ABSTRACT

In this article; it is concerned that Turkey is a concessionary country regarding geo-strategic and geopolitical location in Europe, Asia, Middle East, Balkans, Black Sea and Mediterranean, and being future’s East West natural gas passage in carry to European markets natural gases of Caspian region and Middle East which have rich natural gas reserves.

Especially, natural gas crisis occurred between Ukraine and Russia in 2009 January, increased the importance of 4 or 5 projects which are planned in East West natural gas passage. In this passage, Turkey’s status is explained due to the impacts of these projects to Turkey & EU process, the importance in Europe Market and the costs and the routes are fair enough rather than the others.

Joining to EU or not, carrying rich natural gas resources in Caspian and Middle East -generally in Asia-, through Turkey to Western countries in Europe, will provide us valuable incomes. But when we look at Turkey’s positives regarding to joining to EU, natural gas will be the first topic and this is not a coincidence.

Key Words: 1- Nabucco pipeline 2-Energy,
INTRODUCTION

Energy is one of the most necessities of humanity. Especially, in 20th century, necessities as a result of economic developing, industrialization and globalization caused high energy consumption due to alternative studies to prevent nature from harmful using. So the energy is the most important sector to held meetings and agreements to force countries.

Oil and natural gas is the most important things for energy sector that was occurred in nature by natural actions. The animals and plants that lived million years ago left over on the earths cover and were composed as chemically. So, oil and natural gas occurred. These animals and plants are known as organic material collapsed on ground floor and covered by sand and mud. By means of pressure and heat, also radioactivity, they were decomposed and formed as oil, coal, natural gas.

Developing countries which trying to evaluate this sector in best way and even go further beyond they use energy demands even if war treatments. From the present point of view, Turkey is a transition point and energy dependent country.

GENERAL STRUCTURE OF “EAST-WEST ENERGY CORRIDOR”

Turkey is a country among Europe, Asia, Middle East, Balkan, Black Sea and Mediterranean which has a privilege and has a close relation in this geographical area.

Turkey has an important function as an “Energy Bridge” between Caspian basin, Middle East and world markets which has rich natural resources. Turkey which is the biggest investor in the region and has socio-economic and cultural relationship with its neighbours has to support countries in the region both economical and social before its own commercial benefits in energy sector.

After collapsing of the USSR, East-West Energy Corridor Project had been constituted to operate hydrocarbon reserves and to transport western markets which support developments of new established Caucasian and Middle Asian countries. Turkey is the main spine of this project.

East West Energy Corridor consists of these projects:
A) Baku-Tbilisi-Ceyhan (BTC) Crude Oil Pipeline: BTC is a project which is defined the project of the century then Azeri oil entered to Turkey in November 2005 and first oil was filled into tanker in Ceyhan Terminal in March 2006. As an extension of this project, Kazakh oils will be tie in to BTC pipeline and aimed to reach world markets.

B) Baku-Tbilisi-Erzurum (BTE-Sah Deniz Project) South Caucasian Natural gas Pipeline: BTE natural gas pipeline or the other name is Sah Deniz Project is the second project which will be candidate of “East-West Energy Corridor”. Natural gas which belongs to Azerbaijan and Turkmenistan is aimed firstly to reach Turkey then will reach to European countries. Producer Caspian countries will reach to outer markets and be free of Russian effect by Sah Deniz project. This project has begun to operate in July 2007.

C) Turkmenistan-Turkey-Europe (Caspian crossing) Natural Gas Pipeline: Turkmenistan-Turkey (Caspian Crossing) natural gas pipeline has not been realized yet. Europe will need Middle East and Caspian crossing natural gas to supply its natural gas shortage in 2010. That’s why; Turkey is in critical position to supply natural gas to Europe. Two big projects were done to transport natural gas to Europe in case of to realize Caspian crossing natural gas project.

1- ) Turkey-Greece-Italy Natural Gas Pipeline Project: Sale-purchasing agreement was signed between Turkey and Greece in December 2003. It will carry approximately 750 million m³ natural gas from Turkey to Greece in every year.

