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Some Reflections on NIOC-Gazprom MOU

Signing a Memorandum of Understanding (MoU) between Russia's Gazprom company and the National Iranian Oil Company (NIOC) regarding gas cooperation and development of South Pars gas field has aroused different impressions.

To understand the issue more deeply, it should be noted that former Russian president and the current prime minister "Vladimir Putin" during his presidency called Gazprom a lever of Russia's foreign policy. More importantly, a person who had for years been at the helm of Gazprom or the most important oil and gas company in Russia has now sat in the chair of presidency.

Russia's measures and activities indicate that this country's government is determined to maintain its domination on Central Asia's oil and gas transportation routes and especially maintain its superiority over the European gas market. This is whilst the European Union (EU) has given priority to diversification of the sources and routes of its required gas supply following the crisis of interruption of Europe's gas supply in the winter of 2006. Russia has made widespread efforts to neutralize the Europeans' resolve in this respect and prevent the accomplishment of their decision (this issue has been covered in the previous issues of Eghtessad-e-Energy).

Even the long disputes between Russia and Georgia (which has recently led to military con-

flicts) can also be evaluated in the context of Russia's energy transportation policies. The disputes indicated that if the Turkish government - through applying limitation for transit of tankers from Bosphorus and Dardanelle Straits - can create inconvenience for CPC crude oil pipeline route transporting part of Caspian Sea's crude oil via Russia and the Black Sea to world markets, in the same way Russia can also create restriction and problem for Baku-Ceyhan (BTC) pipeline through applying pressure on Georgia.

Under this condition, Russia's and Gazprom's interest in cooperation with its most important strategic and potential gas rival, i.e. Iran, deserves full consideration.

Iran's gas weight is a heavy one compared to its two main rivals, i.e. Russia and Qatar. The western world, particularly U.S.A., most probably will not tolerate Russia's gas superiority- having both rich resources as well as suitable routes - over the world. Thus, the side of the balance pan (East or West) on which Iran's gas weight rests will greatly influence the geopolitical development of world energy in the future. Certainly, Iran may also be able to play its own independent role. Undoubtedly, the country's authorities will exercise all their endeavors to make maximum exploitation of Iran's gas weight maximizing national interest from this area. But to appreciate the value of this weight, it necessitates recognition and careful examination of the world

energy developments, a short account of which was pointed out. Cooperating with a rival - whose mentality in switching from rivalry to friendship is doubtful - must be carried out very wisely and carefully.

This issue must especially be taken into consideration when changing the contents of MoU into related contracts. Perhaps such carefulness should also be applied in establishing cooperation with Total oil company. Total's extensive presence in world gas markets and LNG as well as the company's broad presence on the other side of common South Pars field in Qatar, creates different and possibly conflicting interests for the company. This may make Total's maneuvers complex particularly due to Iran's specific international conditions.

Perhaps this question about Total could also be asked with respect to Gazprom: Does the interests of Russia and Gazprom really lie in development of Iran's gas capacities? Or it may be possible that the company has an incentive to gain time in this

respect? Another important question to be raised is whether Russia prefers entrance of Iranian gas into Europe via this country or participation with Iran in Europe's gas market? Or in principle, it prefers to lead Iran's gas to other markets such as the markets in East Asia?

Russia required enormous investments for development of its gas reserves during the past years for continuation and promotion of its presence in European energy markets. However, this matter has not been fulfilled due to limitation of Russia's financial resources. But the Russians have put on their agenda the policy of controlling and managing resources of rival countries to substitute for the shortage of their own gas resources. They have pre-purchased the gas from all the central Asian countries by any means and even with very high prices for the next 20 or 30 years so that besides increasing Russia's presence in European energy scene, they can feel sure of the elimination of their potential rivals.



Cooperation with Gazprom is in fact nothing other than collaborating with the Russian government. Therefore, in cooperating with Gazprom, experiences from past collaborations with Russia should be taken into consideration. Unfortunately this experience does not suggest that the Russians are trustworthy in their long term collaborations. The Russians played a double role in Iran's nuclear dossier. Also in many instances including during the recent Georgia crisis, the Russians gave signals to the U.S.A and the West that they are prepared to make a deal with respect to Iran. Thus, any kind of agreement with Gazprom must be concluded considering all the issues between Iran and Russia.

The current foreign political conditions regarding Iran are temporary and transitory. Thus, long term commitments should not be made for the country under the influence of these conditions. On the other hand, if the country of Iran faces limited options for cooperation and conclusion of contract as a result of sanctions, Russia is also in a situation whereby cooperation with Iran can remove many of its bottlenecks. Since Peter the Great (Russian Tsar in the 17th & 18th Century), gaining access to warm waters has been one of the main aspirations of Russian politicians. They have always - and within the framework of any government structure - pursued every means to achieve this aspiration. Thus, it will surely be useful for them if a condition is prepared in which they can establish a long term presence in the southern ports of Iran.

