COMPLEXITY OF CASPIAN SEA GEOPOLITICS AND PURPOSING A SOLUTION

By

Ahmad Emami Meibodi/ PhD student at faculty of economics, Shahid Beheshti University / +989127747123/ a.emami.m@gmail.com

Mohammad Hossein Memarian/ MS student at faculty of economics, Tehran University/ +989192108768/ memarian.mh@ut.ac.ir

Abstract

By dissolution of the Soviet Union and ending the Cold War era in 1991, the concern over the importance of Caspian Sea geopolitics has been raised and made it a target region for major powers. The main area of interests are centered on its Oil and gas reserves. Based upon the preliminary hypotheses, some international agencies claimed that Caspian Sea O&G reserves could be play a rival role for the Persian Gulf, but later the theory was rejected. Despite this rejection, Caspian Sea still keeps its charms in world energy market. EIA estimates 48 billion barrels of oil and 292 trillion cubic feet of natural gas in proved and probable reserves in the Caspian basins compare with initial estimates of 200 billion barrels of oil. The Caspian basins area produced an average of 2.6 million barrels per day of crude oil in 2012, around 3.4 percent of the world supply. Meanwhile, inconsistency between the regional governments’ interests, political rivalry of world powers and the lack of sufficient export options for the Caspian hydrocarbon resources, have slow down the development of the regional oil and natural gas resources. Iran as a Caspian costal country has a special geopolitical advantage. Easy access to international water through the Persian Gulf which is located in the southern part of the country, gives her a rare geopolitical privilege. In this paper we will try, by reviewing the geopolitics of Caspian region to suggest a possible solution for the involving parties through moderating the existing geopolitical complexity that to some extend facilitate and speed out the development of the regional energy sector.

1- Introduction

Recently, regarding the growing economic and strategic importance of energy, oil and gas pipelines have become the focus of competition in the geopolitical arena. Previously, big energy companies have sought to extract those resources which have been located near the consumer markets or which have been easily accessible and portable by tankers; correspondingly, the first energy spheres which were developed on a large scale, have been situated inside or near the consumption centers, such as the U.S., Mexico, Canada, Russia or near the major waterways like the Persian Gulf. The majority of these reserves keep on production and still supply a major share of the oil consumed in the world. However, since these areas are among the first resources that have been used, at the moment, they are
generally, at maximum production level and are declining; nevertheless, some of them are still likely to continue to produce more, in the coming years. But it is straightforward that any attempt to expand global production over current levels, requires developing new resources and the most disposed areas for development of energy resources are located in deep waters offshore. Besides other reasons such as landlocked reserve resources and far distance consuming markets, this is why, nowadays, we are in need of long pipelines for transporting resources, and this makes such projects costly. Thus increasing demands for energy resources has further increased the importance of pipelines.

2- Reserves, exploration, and production

Although the Caspian region is rich in energy resources, oil and gas extraction is impeded by number of problems such as transportation, and lack of adequate investment for implementation of significant projects. In order to be supplied to world markets, natural gas and oil of the Caspian region need to be transported to ports requiring costly infrastructure. Since Caspian oil and natural gas fields are located relatively far from export markets, oil and natural gas have been exported through old Soviet pipeline networks. Once all of the littoral countries were part of the Soviet Union, these pipelines served the requirements of the whole Soviet Union. After the collapse of the Soviet Union, independent nations could benefit from their geographic position in determining export routes for Caspian resources. One instance is Kazakhstan's contract with China in 1997, as a result of which a China-supported Kazakhstan-China oil pipeline was constructed, which was the first pipeline directly importing oil from Central Asia China. Given such difficulties in transporting Caspian energy resources, large amounts of foreign investment are needed for implementing significant projects such as Kazakhstan's Kashagan field project. Moreover, offshore projects are very costly due to periodic freezing of the Caspian Sea waters. In such circumstances, companies are obliged to move drilling and maintenance equipment to production areas near the Caspian Sea through some canals from the Black Sea.

A further issue which makes the situation even more complicated is that changing administrative and legal outlines creates uncertainty for foreign companies which tend to invest on natural resources. For instance, geologic exploration in the southern Caspian basin has been hampered due to lack of agreed-upon maritime borders between Turkmenistan, Azerbaijan, and Iran.

2-1- Reserves and exploration

According to EIA, Caspian basin contains 48 billion barrels of oil and 292 trillion cubic feet of natural gas in proved and probable reserves. Of these reserves, about 75 percent of oil and 67 percent of natural gas are located within 100 miles of the coast.