2- ) Gas supply with natural gas pipeline project (Nabucco Project) will reach to distribution centre of middle Europe through Turkey-Bulgaria-Romania and Hungary to Austria. It is planned to cost 4.4 billion euro and total length is 3400 km. Also, its transportation capacity is 30 billion m³. It is the biggest project to demand natural gas of Europe between years 2010 and 2030.

Beside, Turkey which is the owner of needed energy it is never undervalued act of natural gas to build “East-West Energy Corridor” Also it will be an important contribution to EU adaptation of Turkey. Turkey signed the first natural gas sale-purchasing agreement with the USSR in 1986 and until today 8 pieces long period natural gas sale-purchasing agreements were signed with other 6 different countries. In nowadays, Turkey has six different natural gas pipeline agreements are in validity.

These agreements;
a-) 3 different agreements signed with Russian Federation which their capacities are 6 bcm/y, 8 bcm/y and 16 bcm/y

b-) 10 bcm/y purchasing agreement with Iran

c-) 4 bcm/y purchasing agreement with Algeria

d-) 1,2 bcm/y Liquefied Natural Gas (LNG) purchasing agreement with Nigeria.

<table>
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<tr>
<th>Agreements</th>
<th>Quantity (billion m³/year)</th>
<th>Date</th>
<th>Duration (Year)</th>
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<tr>
<td>Algeria</td>
<td>4</td>
<td>14 Nisan1988</td>
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<td>Iran</td>
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<td>Russia Fed.(Black Sea)</td>
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<td>8</td>
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<td>16</td>
<td>21 May 1999</td>
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<td>12 March 2001</td>
<td>15</td>
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Table-1 Natural gas purchasing agreements (Billion m³ / year)

Turkey was surrounded by Middle East, Caspian region and Russian Federation which have got reserves of 75 % of crude oil and 72 % natural gas. Because of geo-strategic location of Turkey, Turkey is a natural bridge between rich energy sources and European countries which spend 300 billion dollar for energy importation per year.

There are two projects of Turkey which is operated and called Baku-Tbilisi-Ceyhan (BTC) crude oil pipeline and Baku-Tbilisi-Erzurum (BTE) natural gas pipeline and also there is a project that is not operated yet called Turkmenistan (Caspian sea crossing)-Turkey-Europe natural gas pipeline
Despite of indefinites in two projects which are alternate to Russian natural gas, Russian effect on Europe will be eliminated by operating one of these projects. Two projects will cross through Turkish land and Turkey will be less dependent on Russian natural gas. An agreement was signed between Egypt-Turkey for natural gas pipeline projects in March 2004. Also, it is aimed to bring 10 bcm per year natural gas from Iraq to Turkey by rehabilitation of available present pipelines.

While Turkey which operates Baku-Tbilisi-Ceyhan project and Sah Deniz project moves fast ahead, at the same time, Turkey will be an important key country of “North-South Energy Corridor” with natural gas pipeline projects which are Turkey-Greece-Italy, Nabucco and rehabilitation of Iraq-Turkey pipeline. Besides BTC pipeline, Iraq-Turkey natural gas pipeline and Samsun-Ceyhan by-pass pipeline if oil transportation through Turkish straits to taken into account in next years approximately 6-7 % of world consumption will be carried as transit through Turkey. So, Ceyhan will become an “energy valve” in region after building of oil refinery and LNG terminal.

**IMPORTANCE OF PROJECTS OF EAST-WEST ENERGY CORRIDOR AND SECURITY OF SUPPLY**

**1- ) BTC OIL PIPELINE**

Legal structure of BTC project was completed in 2000. After engineering studies, it was planned to complete in 32 months. This project is feasible and it is performed by some of the international oil companies which took part in this project with together BTC Co. These companies are BP (30.10 %), SOCAR (25 %), UNOCAL (8.90 %), STATOIL (8.71 %), TPAO (6.53 %), ENI (5 %), TOTALFINAELF (5 %), ITACHI (3.40 %), INPEKS (2.5 %), CONOCOPHILIPS (2.5 %) and DELTAHESS (2.36 %).