The Gazprom company's capabilities should also be taken into consideration. What is the previous record of this company in implementing projects independently and making large upstream investments outside Russia and to what extent it has been successful? What are the successes of this company in implementing such projects inside the Russian

territory?

Closer cooperation between ministries of petroleum and foreign affairs and more active relations between the petroleum industry and the country's diplomatic system can be advantageous in replying to such questions and optimizing the national interests. Thoughtful selection of the first cooperation areas within framework of the MoU can also be a good exhibit for evaluation. The initial step for mobilization and manner of the work progress can be a test for evaluating desirable field of cooperation during the following steps.

Statements and positions of government officials during negotiations should be in such a way as to strengthen the bargaining power of negotiating team instead of weakening it. During negotiation for Iran's gas export to Pakistan and India, known as the "Peace Pipeline", Iranian President in his visit to Pakistan promised the former President of that country that if the Iranian negotiating team failed to reach agreement with their Pakistani and Indian counterparts within 45 days, he would personally get involved in the negotiations and finalize the agreement. Naturally, such a position weakens the bargaining power of the Iranian negotiating team since the other side may try to gain time during negotiation if it considers the situation is not to its advantage.

The final word is that to what extent Iran's international relations, especially with the Western world led by America, and arguments and pressures over its nuclear dossier will affect Iran's decision-making. It is natural if Russia, being aware of these pressures, expects flexibility from Iran. Meanwhile, both sides are aware that Iran is in a position to make a choice that could strengthen or weaken the exclusive status of Russia in this field.

Director

Caucasus Crisis and Reconsideration of Oil Routes

Behrouz Beik Alizadeh

ension across the Caucasus has been a top issue in the oil market during the last weeks. The leading event was Baku-Tbilisi-Ceyhan (BTC) pipeline blast in Turkey on August 5 which disrupted the oil flow and spilled over into unease in the market. Following the explosion, the British energy giant BP, which operates the pipeline, announced the state of emergency in recovering Azerbaijan's oil. The capacity of BTC pipeline is estimated at one million barrels per day (bpd). Turkey's separatist Kurds claimed responsibility for the bombing. According to the BP, it would have taken two weeks to have the BTC pipeline back in service. Thereby, the company shut down recovering 400 thousands barrels a day in the Azeri-Chirag-Guneshli oil field.

The next week ended at August 15 the Russian invasion of the former Soviet republic of Georgia drew the market's attention. Russia invaded Georgia to retaliate the Georgian incursion into the breakaway South Ossetia a week earlier in which two thousands of people were killed.

The probability of a longer halt in the Caspian crude recovery, due to the rising tensions in the Caucasus, disrupted the oil market once more.

After leaving the South Ossetia on August 10, Georgia called for ceasefire, however, the turmoil shut down the oil exports in the region.

Russia deployed its warships around Georgian corridors. Supsa and Batumi, two Georgian ports, nearly closed down their trades. Kazakhstan, another former Soviet republic, no longer shipped its crude

from the Georgian port of Batumi. On August 9, the Azerbaijan's national oil company SOCAR halted its oil flow throughout the ports. Besides, Russian forces blocked access to the port city of Poti. Part of the crude of Kazakhstan and Azerbaijan delivered by the BTC pipeline to the European countries was suspended by the blast. Actually, there have been still flames burning the area since the pipeline had exploded.

On August 12, a day before French President Nicolas Sarkozy's visit to Moscow for brokering peace talks, Russian President Dmitry Medvedev agreed to a ceasefire. However, Georgian officials dismissed the reports, claiming they were still under attacks. The following day US President George W Bush called on the Russian government to solve the crisis overshadowing US-Russia ties.

The BP temporarily shut down an oil pipeline and a gas pipeline crossing Georgia for fear of any possible damage, though it claimed that the pipeline had been remained safe. The conduit also known as the Western Route Export Pipeline pumped Azerbaijan's crude from Baku to Supsa, on the Black Sea, and shipped 155 thousands barrels per day.

Peace talks commenced August 14 with Russian troops still occupying critical regions across the oil and gas arteries. Although gas export from Georgia to Turkey was reopened by the BP by the end of the week, no oil was exporting there. According to the head of the SOCAR, an oil-tanker shipping Azeri crude from the Poti corridor had been stopped by Russian warships.

In spite of Russia's pledge on pulling out all troops from Georgia on August 18, there was no evidence



confirming Russians' claim by the end of the week.

Worsening conflicts coincide with a blockade in Azeri oil rail deliveries to Georgia as a rail bridge was destroyed in the war. The BP announced the shut.