Determining the total amount of hydrocarbon resources is difficult as a result of regional conflicts and restricted explorations. According to the estimates of EIA, on the basis of field-level data, the wider Caspian basin's reserves both from onshore and offshore fields include 48 billion barrels of oil and 292 trillion cubic feet of natural gas. As the reserve figures include both proved and probable resources, the figures are closer to a higher end estimate.
The majority of Caspian reserves are offshore, located near the Caspian Sea coast, particularly near the northern coast. According to EIA, 41 percent of the total Caspian crude oil and lease condensate (19.6 billion bbl) and 30 percent of natural gas (106 Tcf) is obtained from offshore fields. All in all, the majority of offshore oil reserves are found in the northern part of the Caspian Sea, while the greatest amount of offshore natural gas reserves exists in the southern part of the Caspian Sea. Besides that, Onshore fields within 100 miles of the coast, most prominently Russia’s North Caucasus region, supply 35 percent of oil (16.6 billion bbl) and 45 percent of gas (30 Tcf). The rest of oil and natural gas reserves, i.e. 12 billion bbl of oil and 56 Tcf of natural gas are dispersed in more distant onshore fields in the vast Caspian Sea basins, for the most part in Azerbaijan, Turkmenistan, and Kazakhstan.

As the Caspian Sea delineation is not clearly specified, several countries contest over possession of certain offshore resources. For instance the Serdar (Turkmenistan)/ Kyapaz (Azerbaijan) field, initially discovered in 1959 by Azerbaijani geologists, has been claimed by both Azerbaijan and Turkmenistan.

Table 1- Caspian basins proved and probable reserves

<table>
<thead>
<tr>
<th>Country</th>
<th>Crude oil and lease condensate(billion bbl)</th>
<th>Natural gas (tcf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaijan</td>
<td>8.5</td>
<td>51</td>
</tr>
<tr>
<td>Offshore Caspian</td>
<td>6.8</td>
<td>46</td>
</tr>
<tr>
<td>Onshore Caspian</td>
<td>1.7</td>
<td>5</td>
</tr>
<tr>
<td>Iran</td>
<td>0.5</td>
<td>2</td>
</tr>
<tr>
<td>Offshore Caspian</td>
<td>0.5</td>
<td>1</td>
</tr>
<tr>
<td>Onshore Caspian</td>
<td>(s)</td>
<td>1</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>31.2</td>
<td>104</td>
</tr>
<tr>
<td>Offshore Caspian</td>
<td>15.7</td>
<td>36</td>
</tr>
<tr>
<td>Onshore Caspian</td>
<td>15.5</td>
<td>68</td>
</tr>
<tr>
<td>Russia</td>
<td>6.1</td>
<td>109</td>
</tr>
<tr>
<td>Offshore Caspian</td>
<td>1.6</td>
<td>14</td>
</tr>
<tr>
<td>Onshore Caspian</td>
<td>4.5</td>
<td>95</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>1.9</td>
<td>19</td>
</tr>
<tr>
<td>Offshore Caspian</td>
<td>1.1</td>
<td>9</td>
</tr>
<tr>
<td>Onshore Caspian</td>
<td>0.8</td>
<td>10</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>(s)</td>
<td>7</td>
</tr>
<tr>
<td>Offshore Caspian</td>
<td>(0)</td>
<td>0</td>
</tr>
<tr>
<td>Onshore Caspian</td>
<td>(S)</td>
<td>7</td>
</tr>
<tr>
<td>Total Caspian</td>
<td>48.2</td>
<td>292</td>
</tr>
<tr>
<td>Offshore Caspian</td>
<td>19.6</td>
<td>106</td>
</tr>
<tr>
<td>Onshore Caspian</td>
<td>28.6</td>
<td>186</td>
</tr>
</tbody>
</table>

Notes:
(S) Value is too small for the number of decimal places shown
*Offshore Caspian refers to fields in the Caspian Sea
*Onshore Caspian refers to fields in Caspian basins that are not offshore
Proved Probable reserves exceed the value of proved reserves in EIA’s International Energy Statistics.
Sources: U S Energy Information Administration HIS EDIN, Eastern Bloc Research Energy Data book 2012
There is the possibility that the Caspian Sea contains additional hydrocarbons in remote and undiscovered areas. In an attempt to estimate undiscovered resources for priority basins around the world, the U.S. geological survey (USGS) appraised the Caspian basin region on the basis of reported geologic information on commercial oil and natural gas field data. Whether such additional resources could be extracted or not, remains uncertain. As such, these resources are not considered as commercial, presently.