Construction of BTC pipeline has started in spring of 2003 in every three country and the first tanker was loaded which will carry Caspian oil in first half of 2005 in Ceyhan Port. BTC pipeline not only transports crude oil from Caspian Sea of Azerbaijan to Western Europe countries in economically but also decreases dangerous transportation in straits and assisted environmental protection.

BTC is one of the longest pipelines on the world with its total 1776 km lengths. 1076 km distance of the line crosses from Turkey. In the beginning of the project estimated cost was planned 3 billion dollar but now it is increased to 3.6 billion USD. 1 billion USD of this obtained from consortium companies own sources and 2.6
billion dollar was financed from outer sources. The capacity of the gas was 3,000 barrel in the first stage and then reached to full capacity in 2007. Totally 21,000 people worked and 30,000 parcel land was expropriated in this project. The pipeline reached to 2800 m altitude and different diameter pipes such 42”, 36” and 34” were used. During the project many road and railway crossings were built in the countries which are 250 pieces in Azerbaijan, 70 pieces in Georgia and 300 pieces in Turkey. In addition also special river crossings were done 700 pieces in Azerbaijan, 200 pieces Georgia and 600 pieces in Turkey.

BTC supported world oil needs by carrying 50 million tons crude oil annually. BTC and Turkey became an energy corridor between the producer and the consumer countries. Turkey’s important role which carries it for centuries on the junction of Europe, Asia and Africa brightened after this project. Due to no passage to reach the overseas, the main export line of Caspian oil sources is BTC pipeline. BTC pipeline’s estimated economic life is 40 years and it mainly exports to Middle Europe is foreseen.

Importance of the BTC project for Turkey is listed as below.

1- ) Turkey has increased its geopolitical importance with BTC and also became a key country of Eurasia energy corridor. Turkey making a strong safety corridor as named “East-West Energy Corridor” and by this it guaranteed a strong foundation with energy submitting safety subject which is very important for the West.

2-) In addition Turkey decreases oil transporting traffic through Bosporus and Dardanelles by 50 million tons and crossing risks down to minimum level.

3- ) Ceyhan has become an oil harbour.

4-) In case of work full capacity Turkey’s income from loading and transporting of oil with the pipeline is approximately 250 million USD.

5- ) when BTC reaches 50 million tons capacity the income will be more than Iraq pipeline’s income.

6- ) Turkey earned 140-200 million USD annually income for a period of 1-16 years and 200-300 million USD for 17-40 years from this project with serving “transferring tax and operating service”.

7- ) TPAO has a share in the consortium and by this we earned from the investments which we involved as a share holder. Not only had our share in the field but also necessary equipments, material, workmanship which was used during pipeline building added support to our economy.

8-) Caspian crude oil supply Europe independently from Middle East with the pipeline, so this helped EU member countries with choosing source and route variations.
9- )The line named as “PROJECT of the CENTURY” or “21st CENTURY SILK ROAD” became a very important milestone to complete “East-West Energy Corridor” successfully.

2-) BTE NATURAL GAS LINE (SAHDENIZ PROJECT)

The agreements relating the pipeline which would carry Sahdeniz natural gas which is one of the important part of the East-West Energy Corridor and also important to supply natural gas to Georgia via Baku -Tbilisi – Erzurum pipeline were signed between Turkey and Azerbaijan on 12th March 2001. Again at the same date “Natural Gas Purchase and Sale Contract” was signed between SOCAR and BOTAS valid for 15 years. Natural Gas Purchase Agreement consisted that purchases firstly starts with 2 billion m³ and will reach to 6,6 billion m³/year in periods. Although foreseen that Turkey would purchase 2.8 billion m³ natural gas from Sahdeniz in 2007 – 2008 but Turkey only 1,5 billion m³ natural gas imported from Sahdeniz source due to natural gas prices went up and amount decreased by Russia which had been purchasing to Georgia in December 2006.

This project is important for not only gas transporting to Turkey but also as a part of East-West Energy Corridor it will open the way to transport gas to European market via Turkey in the near future. This project will be the first step of Trans-Caucasus natural gas pipeline which will carry Turkmen gas to Western markets. This project is formed in three sections that are;

1) Sahdeniz (Territory Search Development Production),
2) Southern Caucasus Natural Gas Pipeline (SCP South Caucasus Pipeline)
3) Georgian Border – Erzurum Natural Gas Pipeline.