US signed a deal with Poland to build a missile-interceptor base there, despite bitter opposition from Moscow. In riposte, Moscow warned it would respond beyond diplomatic manners.

The market still concerned about the Russia-Georgia conflicts in late August. Having the majority of Russian troops left Georgia, analysts believed that since all Russian soldiers have not withdrawn from Georgia, the concerns would linger, especially as Russia has brushed aside US warnings on a complete withdrawal of its forces. Oil export from Azerbaijan through Georgia was still suspended due to a blockade imposed by Russian siege. During the last week of August, Russian parliament recognized the two pro-Russia separatist Georgian provinces, South Ossetia and Abkhazia, as independent states, an act which analysts believed would fuel more tensions. On August 29, British Daily Telegraph quoted an anonymous source as saying that reacting to the European threat on abandoning Russia, the country has ordered at least one of its oil companies to prepare itself for a stoppage of its oil exports to

Europe. However, the comments were refuted by the Russian energy minister and head of the Lukoil Oil Company. On the last day of August Russian president stated that his country does not seek confronting the West, but it will retaliate if attacked.

All in all, it seems that the Caucasus crisis brings the below points forward:

1. The tussles in Georgia, whose shockwaves made the energy world quake, engaged the Central Asia in unpredictable political concerns. Russian invasion of Georgia laid bare the fact that diplomatic transitions are no longer in the hands of the West and Russia. It was even defined by some analysts as a new cold war. At the moment, the question whether to recognize the two breakaway regions of South Ossetia and Abkhazia as independent states is not deemed imperative. The main point is that who is to rule the former Soviet territory. For sure, the West would be loath on the Russian sovereignty over the Central Asia's oil route.
2. Undoubtedly, Russian blitz has been the toughest reaction to the strategies employed by the US in the region thorough which it sought controlling oil reserves of the Central Asia and securing oil exports. Through all these years, the

US endeavored to develop a passage for pumping the Central Asia's oil to the West without crossing Russian and Iranian soils. Many believe that the tensions signaled further instability across the Caucasus. One can draw a parallel between this region and the Balkan. In long term, supplies fragility would dampen investors' enthusiasm for injecting more billions of dollars into planned upgrades. Furthermore, hydrocarbon supplies in the Caspian region and Russia would concerns the market. Countries to feel the concerns primarily would be the Europeans since Russia makes up 57.6 percent of their imported gas.

3. Russia-Georgia fight and Turkey's unrests have brought up the pipeline security as a top issue to ponder. During the twenty-day-long blockade of BTC pipeline and other routes having crossed Georgia, the oil was ported within other channels. In the north of Georgia, Baku-Novorossiysk pipeline partly compensated the stoppage of BTC's oil flow by exporting Azeri crude. However, it was not a proper solution since the pumped oil had to be mixed by Oral Oil which is lower in quality. Moreover, the Baku-Novorossiysk pipeline holds the maximum capacity of 100 thousands bpd. The other route for transiting the oil bypassed Iran. The West did its best not to utilize this route, although the route seemed tempting.
4. Re-directing Azerbaijan's transit route, northern city port of Neka received the first oil cargo from Azerbaijan on late August. Managing director of the National Iranian Oil Terminals Company Mousa Sourì reckoned the swap capacity of the Caspian Sea at 45,000 bpd, predicting it will hit 100,000 bpd. According to the managing-director, 200,000 barrels will be swapped in the Neka oil terminal by March 2010. SOCAR ships Azeri light crude from the Azeri-Chirag-Guneshli field across

the Caspian Sea to Neka, while Iran ports an equivalent volume from its Persian Gulf oil terminals. Tough stance by the West, especially the US, culminated in the construction of the uneconomical 1700-kilometer-long BTC pipeline. However, recent events demonstrated that it lacks security.

5. Exporting via Iran appears to be a proper option with potential for capacity expansion and since it is not considered as investment in Iran, UN sanctions could not affect the process. Based on US laws, over 20-million-dollar investment in Iran is barred.
6. Roughly 170,000 barrels of Kazakhstan's crude is being exported via Iran every given day. According to the agreement, Iran uses the delivered oil in its northern refineries and exports an equivalent volume out of its oil terminals on Kharg Island in Persian Gulf. Reportedly, SOCAR has planned to exports 2.2 million barrels of Azeri light crude via Iran in two months. But having the BTC pipeline reopened, volume of the swapped crude would drop. With the fragility dominated the Caucasus, the most rational decision for Azerbaijan is to sign a long-term MOU with Iran and not to pose its oil industry on the brink of predicament regarding US opposing the transit of oil through Iran.
7. Iran could be more active vis-à-vis the crisis in the Caucasus. The instability in the region is benefiting Iran as a transit route for exporting oil of the Caspian Sea. Moreover, Iran could raise its position in securing supplies owing to the fact that transiting such strategic commodity (oil) elevates the country's strategic position to the extent that its role in quelling tensions in the region would gradually turn inevitable. Besides, Iran could refine the swapped crude in its northern populated areas, thus no need for delivering oil from southern areas to the north refineries.