The USGS gauges an average of about 20 billion barrels of crude oil and 243 trillion cube feet of natural gas in rectifiable, typical underexplored resources. According to USGS, nearly 65 percent of the unexplored oil and 85 percent of natural gas exist in the South Caspian basin. This figures imply that regional conflicts led to more restricted exploration and geologic estimation of the southeastern part of the Caspian Sea near Iran and Turkmenistan. Significant amounts of undiscovered resources have been estimated for the article-like northern part of the Caspian Sea, as well, an area which had not been duly explored as yet.

Figure 1- World’s estimated undiscovered oil resources, 2012(billion barrels of oil)

Note: Undiscovered resources are mean undiscovered technically resources
former Soviet Union includes all Caspian Sea Area except in Iran
Sources: U.S. Energy Information Administration, USGS World Estimate of Undiscovered Resource 2012, USGS Assessment of undiscovered resources of Caspian Sea Area 2010
Figure 2- World Estimated undiscovered natural gas resources, 2012 (trillion cubic feet)

Notes: undiscovered resources are mean undiscovered technically recoverable resources
“Former Soviet Union” includes all Caspian Sea Area resources except in Iran
Sources: U.S Energy Information Administration, USGS World Estimate of Undiscovered Resources 2012,
USGS Assessment of Undiscovered Resources of Caspian Sea Area 2010

2-2- Oil Production

Almost 3.4 percent of world's oil supply was produced in the Caspian basin area, where a
mean of 2.6 million barrels of oil was obtained per day in 2012, of which one third has come
from offshore fields.

On the basis of the findings of EIA, 2.6 million bbl/d is the average rate of crude oil and lease
condensate production for the Caspian basin per day. Such quantity consists nearly 3.4
percent of world's total crude oil supply. Of these resources about 35 percent has come out of
offshore fields in the Caspian Sea. Onshore fields which are less than 900 miles away from
the sea coast, produce more than half of the total amount of oil production of the Caspian
basin.

One of the salient onshore oil fields in Caspian Sea area which has had the most contribution
to production rate of the region is Kazakhstan's Tengiz field. Later, when the Azeri-Chirag-
Guneshli (ACG) field groups have been launched between 2006 and 2008 in Azerbaijan, this
country's contribution started to supply a major portion of the total Caspian production.

Onshore field in Turkmenistan near the coast and Caucasus region in Russia can be regarded
as the sources of Caspian oil production, as well.

The majority of Caspian production is obtained from onshore fields at this time, whereas
future gains in Caspian oil production is thought to rely heavily on offshore fields, which
have not been duly explored up to now.

Oil production in some of the countries in Caspian region such as Azerbaijan and
Turkmenistan is totally dependent on Caspian production, while in others, such as Iran and
Russia, as two largest producers of the region, Caspian production constitutes only a
fractionquantity of oil production. In general, the so-called Caspian oil production constitutes
17 percent of the total oil production of the region countries. Caspian production is compared to total production for six countries in the following table.

Table 2- Crude oil production in Caspian region, 2012 (thousand barrels per day)

<table>
<thead>
<tr>
<th>Country</th>
<th>Caspian offshore</th>
<th>Onshore basin</th>
<th>Total Caspian production</th>
<th>Total country production</th>
<th>Caspian % of total country production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaijan</td>
<td>890</td>
<td>32</td>
<td>922</td>
<td>922</td>
<td>100%</td>
</tr>
<tr>
<td>Iran</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3367</td>
<td>0%</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>3</td>
<td>1384</td>
<td>1387</td>
<td>1515</td>
<td>92%</td>
</tr>
<tr>
<td>Russia</td>
<td>6</td>
<td>114</td>
<td>120</td>
<td>9222</td>
<td>1%</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>46</td>
<td>170</td>
<td>216</td>
<td>216</td>
<td>100%</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>0</td>
<td>(s)</td>
<td>(s)</td>
<td>66</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Total</td>
<td>945</td>
<td>1700</td>
<td>2645</td>
<td>16007</td>
<td>17%</td>
</tr>
</tbody>
</table>

Sources: U.S Energy Information Administration, HIS EDIN, Eastern Bloc Energy, Rigzone, Rystad Energy

2-3- Azerbaijan

The large offshore field complex which is called ACG after 3 major fields including Gunesli Deep (discovered in 1977), Chirag (1985), and Azeri (1986), is the foremost source for oil production in Azerbaijan. The Azerbaijan international operating company (AIOC) wields the field group and accounts 5 billion barrels of technically recoverable oil. AIOC can be subdivided to Azerbaijan state oil company (SOCAR) and other foreign companies such as INPEX and Chevron. Two separate pipelines transport oil from ACG to the onshore Sangachal Terminal south of Baku and to the onshore Kyanizadag Terminal east of Baku.