Sahdeniz project was started to search hydrocarbon capacity of region by BP, Stat oil and TPAO Corporation in Azerbaijan sector of Caspian Sea. The partner companies are BP (25, 5 %), STATOIL (25, 5 %), Az SD Ltd (10%), TOTALFINAELF (10%), LUKOIL (10%), NICO (10%) and TPAO (9%). The first gas from Sangacal terminal to the line was delivered on 15th December 2006.

Southern Caucasus Natural Gas Pipeline Project; The pipeline project known as Baku Tbilisi Erzurum (BTE) was built to bring produced gas from Sahdeniz territory to Turkey - Georgia border. Total length of BTE natural gas line (parallel to Baku-Tbilisi-Ceyhan pipeline) is 980 km and 42 inch (106, 68 cm) diameter
pipe was used. 442 km of the line gone through Azerbaijan and 248 km line is on Georgia lands also part of SCP project which is the second stage project.

The third step of the project which 208 km long part between Georgia border and Horasan, Erzurum also crosses through Turkey. Georgia part of Baku-Tbilisi-Erzurum (BTE) Natural Gas Pipeline Project although given into service in 2006 due to delaying of construction in Turkey but Sahdeniz natural gas reached to Erzurum on 3rd July 2007. After completing BTE project the other two important projects which are Turkey-Greece-Italy (Trans Caspian) and Turkey-Bulgaria-Romania-Hungary-Austria (Nabucco) Natural Gas Pipeline Projects were taken into account, so in case of these projects will be realised East-West Energy Corridor will have been completed.

3-) NATURAL GAS PIPELINE THROUGH CASPIAN (TURKMENISTAN-TURKEY-EUROPE)

This mentioned project is third part and most important step of East-West Energy Corridor. If this project which is foreseen to export Turkmen natural gas to Europe via Turkey without any restriction and through the most proper route not realised in this case East-West Energy Corridor will be lacked. After realising BTE, attentions mostly directed to Trans-Caspian. Trans-Caspian is divided into two parts as oil and natural gas lines. These are Trans-Caspian Oil Pipeline which carries Kazakhstan oil to Europe via Caspian and Trans-Caspian Natural Gas Pipeline that will carry Turkmenistan, Uzbekistan and Kazakhstan natural gas to Europe. Trans-Caspian Natural Gas Pipeline will connect to Nabucco natural gas line which is EU’s primary energy project through Turkey. Trans-Caspian Oil Pipeline is planned to connect with Odessa-Brody Oil Pipeline via under surface of the Black Sea after crossing Georgia.

This project is similar to BTC. This means that Trans Caspian is not only economical but also have strategically importance and how BTC is important for Azerbaijan and Georgia for political independence it is same that Trans-Caspian is also important for Kazakhstan and Turkmenistan. One of the main difficulties that Trans-Caspian encounters is misunderstanding about Caspian position between Turkmenistan and Kazakhstan.

Two different pipeline projects are planned from Turkey to Europe. These are as follow;

3-1. Turkey-Greece-Italy (Europe) Natural Gas Pipeline Project

3-2. Turkey-Bulgaria-Romania-Hungary-Austria Natural Gas Pipeline Project (NABUCCO)
3-1. Turkey-Greece-Italy (Europe) Natural Gas Pipeline Project

We can evaluate this project into two sections as “Turkey-Greece” and “Greece-Italy”. Sea and land crossing is under the construction of Turkey-Greece section. Negotiation goes on about second part of the pipeline.

On framework of INOGATE (Interstate Oil and Gas Transport to Europe) of EU, South Europe Gas Loop Project was developed to transport natural gas through Turkey and Greece to European markets from Caspian basin, Russia, Middle East, Southern Mediterranean countries and other international sources.