Iran to buy Turkmen gas at floating price

Iran has announced that it will switch to a floating price formula in its natural gas purchases from Turkmenistan in January 2009.

“Iran currently buys Turkmenistan gas at a fixed price but will switch to a “floating” price formula from the beginning of

next year. Prices will be linked to the price of various oil products, mainly gas oil and fuel oil,” National Iranian Gas Company Director Seyyed Reza Kasaei-Zadeh said in an interview with Petroleum Intelligence Weekly.

According to the Iranian energy official, Tehran has a long-term plan to increase its annual imports of nearly 9.2 billion cubic

meters of Turkmen gas to a maximum of 14 billion cubic meters per year.

Turkmenistan cut gas exports to Iran in January 2008, citing technical problems; Ashgabat later resumed its exports to the country but demanded an increase in prices.

Iran gets about 5 percent of its gas needs from Turkmenistan.

Salakh gas field development on ICOFC agenda

Iranian Central Oil Fields Company (ICOFC) plans to develop Salakh gas field, located in Qeshm Island in the Persian Gulf on the buy back mode. According to ISNA, by imple-

menting the development project, the field could produce 3.3 mcm/d of natural gas. The project is due to take 3 years to complete.

Earlier, last week Mahmoud Borzoo, director of engineering and construction of ICOFC had said: “Next week, ICOFC

will be holding an international tender worth over \$ 5 Bln for the development of 14 of its oil and gas fields”. The tender was included Salakh gas field as well.

Salakh gas field was discovered in 1963 and houses Sarvak, Dariyan and Fahliyan formations

Iran, Armenia and Russia to look into new oil pipeline

According to the Armenian Industry and Energy Ministry, Iran, Armenia and Russia investigate the joint oil pipeline construction project. This was reported by Iranian ISNA news agency.

“At present, the trilateral special commission from Armenia, Iran and Russia on construction of an oil refining in Armenia, has commenced investigation to lay an oil pipeline,” Armen Movsisyan, the Armenian Industry and

Energy Minister, said.

The oil refining, which is expected to be built in Armenia,

will produce 7mln tons oil per year. Construction’s cost is \$2.5bln or \$3bln.



Iran turns up the heat on Crescent Petroleum

Iran's government ratcheted up the pressure on the UAE's Crescent Petroleum this week, by demanding substantially higher prices to start natural gas exports to Sharjah.

Ali Kordan, the minister of the interior for Iran, who is participating in the negotiations with Crescent, warned that the country would consider selling to other markets in the region if the UAE were not willing to increase prices.

"Signing this agreement in the

current condition is definitely harmful to Iran," Kordan told the daily Kayhan in remarks published today.

"We succeeded in increasing the price many fold, which totals US\$1.2 billion (Dh4.4bn) in Iran's benefit, even though none of this has been finalised," he said.

Kordan's remarks came a day after Gholamhossein Nozari, the Iranian oil minister, said the price in the agreement was not yet finalised, and is the latest rhetori-

cal shot in a two-year dispute over the start of gas exports to the UAE from the offshore Salman gas field.

A pipeline to transport 600 million cubic feet of gas per day to Sharjah has been empty since its completion in 2006.

Iran itself is short of natural gas for electricity generation, but it also had limited export options due to its international isolation, said Samuel Ciszuk, an analyst at Global Insight in London.

coming October, shares of North Drilling Company (NDC) will be floated on the stock exchange, says Ali Kardor, head of special committee' in NIOC for the privatization of state-run petroleum companies, Fars

News Agency reported.

PetroPars and PetroIran were initially planned to be sold off in December 2007. NDC also was planned to be floated on bourse in the same month.

PetroPars and PetroIran sell off delayed

By the end of this year, Iran's PetroPars and PetroIran companies will be sold off in tenders, and by late

Construction work on Iran-Armenia gas pipeline completed

Construction work has been finished on Iran-Armenia gas pipeline. Armenian specialists investigate technical questions for the construction of pipeline from Kacharan, the boundary region to Yerevan, at present, Iranian news site IRIBnews

reports.

Testing of transportation of Iranian gas will begin within the next few days.

"Armenia will receive from 2.3 billion to 2.5 billion cubic meters of gas from Tehran through this pipeline a year," Armen Movsisyan, Armenian Minister of Industry and Energy, said.

"The opening of the Iranian-Armenian pipeline will guarantee

the energy safety of Armenia", he noted. According to Movsisyan, pipeline will secure Armenia from energy problems in the cases of crisis.