Azer light, a medium-light and sweet crude which is favored for its high middle-distillate yield, is produced by ACG. As a result of ACG's poor performance, Azerbaijan's oil production has been challenged to fulfill the targeted level of production in 2012. As such, an output stabilization program was initiated by BP and SOCAR with the hope of avoiding upcoming declines from the field in 2013.

2-4- Iran

No significant production has been observed from Iran’s part in the Caspian at present time. SardarJangal field which was discovered in 2011, is claimed to yield 100 millionbbl of oil reserves. The crude oil derived from the SardarJangal oil field has been meant by the Iranian oil ministry to supply a refinery which has been established on the Caspian coast.

2-5- Kazakhstan

The giant offshore Tengiz field which has been discovered in 1979, is the largest source of oil production in Kazakhstan. This field is operated by a consortium known as Tengizchevroli
(TCO) which yielded nearly 500,000 bbl/d in 2011. Nonetheless, according to LUKOil several factors such as inclement weather and mechanical and transportation problems caused Tengiz field to lag behind the target production.

Another giant oil field which is considered as the largest oil discovery of the last 35 years, is Kashagan field, from which the greatest amount of oil production is derived. This field is operated by a consortium known as the Agip Kazakhstan North Caspian Operating Company (Agip KCO). With reserves more than 13 billion barrels of oil and significant natural oil deposits, it is the biggest oil field outside the Middle East which was discovered in 2000. Establishment of the Kashagan experienced many delays. There were several problems which hindered efficient production such as the fields great depth, high sulfur, high pressure, and cold temperature.

2-6- Russia

Formerly, onshore fields in the north Caucasus region were the major source of Caspian production in Russia. In 2010, the country’s first offshore field was launched by LUKOil. This field has become one of the most valuable projects in Caspian. Russia’s crude oil is transported to the Black Sea port of Novorossiysk through the Makhachkala port.

Given the recent development of the northern Caspian, Russian enterprise can benefit from new technologies that can be utilized in Arctic. A further advantage of the Korchagin field is that it was the first field in the world which succeeded in protecting against the rough situation of the north Caspian Sea by using an ice-class floating storage offloading vessel.

2-7- Turkmenistan and Uzbekistan

Offshore fields such as Garashyzlyk in the western part of Turkmenistan is the major oil reserve of the country. The offshore Cheleken project has been launched by Turkmenistan government in contract with some foreign investor companies such as UAE’ Dragon oil.

Uzbekistan has not a major say in oil production in the Caspian region. Kokdumalak is the country’s most known oil reserve which is located in the southeast. However, Uzbekistan has limited oil resources within its area of the Caspian basin.
Figure 3- Caspian basins oil production 2000-2012 (thousand barrels per day)

Sources: U.S Energy Information Administration, HIS EDIN, Eastern Bloc Energy, Rigzone, Rystad Energy
Note: Oil Production includes crude oil and lease condensate production for all fields in Caspian basins

2-3- Natural gas production

Future progress in Caspian hydrocarbon production will rely, for the most part, on natural gas, due to the significant and dispersed nature of Caspian natural gas reserves.

Although the majority of the oil resources of the Caspian basin are possessed by Azerbaijan and Kazakhstan, there exists significant natural gas resources in all countries of the region. The largest natural gas filed which have been discovered so far are located onshore in Turkmenistan, Kazakhstan, and Uzbekistan as well as offshore in Azerbaijan. There can be found huge natural gas resources in Iran and Russia.

Gas production in Azerbaijan and Kazakhstan is mainly obtained from the middle and north Caspian basins, while in Azerbaijan production mainly occurs offshore. Unlike Azerbaijan, gas production in Kazakhstan comes from onshore fields currently.

Only a limited portion of Turkmenistan’s gas production comes from the Caspian area, the major part of this country’s production originates from southeast fields. Iran and Russia as well, although known as big natural gas producers, do not have any production in Caspian area.
Table 3- Gross natural gas production in Caspian Region, 2011 (billion cubic feet per year)

<table>
<thead>
<tr>
<th>Country</th>
<th>Caspian region production</th>
<th>Total Caspian production</th>
<th>Total country production</th>
<th>Caspian % of total country production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Caspian offshore</td>
<td>Onshore basin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>562</td>
<td>183</td>
<td>745</td>
<td>745</td>
</tr>
<tr>
<td>Iran</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7915</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>(s)</td>
<td>1025</td>
<td>1025</td>
<td>1390</td>
</tr>
<tr>
<td>Russia</td>
<td>17</td>
<td>468</td>
<td>485</td>
<td>23868</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>1</td>
<td>283</td>
<td>284</td>
<td>2338</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td>2226</td>
</tr>
<tr>
<td>Total</td>
<td>580</td>
<td>1969</td>
<td>2549</td>
<td>38300</td>
</tr>
</tbody>
</table>


2-4- Azerbaijan

With a long history in oil production, Azerbaijan is now considered as one of the major producers of natural gas in the Caspian region. Shah Deniz field supplies most of gas production of the total production. As the largest gas field in the Caspian sea, Shah Deniz is located about 40 miles southeast of the ACG complex, containing potential resources of nearly 30 Tcf of natural gas.

