energy Netcom Research Center.

¹³⁶ Ibid

¹³⁷ Ibid

¹³⁸ "CNPC in Turkmenistan", Retrieved from: http://www.cnpc.com.cn/en/Turkmenistan/country_index.shtml

¹³⁹ CNPC official website, Retrieved from: http://www.cnpc.com.cn/en/Turkmenistan/country_index.shtml

<http://www.cnpc.com.cn/en/FlowofnaturalgasfromCentralAsia/FlowofnaturalgasfromCentralAsia2.shtml>

¹⁴⁰ Ze, Ran. PRC-Turkmenistan Natural Gas Pipeline. Report. Beijing: China Energy Netcom Research Center.



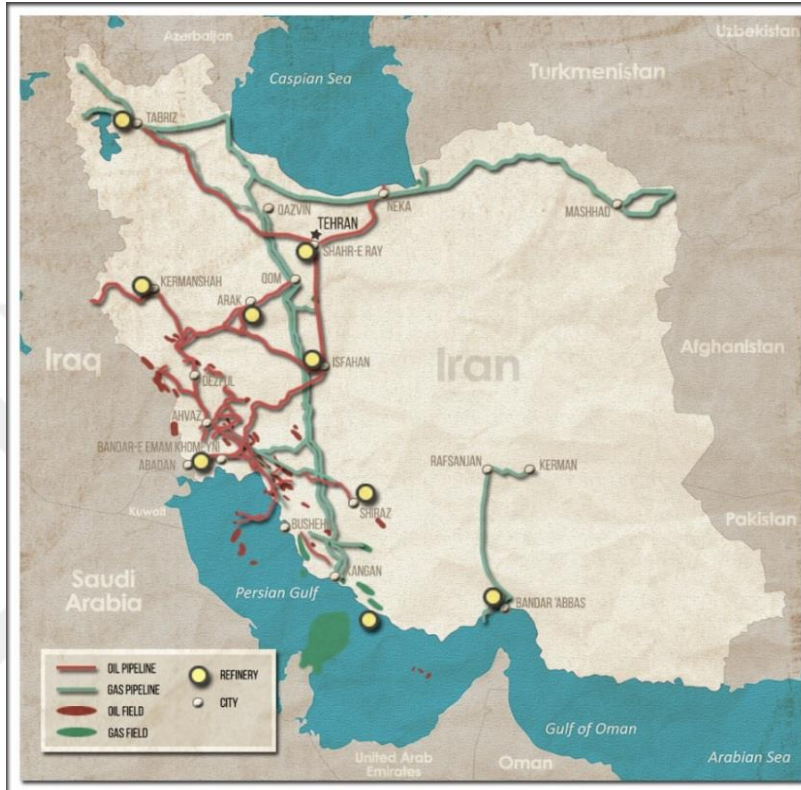
Map 6.3: Central Asia – China Pipeline Lines

As it could be seen from the Map 6.3 the Line D would have completed the pipeline network by extending from Turkmenistan and passing through Uzbekistan- Tajikistan- Kyrgyzstan to China’s Wuqia province. However, with another delay of the project, it now depends on China’s demands and whether or not China would still be willing to continue this project.

6.4 Iran as an LNG Hub

As it has been mentioned in the fourth chapter, Iran imports gas from Turkmenistan from two pipelines from two different gas fields, one of the gas fields that Iran purchases the gas from is Dauletabad field. This pipeline connects to the Northern part of Iran in city called Mashad which is located in the Northern part of Iran. As I have mentioned earlier the Dauletabads field’s total gas reserve is estimated to be 1,200 bcm, and Iran 12 bcm per

year.¹⁴¹ The total capacity of the pipeline after the installation of the compressors is 20 bcm.¹⁴² The Dauletabad- Sarakhs- Khangiran gas field can be seen from the map in the next page.



Map 6.4: Iran Domestic Pipeline Map

Taking into consideration the increasing share of LNG in global gas trade, given the lower cost of liquefaction and LNG transport, one of the possibilities for Turkmenistan and Iran to diversify their routes could be a creation of an LNG hub. The LNG hub would potentially start from Turkmenistan’s Dauletabad field go through Iran’s Mashhad and extend from North to South thus, forming an LNG hub in the Gulf. The map of the pipeline and the hub could be as the following:

¹⁴¹ Atai Ferhad and Hamidreza Azizi. "The Energy Factor in Iran - Turkmenistan Relations." *Iranian Studies* 45, no. 6 (October 15, 2012): 745-58. doi:<http://dx.doi.org/10.1080/00210862.2012.726877>

¹⁴² Jalilvand, David Ramin . "Iran's gas exports: can past failure become success?" *The Oxford Institute for Energy Studies*, June 2013.