Armenian Minister of Industry and Energy also reported about signing of a new gas agreement with Russia. However, Movsisyan did not mention the price for gas, indicated in the agreement with Russian Federation.

Interview with director for refining affairs at the National Iranian Oil Refining and Distribution Company

Three Steps to Self-Sufficiency in Gasoline Production

*H*aving a record of nearly a century, Iran's refining industry was formed following construction of Abadan Refinery in the year 1912. Possessing 9 refineries, today the industry is responsible to provide the country's oil products. During recent years, the issues of self-sufficiency in gasoline production and improving quality of oil products have become a priority for the people in charge of the refining industry. Useful measures have been taken in this respect. In the following interview conducted with "Mashal", director for refining affairs at the national Iranian oil refining and distribution company (NIORDC) Aminallah Eskandari has described details of the performance and achievements of the directorate.

How much is the yearly output of the country's refineries?

Based on a plan notified to the oil refining companies, on average 1.656 million barrels per day (mbpd) of crude oil had to be refined in 2007. But through endeavors of the employees, the country's refineries managed to refine crude oil higher than the plan converting 1.658 mbpd of crude oil into oil products.

In 2007, the refining affairs of NIORDC produced on average 44 million liters of gasoline per day, about 81 million liters of gas oil, more than 78 million liters of light and heavy fuel oil, 3 million

liters of jet fuel and 21 million liters of kerosene for heating and industrial uses.

Quantitatively, NIORDC has been able to attain figures higher than operational capability considered for this company. Has any plan been implemented and succeeded regarding improvement in the quality of oil products?

Production of products by refining companies is based on standards approved by NIORDC.

Such standards become updated continuously. Currently, production of oil products is almost based on Euro 2 standard. We shall attain Euro 4 and Euro 5 standards following implementation of development projects in the refineries.

To achieve this target, updating the country's refining design is necessary. In this regard, the refining management has some plans on the agenda. As an example, oil refining companies on average convert 29 percent of crude oil into fuel oil having distance of about 19 percent with international standards. One of our objectives is to bring this figure down to about 10 percent (equal to international standards) by the year 2012. A widespread effort is underway in all the country's refineries to reach this target.

Testing products' characteristics have always been on the agenda in the refineries and quality certificate is issued for each product tank.

What are the most important plans in the

refining sector in the current year?

The country's refineries are expected to refine and process 1.650 mbpd in the year 1387 (2008). Thus, production ceiling in the refineries is a priority. Promotion of know-how and ability of all the personnel, advancement of HSE culture, creation and consolidation of cooperation mentality as well as freshness in the companies are also amongst the company's goals. Another objective of refining directorate is to implement development projects in the refineries. Of course, part of the said plan is within the responsibility of the refineries and other part is within the duty of national oil engineering and construction company. Based on the planning, we are considering raising the production of the oil products' capacity from 1.6 mbpd to 3.3 mbpd by the year 2012. Construction of seven new refineries with a credit of more than 15 billion euro is planned. Development projects also require an investment of 7 billion dollars. To attain these goals, different course of actions have been adapted. Making use of foreign and domestic partnership, finance, participation papers, using resources from foreign exchange reserve fund and using internal resources of NIORDC are among the chosen course of actions.

Could you elucidate the latest situation of development projects in the refineries?

A- The development project in the Abadan refinery has so far had more than 40 percent physical progress. In the Arak refinery, crude oil refining will be raised from 175,000 barrels per day (bpd) to 250,000 bpd. The progress of this project has also been satisfactory. The project for process improvement, optimization and elevation of the quality of products in the Isfahan refinery has been defined and its engineering activity has commenced.

Bandar Abbas refinery raised its output capacity

to 320,000 bpd in May 2008. The project for improving quality of gasoline has been defined and engineering works, procurement of goods and executive operations have been commenced at Tehran, Tabriz and Lavan refineries.

What is the state of affairs with respect to refineries under construction?

The Setareh-e- Khalije Fars refinery with a refining capacity of 360,000 bpd of condensate is under construction in Bandar Abbas in partnership with the private sector. Hormuz refinery is another refining company which is being designed in Bandar Abbas with a capacity of 300,000 bpd based on extra heavy oil from Soroush and Nowrouz oil fields. Khuzestan, Pars (in Shiraz) and Anahita (in Kermanshah) refineries each with capacities of 180,000, 120,000 and 150,000 bpd with feedstock of heavy oil, condensate and light oil respectively are under basic engineering design. Caspian refinery is under designing stage in the north of the country (near Neka port) in partnership with the private sector with a refining capacity of 300,000 bpd of crude oil from countries bordering the Caspian Sea. Meanwhile, the construction of Shahriar refinery with a refining capacity of 150,000 bpd has had an acceptable progress.

In view of the planning made, we shall attain self-sufficiency in the production of oil products particularly gasoline. It is expected such projects will be fully operational by the year 2012.