Increase in local gas consumption, particularly in the power sector, has lowered the export potential of Azerbaijan's gas resources.

2-5- Kazakhstan and Russia

Despite being one of world's major gas producers, Russia has a very low potential for gas production in Caspian region. A large gas-condensate field is operated by Gazporm, which produces small quantities of natural gas from several fields in the north Caucasus. According to LUKOIl, the northern Caspian region is a key oil and natural gas producer, especially from the Filanovdky oil and natural gas field. The giant Tengiz field supplies a major portion of Kazakhstan's gas production.

2-6- Turkmenistan

Rather than exporting liquefied natural gas, Turkmenistan prefers to export natural gas through pipelines, as it is a landlocked territory. In 1980's, it became the former Soviet Union's second largest gas supplier, due to significant investments it received for gas field exploration. The country's second largest field, i.e. Dauletbad and Malai, are operated by Turkmengas, which accounts for the majority of country's production.
Based on the reports of some British companies, the country contains the 4\textsuperscript{th} largest natural gas field in the world, namely Yolotan-Osman which was renamed as Galkynysh in 2011.

2-7- Iran and Uzbekistan

In spite of being two of world's major gas producers, Iran and Uzbekistan have no significant production in Caspian basin. According to industry sources, SadarJanhal produces 50 Tcf of gas, while Iran's ministry of petroleum asserts to have much higher amounts of offshore natural gas proved reserves in the Caspian.
Table 4- Caspian region major oil and natural gas projects

<table>
<thead>
<tr>
<th>Country</th>
<th>Major project</th>
<th>Location</th>
<th>Production,2012</th>
<th>Year of Commissioning/Production start up</th>
<th>Developing Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaijan</td>
<td>Azeri-chirag-gunushi</td>
<td>Caspian offshore</td>
<td>660000 bbl/d Oil 110 Bcf gas</td>
<td>1997</td>
<td>AIOC(BP, Chevron, Devon energy, statoil hydro, Amerada Hess, SOCAR, Exxon mobile, Hess, SOCAR, ExXon mobile)</td>
</tr>
<tr>
<td></td>
<td>Shah Deniz</td>
<td>Caspian offshore</td>
<td>260 Bcf gas</td>
<td>2006</td>
<td>Bp. Statoil hydro, socar, trao, total, niko, lukoil</td>
</tr>
<tr>
<td></td>
<td>Alaz-Alov-Sharg</td>
<td>Caspian offshore</td>
<td>Developing</td>
<td>-</td>
<td>SOCAR, BP, Exxon mobile, Statoil hydro, EnCara, TPAO</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>Kashagan</td>
<td>Caspian offshore</td>
<td>Developing</td>
<td>2013</td>
<td>North Caspian operating company(ENI, Shell, Total, Exxon Mobile, Conoco Philips, Inpex)</td>
</tr>
<tr>
<td></td>
<td>Tengiz</td>
<td>Caspian Onshore</td>
<td>480,000 bbl/d oil 430 Bcf gas</td>
<td>1991</td>
<td>Tengizhevroyl, chevron, Exxon mobile, KazMunaiGaz, LUKOil</td>
</tr>
<tr>
<td></td>
<td>Karachaganak</td>
<td>Caspian Onshore</td>
<td>Phase 1-1985</td>
<td>Phase 2-2000</td>
<td>Karachaganak Petroleum, Operating(BG Group, ENI, Chevron, LUKOil)</td>
</tr>
<tr>
<td></td>
<td>Kurmangazy</td>
<td>Caspian offshore</td>
<td>developing</td>
<td></td>
<td>Rosneft, KazMuniGaz</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>South Yolotan (Galkynsh)</td>
<td>Onshore*</td>
<td>developing</td>
<td>2006</td>
<td>Turkmengas/CNPC</td>
</tr>
<tr>
<td></td>
<td>Dauletbad</td>
<td>Onshore*</td>
<td>14 Tef gas</td>
<td>1983</td>
<td>Turkmengaz</td>
</tr>
<tr>
<td></td>
<td>Cheleken</td>
<td>Caspian Offshore</td>
<td>74,000 bbl/d oil</td>
<td>1950</td>
<td>Dragon Oil, Turkmenneft</td>
</tr>
<tr>
<td>Russia</td>
<td>North Caspian block (Yury Korchagin)</td>
<td>Caspian Offshore</td>
<td>7,000 bbl/d oil, 16 Bcf gas</td>
<td>2010</td>
<td>LUKOIl</td>
</tr>
<tr>
<td>Iran</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Although not geologically part of the Caspian basin, these projects are included because they link up to Caspian region infrastructure