Map 6.5: Potential LNG hub

Possible Challenges: First challenge is the issue of finding sponsors interested in potentially financing and contributing to the technical assistance of this project. Since the liquefaction process becoming cheaper and LNG is becoming more affordable than the conventional gas, both China and India would benefit from this hub since there will be no need for the pipeline construction. On the other hand, the construction of the long pipeline from Turkmenistan across Iran to the Gulf will involve substantial investment, apart from ownership of the pipeline and transit agreements with Iran. Moreover, in order for Turkmenistan to enjoy the benefits of an access to LNG export terminal in the Gulf, there needs to be a contractual agreement with Iran in respect to the ownership and operation of such a terminal as part, possibly, of a hub that is fed by Turkmen- Iranian gas jointly.

If China's demand continues to increase, then financing the LNG hub might become more beneficial than constructing another long-term natural gas pipeline. It should be noted that LNG doesn't necessarily bind a country with a long term agreement since it can be transported via water. While the land pipeline infrastructure requires not only commitment but does not allow flexibility of export destination.

Second challenge is the unstable relationship between Iran and Turkmenistan. It is still not clear whether the two countries will come to an agreement after the recent gas cut by Turkmenistan. The end result of the debt dispute between the two countries is an essential element that will determine the viability of this project.

According to some analysts, the third challenge is the 'Maritime piracy'. There have been both reported and unreported attacks by pirates in the Arabian Gulf.¹⁴³ The research on the topic of pirates in the Gulf has already illustrated the severity of the problem. According to reports by maritime police, one of the major threats posed by pirates is blocking access in and out of the Gulf.¹⁴⁴ This involves the possible attacks on the oil cargo ships causing economic loss not only to the supplying side but the purchaser as well.

To sum up, out of the three possible scenarios proposed in this chapter, the project on China is the only project that has already been launched and continues to operate. Iran's project is only a hypothetical one that hasn't been yet put on the negotiation table, and after the lifting of sanctions, Iran's likelihood in engaging in the proposed project is questionable. Finally, while the leaders of TAPI pipeline seem to be very optimistic about the project, I still believe that the issue of security in Afghanistan and Pakistan may result in unforeseen challenges possibly leading to the failure of the project.

¹⁴³ Alqattan, Mohammad E. A., Tim Gray, and Selina M. Stead. "The Forgotten Pirates: Iraqi and Iranian Pirates in the Arabian Gulf Who Have Never Been Reported to the International Maritime Bureau." *Studies in Conflict & Terrorism*, 2017, 1-10. doi:10.1080/1057610x.2017.1300757.

¹⁴⁴ Ibid

CONCLUSION

Natural gas remains a vital source of Turkmenistan's national income which makes the country dependent on the high gas demand of purchasing countries. The purpose of this thesis was to provide an answer for the following questions: The future role of Turkmenistan in the international market for gas, and the factors restraining Turkmenistan from diversifying its natural gas routes. Prior research has mainly focused on factors such as failed institutions, isolationism, regime type and lack of transparency, my research has illustrated that there is another factor that limits the external sales of the gas abroad which is the geopolitics of a given country. From a geopolitical standpoint, there are three major dynamics at play: post-Soviet legacy, neighboring hegemony, and cross national borders. Additionally, this work identifies the handicaps bilateral agreements with major Turkmen gas importing states and revises the future scenarios for potential partners.

The first chapter of this thesis aimed at providing a general overview of the abundance of natural resources in the country. This chapter provided a graphic description of the fully developed and undeveloped gas fields. Additionally, it gave a detailed description of each reserve basin, its location and its total reserve capacity with a view to illustrating, Turkmenistan's natural gas export potential. The last part of this chapter reviewed all major companies that have invested in pipeline constructions and currently are benefiting from gas exports coming from Turkmenistan. The main conclusion to be drawn from the first chapter is the lagging upstream investments that hamper the advantageous exploitation of Turkmenistan's substantial natural gas resources where only two of the existing sixteen gas fields are producing, while the other fourteen remain dormant.

Since China is the major importer of Turkmenistan's gas, this chapter provided a detailed analysis on changes in the energy policies of China and its gradual transformation from coal dependence to cleaner sources of energy in particular natural gas. The aim of the chapter was to explain the transition phase and the introduction of the coal reduction policy in China which has boosted demand for imports of natural gas. I have reviewed

China's own shale gas supplies and have analyzed to what extent it fulfills the country's raising natural gas demand. Arriving at the conclusion that China's own natural gas production is not enough to substitute its coal dependency this chapter has sought to reconsider China's role in the global energy market as a major customer and how renewed role might expand China's importance in the geopolitics of Central Asia and most importantly the geopolitics of Turkmenistan.