Which standard will be observed in the design of these refineries?

The quality of produced products in the country's refineries correspond to about Euro 2 but our objective is to produce oil products based on Euro 4 and Euro 5 standards.

It is also planned to produce the least amount of fuel oil. As an example, Hormuz refinery (one of refining companies) will not at all produce fuel oil.

In constructing new refining complexes, the production of least amount of fuel oil is seriously pursued. Special attention to environmental issues, high quality products and making use of the best and latest technologies available in the world to produce most valuable oil products are considered as the most important goals in constructing new refineries.

What points have been taken into consideration in finding locality of refineries?

Several points are observed in this respect. Proximity to consumption markets and short distance with crude oil resources play a fundamental role in choosing location of refineries. Accessibility to pipelines and rail is another essential case in determining location for constructing refineries. In our new projects, we have also tried to construct refineries beside each other so that they could jointly benefit from investments which will be made.

What do you mean by joint investment in this regard?

In constructing every refinery, service units should be established beside it. These units include fire brigade services, water, electricity and other side services. Under this plan, a significant saving in the expenses for constructing a new refinery will be accomplished.

What is the cost of building a refinery now?

Under current conditions and due to various reasons, the cost of building a refinery has been increased. Various crude types and the processes used to produce oil products have a determining role in the expenses involved in constructing a refinery. At present, the expenditure for building a refinery is estimated at between 18000 to 24000 dollars per barrel. Certainly, this depends, among other things, to geographical location of refinery and the degree of refinery complexity

On the whole, various variables influence this process. If refining companies and petrochemical industries are located beside each other as an aggregate, these complexes will be in a better



position to make a profit.

For example, since 1975 Japan has not constructed a new refinery. During the past 33 years, this country has managed to advance its refineries with regard to the quality of products and production of oil and petrochemical products. In fact, they have made use of petrochemical products in order to raise added value of oil products.

It is said that a desirable trilateral cooperation has been shaped in the government between ministries of petroleum, industries and commerce based on which ministries of industries and commerce have been charged with a duty to import a large number of light weight diesel automobiles and start designing light weight diesel engines for manufacturing in the country. Ministry of petroleum has also been obliged to supply high quality gas oil for these automobiles. Are the country's refineries ready to produce high quality gas oil?

As it was mentioned, there is a beneficial trilateral cooperation in this respect. The ministry of petroleum and national refining and distribution company has the most contribution. The national refining and distribution company has provided financial resources for designing light weight diesel engine. Based on this cooperation, the design base of the national diesel engine has been determined and in parallel, the production of gas oil has begun. We have announced our readiness to provide high quality gas oil with low sulfur content and intend to allocate stations for the supply this product.

What was the situation of the country's refineries with respect to bringing a return last year?

The crude oil delivered to refining companies

and sale of their products has been considered in the refineries' balance sheet based on world prices. Last year, the cost of each barrel of delivered crude oil was fixed and recorded as 93.7 percent of the international price. The value of the company's produced product had been 44 billion dollars considering subsidies. From this point of view, the national refining and oil products' distribution company has been the greatest selling company affiliated to the government.

How much is refining cost and amount of profit in return for each barrel of crude oil?

Based on last year's balance sheet, the cost of refining each barrel of crude oil is between 1 to 1.5 dollar. The rate of profit depends on various factors such as the refining pattern. Based on last year's financial balance, the country's refineries on average made a profit from 2 to 6 dollar per barrel. Isfahan and Tabriz oil refining companies were the best among the country's refineries in this respect.

As a last question, how much are you satisfied with the performance of local contractors?

Iranian contractors have been able to adapt themselves with the conditions very well. Our first priority is to benefit from local companies. Also at times, some contractors have not been able to fulfill their commitments as expected. As a result, some projects have faced delays. Also sometimes the Iranian companies lack the required services due to the size of the work. So in some projects, some stations and services had to be supplied from abroad. Even in such projects, the national refining and distribution company makes proper planning to gradually increase the capability of local companies and prioritizes local manufacture, domestication of technical know-how and management.

Caspian Energy:

Is It Important for Energy security or not?

Mansoureh Raam, IIES

Abstract

Today, oil and gas reserves are considered an important issue in the world. Not only does it intensify apprehension of the government officials over development of oil and gas, it is also in the focal point to consumer countries' attention. Economic growth and development have always been two basic slogans of governments since exploiting the God-given oil and gas reservoirs is considered a means of materializing such slogans.

In recent years, discussions over oil and gas reserves in the Caspian region has become one of the most important regional and international topics. Studies show that proven oil and gas reserves in the region are less than 50 billion barrels and gas reserves are estimated at about 230 trillion cubic meters. Although, there has been a lot of exaggeration about the size of reserves when western countries and multinational companies came to the region, it became evident that the volume of Caspian oil and gas reserves was less than 5% of the global reserves. Given the fact that the small volume of reserves in the region can not be very influential in the global markets, why is the region put at the heart of westerners' attention?