NOTE: No projects detailed for Uzbekistan and Iran

Sources: U.S Energy Information Administration, BP,ENI, HIS Edin, Dragon Oil
3- Various Markets for Caspian Region energy

3-1- Export to European markets

Previously, the Soviet pipeline system transported Caspian oil and natural gas directly to Russia, where some of it could go to western markets. The Soviet-era pipelines have been repaired by investors with the aim of taking oil from offshore fields across the Caspian Sea.

Launched in 2001, the Caspian pipeline consortium (CPC) starts from Kazakhstan's Tengiz oil field to the port of Novorossiysk on the Black Sea. It was responsible for carrying an average of 684,000 bbl/d of crude oil in 2011, consisting of 608,000 bbl/d from Kazakhstan and 76,000 bbl/d from Russia. The capacity of the pipeline was expanded in 2011 by CPC partners. It is expected to provide additional potential for transportation.

The Baku-Novorossiysk pipeline, running from the Sangachal Terminal to Novorossiysk, is 830 miles long. The Azeri part is operated by SOCAR and the Russian part is operated by Transneft. The pipeline operation becomes problematic occasionally as SOCAR and Transneft dispute over transportation traffics.

After the demise of the Soviet Union, another export route, namely, Baku-Tbilisi- Ceyhan (BTC) attracted the attention of western investors. Oil supplies are transported to Baku by tanker across the Caspian sea then are shipped mainly by tanker to European markets.

Another oil export pipeline which connects Kazakhstan to world markets via the Black sea, is Uzen-Atyrau-Samara. This line was the primary route for oil transportation before the CPC pipeline has been completed.

Kazakhstan has set out to construct the Kazakhstan-China transportation system (KCTS). This project is aimed at exporting oil produced in Tengiz to international markets. Both Soviet-era and new pipelines are employed in exporting Caspian natural gas to Western Europe. For instance, a newly built pipeline, i.e. the Central Asian- Center gas pipeline is connected to the wider Soviet gas pipeline network. Before linking with the Russian system, the two branches of CTC meet in Beyneu.

As a parallel pipeline to BTC, the South Caucasus pipeline (scp) provides natural gas for Georgia and Turkey.

3-2- Export to East Asian markets

Increase in oil consumption has led China and Japan to invest in Caspian oil and natural gas production. Countries like Japan tend to finance pipeline projects with the aim of supplying more resources for the world markets.

The Kazakhstan- China pipeline has recently turned to the primary route for exporting Caspian oil to East Asian markets. This line runs from Atyrau port to Xinjiang region in China.
Another pipeline which exports most of Caspian region's natural gas to East Asia is the Turkmenistan-China gas pipeline. This route, after passing through Uzbekistan and Kazakhstan, crosses the China Kazakhstan border and connects to the West-East gas pipeline.

3-3- Export to South Asia Markets

As demands for energy has increased in countries like India and Pakistan, a consortium of countries set out to construct a pipeline that runs from Turkmenistan to India. In this way the growing south Asian market can be supplied with oil and gas resources which has come from Turkmenistan. This pipeline would run through Turkmenistan (90 miles), Afghanistan (460 miles), Pakistan (500 miles) and ultimately reaching the Indian border.

Iran oil export and swaps

Iran tends to invest in trading projects called swap in which oil from Central Asian countries will be imported and sent to refineries in Tehran and Tabriz. Later these resources will be exported to potential buyers in the Persian Gulf markets. In 2005, United Nations estimated that Iranian oil swap with Kazakhstan reached about 27,000 bbl/d.

Iran has sought to expand the coastal infrastructure at the port city of Neka through medium-term and long-term development. Until July 2011, the Iranian port of Neka had an important role in exporting most of UAE-based Dragon oil.
4- Analyzing the routes

Gas exporting countries of the Caspian Sea are Azerbaijan, Kazakhstan, and Turkmenistan. As new suppliers of natural gas, these countries include Kazakhstan (13 percent), Turkmenistan (19 percent), and Azerbaijan (7 percent) respectively (Cera, 2009).