Two chapters have been devoted to an analysis of the previous bilateral natural gas trade relations between Russia-Turkmenistan and Iran-Turkmenistan. The two countries were the first energy partners of Turkmenistan starting from the first years following the country's independence. In the chapter on Russia, I discussed the gradual development of bilateral energy relations between the two countries and then, the sharp decline in their bilateral energy cooperation. Chapter three has outlined Russian dominance as the regional geopolitical power in Central Asia and the way Russia has used their geopolitical advantage to eliminate the possibility of rising competition such as Turkmenistan. This chapter argues that even though Russia could easily prevent Turkmenistan from expanding its energy routes to Europe, it has not been able to deter Turkmenistan from exporting its natural gas eastwards, particularly to China.

Iran on the other hand was the first country with whom Ashgabat was able to start bilateral relations on energy cooperation without Russia's direct interference. The success of bilateral relations between these two neighbors was mainly due to the fact that the two are sharing a common border and up until recently the two were able to maintain a symbiotic relationship in terms of energy cooperation. I argue that despite the current tensions between the two parties regarding Iran's outstanding debt to Turkmenistan, the outcome of negotiations will most likely be settled due to Turkmenistan's dependency on Iran's barter goods (mainly agricultural products). Hence, strategically, the resolution of this conflict is important because of the future possibility of the creation of an LNG hub on the Iranian side of the Gulf, fed by pipelines from the Turkmen border through Iran's territory.

The main objective of the chapter on the Caspian was to demonstrate serious, seemingly insurmountable challenges of the Trans-Caspian pipeline project despite the financial support from the European Union offered as a result of the EU's energy security concerns and its intention to reduce its dependence of Russian natural gas imports. While there are several factors that have made this project unfeasible, I mainly focus on the unresolved status of Caspian negotiations that have still been continuing for almost two decades

The last chapter where I consider the future scenarios focuses on the three projects; first projects. The first one is the recently commissioned Central Asia-China pipeline; the second project is the newly signed TAPI pipeline and the third potential project is Turkmenistan natural gas feeding into an LNG hub in the Gulf. For each of these projects I have identified possible challenges that potentially could lead to the failure of the project. The first three strings of Central Asia- China have been completed while the last line is currently delayed by China, which has now access to plenty of LNG delivered at competitive prices to eastern coast. As for the second scenario, despite the formal signing of the contract, the future of the TAPI pipeline remains uncertain, due to the enormous security risks in areas where it is planned to be constructed. It is the third scenario that remains viable, despite serious economic, financial and diplomatic challenges. The viability of this scenario, to create an LNG hub as joint venture between Iran and Turkmenistan, remains to large extent on the continued natural gas demand of China, and later that of India, and on the near-term gas price and availability in the Asian as well as global markets.

From a theoretical standpoint, there are three major dynamics at play with respect to the geopolitical situation of Turkmenistan: post-Soviet legacy, neighboring hegemony, and national borders. The continuation of Russian hegemony after the collapse of the Soviet Union played a major role in determining the bilateral gas trade relations with Central Asian countries, including Turkmenistan. This resulted in Russia's monopolization of the gas trade through its control over post-Soviet pipeline networks. One of the major goals of Russian administration was to exclude Turkmenistan from trading their natural gas with

European countries. This policy reached its peak with unilateral termination of the contract between Gazprom and Turkmenistan, severing all flow of Turkmen gas to the West and turning Turkmenistan's attention to the East, namely China and TAPI pipeline.

China's gradual shift from coal to natural gas coupled with its increasing demand for energy made Turkmenistan an attractive supplier. After Russia left Turkmenistan's energy market, China was already investing in the common Central Asia – China pipeline thus, taking over from Russia as the future regional hegemon.

By way of conclusion, Turkmenistan in its 26 years of independence has had to manage its own natural gas reserves in the face of disadvantaged geopolitical, landlocked position. A lack of access to international water has meant that pipeline routes, notwithstanding the Caspian, had to always pass through other territories therefore leaving it vulnerable to the particular internal dynamics of each country. With respect to its neighbors, Turkmenistan like other countries in the region has had to deal with Russian influence concerning its monopolization of and interference in the gas trade. As for the TAPI pipeline, which has been Niyazov's "pipe" dream since the mid-1990s, security concerns in each of the three countries – namely Afghanistan, Pakistan and India – has so far put this project in doubt. This leaves China as the only viable customer for Turkmen gas in the coming years with the possible expansion of existing projects and the creation of new ones.

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