Is there any possibility that the Caspian region be a globally thriving supplier due to increasing demand for energy in the world? And, what are the impediments to production and security of energy in the region?

Geopolitics of the Caspian region

The Caspian region comprises of Caucasus, northern terrain of Iran and west of Kazakhstan and Turkmenistan in the Middle Eurasia. The region is located in one of the worlds' most politically and economically crucial areas. It is also neighboring the giant consumer markets in Europe and Asia which is extended from Caucasus in the west to the Middle Asia in the east. The two regions are separated by the Caspian Sea.

Caspian littoral states are Azerbaijan, Kazakhstan, Turkmenistan, Iran and Russia.

Although, Uzbekistan is not located at the coast of the Caspian Sea, it is deemed as the region's largest natural gas producer and is therefore included in the region for the purposes of this analysis. Similarly, there are some other neighboring countries that play a key role in supplying the global markets with oil and gas.

At a glance, countries in the Caspian Sea region are considered relatively minor oil and gas producers in the world, currently encountering severe economic and political problems. Following the collapse of the Soviet Union, the economy of these countries declined consequently. However, the GDP of the region's oil and gas producing nations has grown in recent two years, compared with their GDP before the Soviet collapse. Improved conditions depend, in large part, on the successful development of the region's oil and natural gas potential. The Caspian oil and gas reservoirs have transformed the region to a competitive environment for all the powerful indus-

trial nations and multinational companies in having access to the reserves. In addition, many of the developing countries are struggling to gain a foothold in the area to strengthen their position in the Caspian region.

Caspian oil

Following the Soviet collapse, major initial overstatements were made about the Caspian oil and gas reserves, however, later the region turn out to host only a limited hydrocarbon reserves. Studies by the Energy Information Administration (EIA) suggest that the proven oil reserves in the region are from 17 to 44 billion barrels. Based on the EIA studies, the probable oil reserves in the region are estimated at about 186 billion barrels. Thus the region's proven and probable reserves are 203 billion barrels in the worst scenario and 235 billion barrels in the best one. It is worth mentioning that the recent EIA estimates are more than those made by other concerned sources.

In the late 1990s, the Caspian region had a relatively fast growing oil production. In 2005, Kazakhstan and Azerbaijan contributed to 67% and 22% of the region's oil respectively. Based on BP statistical review, the proven oil reserves in the region are 48 billion barrels. This is about 4% of the global reserves and more than the US total oil reserves (29 billion barrels) (BP, 2006). In 2005, the region contributed to

2mnb/d. It is expected that in 2010, the Caspian Sea countries' production reach a sum of 2.4 mnb/d to 5.9 mnb/d (EIA 2007). On the other hand, Kazakhstan and Azerbaijan have made major investments in the region and the production level of the region is expected to grow in the following years.

The picture below shows short-term predictions of EIA where the growth in oil production by Kazakhstan and Azerbaijan in 2007 and 2008, thanks to their investments in the oil sector, is noticeable.

Ashgabat and Tashkent plan to rely less on foreign investment, despite their proven oil reserves are relatively small. Therefore, although multinational companies are operating and developing numerous projects in Azerbaijan and Kazakhstan, reserves in Turkmenistan and Uzbekistan have undergone limited development. Besides, there has not been a very noticeable progress in oil and gas sectors in Iran and Russia, regardless of the reports on exploration attempts in the countries.

Natural Gas

The Caspian Sea region's natural gas potential is, by some measures, more significant than its oil potential. Regional proven natural gas reserves are estimated at 232 trillion cubic feet (tcf), comparable to those in Saudi Arabia. Natural gas production in 2005 was more than 5tcf. (EIA 2007)

Before collapse of the Soviet Union, the region

Table 1. The Caspian Sea Oil Reserves (billion barrels)

Country	Proven Reserves		Probable Reserves	Total Reserves	
	Lowest	Highest		Lowest	Highest
Azerbaijan	6	7	32	39	39
Iran	0.1		15	15.1	
Kazakhstan	9	40	92	101	132
Russia	0.3		7	7.3	
Turkmenistan	0.55	1.7	38	38.55	39.7
Uzbekistan	0.3	0.59	2	2.3	2.59
Total Caspian	17.2	49.7	186	203.2	235.7

Table 2. Caspian Oil Production (thousand barrels)

				Minimum Estimate	Maximum Estimate
Country	1992	2000	2005	2010	
Azerbaijan	222	309	440	900	1290
Iran	0	0	0	0	
Kazakhstan	529	718	1293	1900	2400
Russia	N/A	11	N/A	200	
Turkmenistan	110	157	196	165	450
Uzbekistan	66	152	125	150	260
Total Caspian	927	1336	2054	3315	4600
Total World	68102	74941	81088	91600	

used to account for more oil vis-à-vis its production after the collapse. Turkmenistan supplying 2Tcf in 2005 (two fifths of the gas production in the region) is the biggest gas producer in the region.