Figure 4-Transportation routes for Caspian energy lines to world markets

After the demise of the former Soviet Union and the Cold War, the Caspian Sea has turned to the sea of conflict and confrontation between regional and trans-regional powers. The area which has been regarded as a quiet and geopolitically passive territory for many years has now been aroused, wherein the countries have come out of geographic isolation and are seeking to play an important role in the international arena. In the recent years, debates about determining the route of the pipeline for energy transportation in Caspian littoral states, despite the commercial nature of the issue, has turned to a politically controversial matter (Cornell & Nilsson, 2008: 11), in a way that it is known as the pipeline politics in the Caspian region. Concerning this, according to analysts, a "new Great Game" for control of the Caspian region has been launched. Unlike the Great Game of the 19th century of which Britain and Russia were the only actors, in this new Great Game that is in progress in Central Asia and Caucasus, various actors are involved, so that in addition to regional and trans-regional countries, oil companies have also involved themselves in the affairs. The essence of this new game in the Caspian basin has two aspects: 1. Control over oil and gas production in Caspian region. 2. Control over the pipeline that will carry oil to western markets (Kolaie, 1384:48).
4-1- The western route

The western route passes the oil and gas of Turkmenistan and Azerbaijan to Europe through Turkey and Georgia; and it is supported by the U.S., European Union, Turkey, Azerbaijan, and Georgia. The Baku-Novorossiysk oil pipeline (1500 kms), the Baku-Supsa pipeline (920 kms), the Baku-Tbilisi-Ceyhan oil pipeline (1730 kms), the Tengiz-Novorossiysk oil pipeline (1600 kms), the Baku-Erzurum oil pipeline, and Caspian pipeline consortium are among the most salient energy transmission lines of the western route (Mohammadi, 1384:180).

4-2- The northern route

This route transports the oil and gas of Kazakhstan and Azerbaijan through the Black Sea and it is supported by Russia. The major pipeline of this route, namely Atyrau-Samara is 795 kms long, starting from Atyrauport in Kazakhstan, leads to Russia and reaches the White Russia, Poland, and Hungary through Russia's inland. This route has not been much favored by Central Asian countries, on the grounds that it makes these countries still dependent on Russian federation; as such, these countries are seeking to do away with such dependence by utilizing other routes. Since this route passes through the unsafe territory of Chechnya and its surroundings, it is more or less regarded as a risky and insecure way for transporting Azerbaijan's oil (Jalali, 1384:220).

4-3- The eastern route

The oil and gas of Kazakhstan is transported to the eastern part of China through this route which is supported by China. The Kazakhstan-Xinjiang pipeline with a length of 3000 kms, consists the eastern route for transporting energy to China and eastern Asian markets. This pipeline has augmented China's authority in utilizing energy-rich resources of the Caspian region and contributed to economic growth of this country (Sanaie, 1384:17).

4-4- The southeastern route

This route starts in Turkmenistan and then, passing through Afghanistan, advances through Pakistan territory, until it reaches the harbor. In 1997, Turkmenistan, Afghanistan, Pakistan, and Uzbekistan signed a memorandum of understanding on this issue. Provided the pipeline is invested, it has the potential to transport one million barrels of oil per day. The length of this pipeline will be 1672 kms and it is estimated to cost 2.5 million dollars. From a geographical point of view, this project is applicable and feasible, however as far as political issues are concerned, it is prone to fail for the reason that it should pass through Afghanistan territory. Furthermore, extreme insecurity in Baluchistan and Pakistan on one hand, and prevalence of drug-trafficking gangs on the other, threatens the security of the pipeline (Tabatabaie, 1383:93).

4-5- The Southern route

A further option for transporting the Caspian basin energy is the southern route, that is, oil and gas will be gathered from Azerbaijan, Kazakhstan, and Turkmenistan fields and then will be transported to Persian Gulf and Oman Sea markets. Islamic Republic of Iran has presented two proposals in this regard: 1. exchange system (swap) 2. direct transportation system (Tabatabaie, 1383:94). This route has several advantages over others: 1. As it passes only through one country, i.e. Iran, and not several countries, it is less likely to face safety and
security problems and probable disputes among involved countries. 2. It is not aimed exclusively at European markets, thus there is no direct competition with Russian resources and it raises no objection on the part of Russian companies. 3. Not passing through Russia, it makes exporting countries less dependent on Russia. 4. It offers a wider range of buyers in the Persian Gulf in comparison to other routes which export resources only to China or European markets and this will guarantee the safety of their transactions.

5- Iran- Russia Dilemma

Recently the Iran- Russia political relations have developed. Having mutual political interests in Syria, negotiating over some substantial military sales contract such as anti-aircraft missile and Sukhoi Su-30 fighter jets are just some of two Countries Corporations. Despite of these developments there are still complexities which haven’t been solved yet.