The Pipeline Project which supply natural gas will start from Karacabey town and cross the Dardanelle Straits under the Marmara Sea then it will reach through Ipsala border point to Gumulcine/Komotini in Greece. Total length of this pipeline is 296 km and its diameter is 36 inch. Crossing the sea is 17 km and 211 km of pipeline is in Turkey section, 85 km of pipeline will be located in Greece. Both countries are responsible to construct pipeline in their countries. The crossing of Meriç River which forms border between Turkey and Greece will be performed together. Related pipeline’s constructions in Turkish land both sea and land crossings currently in progress. Due to delays in tender Meriç river crossing, some postpone can be seen in starting dates of natural gas delivery which is stated in natural gas sale-purchasing agreement.

The importance of this project is to connect natural gas networks of two countries and also an important energy program of EU called INOGATE will constitute of first part of “Southern European Gas Loop”. According to INOGATE program, Turkey will be a key point by carrying natural gas to Europe from Caspian Sea and Middle East via Turkey.

Greek DEPA and Italian Edison Gas companies had prepared a feasibility study for “Greece-Italy” connection which is called second phase of the project. A principal agreement was signed for pipeline to Italy via Adriatic Sea. If Turkey joins this pipeline agreement, pipeline route will be shorter and costs of the construction will be reduced. Also there is an alternative crossing from Albania. On the other hand, different companies from some countries request participating to this project and by the time an agreement was signed on pipeline construction between Greek and Italian governments at the end of last January.
An intergovernmental agreement which prepared about the project was signed between minister of energy and natural sources of Turkey and minister of development of Greece in 23rd February 2003 at Thessalonica. Natural gas purchase and sale agreement signed between BOTAS and DEPA in 23rd December 2003. Gas supply to Greece will start with 250 million m³ in 2006 and will reach to 750 million m³.

Inter governmental agreement between Turkey – Greece - Italy was signed at Rome in 26th July 2007. Construction which started in July 2005 was completed and first gas transported to Greece with an opening ceremony in 18th November 2007.

Turkey-Greece natural gas pipeline project will be developed to reach Italy through Adriatic Sea in next step. BOTAS, DEPA and Edison companies were attended to Turkey-Greece-Italy natural gas pipeline project.

In this project, it is planned to transport to 3,6 billion m³/year to Greece and 8 billion m³/year to Italy through Turkey. It is foreseen that this pipeline will become active in 2012.

3-2.Turkey-Bulgaria-Romania-Hungary-Austria Natural Gas Pipeline Project (NABUCCO)

This project is second important project to play a key role of Turkey to security of supply of natural gas to Europe. BOTAS, Bulgargaz, Transgaz, MOL and OMV have a part in this project.

A working group formed with the companies which have a part in this project at the beginning of 2002. Working got acceleration after cooperation protocol between OMV Austria, which is the most important operating company of Europe and BOTAS

“Nabucco Company Study Pipeline GmbH’ was established to develop the project with the companies of five countries which contribute 20 % for joint venture in June 2004 in Wien. They signed joint venture agreement in June of 2005 and then technical studying performed before basic and detailed engineering contracts and got proposals for engineering studies.

Nabucco pipeline project is aimed to supply natural gas to the countries which are on the same route. Such as Turkey, Bulgaria, Romania, and Austria. According to growing demand, Austria will be an important
distributor country to Western European countries in following years. The line’s length is approximately 3282 km and its capacity is 25.5 – 31 bcm/year. Also, it is planned to be operated in 2013.

Total length of Nabucco pipeline (except feeding lines) 2841 km
Total length of Nabucco pipeline (include feeding lines) 3282 km

<table>
<thead>
<tr>
<th>Main Nabucco Pipelines</th>
<th>Length (km)</th>
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<tbody>
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<td>Turkey</td>
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<tr>
<td>Bulgaria</td>
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<tr>
<td>Romania</td>
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<td>Hungary</td>
<td>388</td>
</tr>
<tr>
<td>Austria</td>
<td>46</td>
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<table>
<thead>
<tr>
<th>Feeding Pipelines</th>
<th>Length (km)</th>
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</thead>
<tbody>
<tr>
<td>Georgia Border-Horasan</td>
<td>226</td>
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<tr>
<td>Iran Border - Horasan</td>
<td>214</td>
</tr>
</tbody>
</table>

| Turkey Total            | 1,998       |

Table-2 Lengths of Nabucco Projects

In nowadays, it is projected to transport of natural gas from sources of Azerbaijan, Sah deniz, Iran, Turkmenistan and Trans- Caspian. In long term, it is projected to transport of natural gas from Iraq, Syria and Egypt and also planning from their surrounded sources.

In principle, this is not a short term project. It goes slowly but keeps going on its strong. Also there are alternative works and partners of Nabucco project are involved in a part of this works. In present time Europe continent gets natural gas from Russia, Norway and Algeria. Despite of competition, this project has got a chance to realize to variety of sources.

As a result we mentioned above together with two projects and some of these projects which will feed by natural gas sources of Turkmenistan, Iran, Azerbaijan, Egypt and Iraq to transport to Europe through Turkey. Turkey will be an important distributor and collector centre and will play key role of European natural gas in security of supply.
These lines are aimed to supply of Eastern European Countries demands. Even though the Eastern European countries seem to be depended on the Russia’s natural gas more than Western, subject countries’ demands are less than Western's. By the way, natural gas coming from Hazar (Caspian Sea) will decrease the dependence of these countries to Russia. According to the development of other countries’ demand, in the following years, it is planned to reach to Western Europe through Austria by profit from its natural gas distribution specification.
Map-1 Natural gas supply projects through Europe
THE RELATIONSHIP OF EUROPE-TURKEY IN WEST-EAST ENERGY PASSAGE PROJECT

Considering researches and requests that cover industry, electrical and real estate sectors, in order to supply of request in time and continuously, a lot of project are started. Turkey is performing some projects about current natural gas system renewing and developing, natural gas storage, also carrying out some natural gas purchasing works with Azerbaijan, Turkmenistan, Egypt and Iraq. European market also needs to be investigated in order to be understood these works in our country that natural gas to be supplied. (Targeted to safe of supply, continuously and flexibility of energy sources)

European Union is not only the one of the biggest consumer in the world, but also the biggest energy importer with the continuously increasing portion 1% since 1990. It is expected to reach to the numbers of OME, in 15 EU member countries, natural gas consume amount are; 386 billion m³ in 1999, 500 billion m³ in 2010, 600 billion m³ in 2020 within 2,1% approximately increase. Realizing from that numbers, European Natural Gas Market will meet to import request in the next 20 years. When comparing new gas passages’ costs that can supply Europe’s demand, the passage going over Turkey seems to be more feasible than the others. Due to geographical situation between East and West, Turkey is the key country on the carriage of big gas amount. Within the reason, BOTAS is communicating to the countries which have request, at the same time it gets established in the way of “future’s energy bridge”. The most important target is here; as soon as possible, by starting each work in time and strongly, to produce the projects in the right passages that gives most benefits to Turkey. The works needs to be accelerated in order to direct the passages (that supply Europe’s demands) through Turkey and we have to use advantages of being the key country for transfer of gas in East.

In brief, whether being a member of EU or not, carrying natural gas and rich petroleum sources in Caspian, Middle East and generally in Asia, through Turkey to the West, will gain us considerable incomes. When looking at to advantages of Turkey to join to EU, energy will be at the first, and it is not a chance event. It is important to profit from these advantages; it needs to be used by serving to our country’s benefits.
CONCLUSION

As it is known, Turkey is located in strategic ellipse which has 72% of world gas reserves. Therefore, Turkey becomes a natural bridge between source countries (Middle East, Caspian region countries) and market countries (European countries). Turkey is a key country due to strategic location and also it provides continuity and security of supply for natural gas. Turkey is not only a consumer position but also Turkey is an actor because of important geopolitical location in natural gas sector.

In energy sector, if we compare to this chaos and complexity to chess game. We can see that this game can only be played with master players. If you aren’t a master workman, you have to lose the game in every time. That’s why we have to play this game according to its rule. If Turkey traces a right energy policy with taken all these into account, it will also have an advantage to be accepted into EU.
Map-3 Available and planning natural gas supply projects

Map-4 International Natural gas pipeline projects
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