Legal status and territorial dispute of the Caspian area is one of the most important complexities between Iran and Russia during last decade. This dispute rose because there isn’t an agreement on whether the body of water is defined as a sea or lake. And in each case different international law would apply as we can see in the table below:
### Table 5: Caspian legal status alternatives

<table>
<thead>
<tr>
<th>Classification</th>
<th>Applicable regime</th>
<th>Effect</th>
</tr>
</thead>
</table>
- Territorial seas do not extend 'beyond the median line every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two states is measured.'  
- Land-locked states (Azerbaijan, Kazakhstan, Turkmenistan) can claim right of access to high seas. |
| Lake           | Customary international law governing border lakes | - Border states regulate use of water through international agreements.  
- Each state has exclusive rights over resources and water surface in its national sector.  
- Lakes can be delimited several different ways, such as by coastal line or median line. |

Sources: UNCLOS 1982, Chatham House 2005

Azerbaijan, Kazakhstan, Turkmenistan would like to define Caspian as a Sea. Under this definition Azerbaijan and Turkmenistan would have access to offshore oil field that Iran wouldn’t be able to access. In the other hand Iran likes to define Caspian basin as a lake. She propose equal share by giving each country 20 percent of the sea floor and surface of the Caspian. (AEA.2013)

The Russian view on the legal status of the Caspian Sea has been quite malleable since the breakdown of the Soviet Union. Before 1994 and initiating the contract of the century (thirty companies from eight different countries participate in the development of Azerbaijan oil resources), foreign ministry of Russia was following Iran’s line of reasoning by referring to the treaties of 1921 and 1940 and evoking the Almaty declaration 1991. (Zimnitskaya, Geldern. 2010) In 1996 Russian policy was changed. They proposed granting national sovereignty over the O&G resources within forty-five miles of each state coast, and leaving the middle area for join development. (Mehdiyoun.2000) However this proposal didn’t last long and in 1998 they signed a bilateral agreement with Kazakhstan and after that in 2002 with Azerbaijan. This bilateral agreements was based on a division of seabed resource when it define as a Sea. In result of such agreements and other corporation Russia made his allegiance with three costal countries against Iran which is called 4+1.
Wrap up

According to the estimates of EIA, Caspian basin's reserves both from onshore and offshore fields include 48 billion barrels of oil and 292 trillion cube feet of natural gas. After Soviet Union dissolution and ending the cold war era in 1991, Caspian Sea became a target region for the major powers including United States, European Union, China and Russia herself. Dominance over the Oil & Gas resources and their transportation routes became the common goals for main players. Particularly Russia and United State both seeking to expand their political influence through their Oil & Gas companies in the region. Moreover as we discussed in the section three, each party is after a different transportation rout for spreading his political influence. Or for instance, European Union and China both have energy security concern and are trying to enhance their energy security by diversifying their energy supply sources. Therefore, each of them conducting their own strategy for different energy transportation rout from Caspian Sea.

On the other hand Iran- Russian political relationship definitely affect the energy geopolitics in the area and without considering it we can’t come to a probable solution. Despite of recent development in Iran- Russia relationship, interest divergence between two countries in Caspian basin still exist and it prevent Iran to play her key role in the region. It seems that Russian policy makers are using the legal status of the Caspian as a leverage to keep back Iran from energy sector of the Caspian Sea because transporting Oil& Gas throw Iran would diminish the Russian influence on oil consuming countries. Russia, Azerbaijan, Turkmenistan and Kazakhstan against Iran (i.e.4+1) is the nowadays political dilemma in legal status which conflicts over captain Sea. In Russia relation with costal countries, Russian Oil Company benefits from contracting and operating in their oil industry and Russian government seeks his influence throw the energy activity also make sure the oil transportation throw Russian pipeline remain still. ..... Azerbaijan, Turkmenistan and Kazakhstan gain more oil reserve from the Sea. In result of such an agreement Iran’s participation in Caspian energy remains low.

These conflicts over the region and the lack of sufficient export options made a bottle neck which slow down the energy development in the area. Due to our discussion in section three about Southern route and its advantages including: 1. As it passes only through one country, i.e. Iran, and not several countries, it is less likely to face safety and security problems and probable disputes among involved countries. 2. It is not aimed exclusively at European markets, thus there is no direct competition with Russian resources and it raises no objection on the part of Russian companies. 3. Not passing through Russia, it makes exporting countries less dependent on Russia. 4. It offers a wider range of buyers in the Persian Gulf in comparison to other routes which export resources only to China or European markets and this will guarantee the safety of their transactions.

We purpose it as a sufficient export option rout which benefits all costal countries with Oil & Gas resource in Caspian region
References