Because capitalization costs for natural gas projects are relatively less than those for oil projects, companies and states in the Caspian Sea region try to expand their oil reserves in comparison to those of natural gas. The reason for the differences in costs is due to lack of proper substructures for natural gas transportation. Accordingly, there has not been a noticeable advancement in gas production since the Disintegration.

Unlike oil, proven natural gas reserves in the Caspian Sea region have a relatively higher harmony with their production level. In some cases, explorations for oil ended in finding gas reserves. BP statistical review for the late 2005 shows that there is 257Tcf or 4% of the global reserves (BP, 2006). Today, gas production is not making a fast progress in the area; this indicates the presence of some obstacles on the way to its development similar to those in oil industry. Still, with only one major foreign investment focusing primarily on natural gas (Azerbaijan's Shah Deniz), the region will need

considerable investment in upstream projects and export infrastructure before its full potential can be realized.

Slow progress in the region's gas production can be traced in a small increase in gas production of Uzbekistan and Turkmenistan since their independence. After 1991, fluctuations of natural gas production in the Caspian Sea region were mostly from Turkmenistan. It was difficult for the country to compete with the Russian gas giant, Gazprom. Since all of the pipelines connecting the region to world markets were owned by Gazprom and routed through Russia, Turkmen natural gas was squeezed out of the market. As a result, Turkmenistan's incentives for increasing its production of natural gas disappeared. The country's output dropped

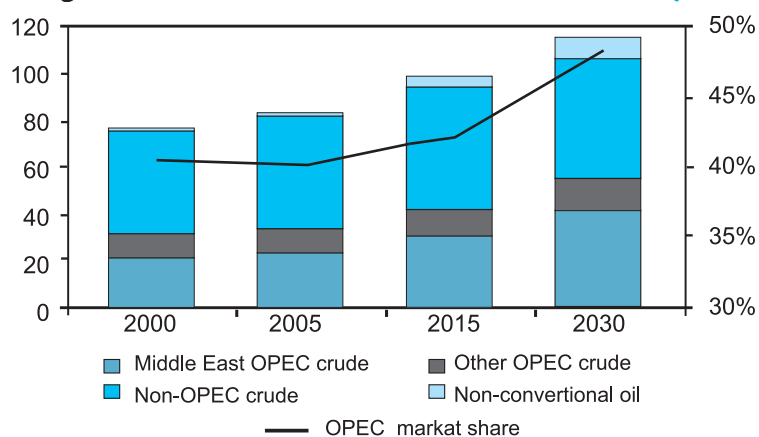
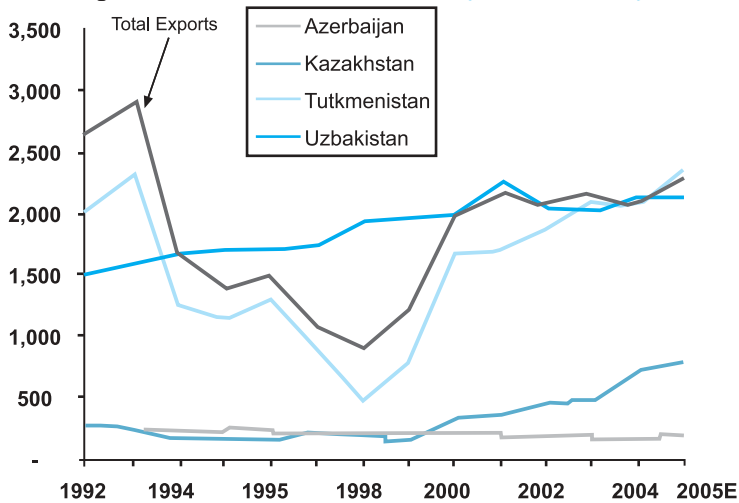
Diagram 1. Outlook of the Growth in Oil Production by 2008

Diagram 2. Gas Production and Export from Caspian

throughout the 1990s, plummeting from 2.02 Tcf in 1992 to just 466 billion cubic feet (Bcf) in 1998 when the country was locked in a pricing dispute with Russia over the export of its natural gas. In 1999, a Turkmen-Russian agreement took hold, and in 2000, production skyrocketed to 1.64 Tcf before reaching 2.3 Tcf in 2005 (BP, 2006).

The diagram below illustrates gas production and export in the Caspian Sea region from 1992 to 2005. The fluctuations in production for Turkmenistan and Uzbekistan are clearly shown in the diagram.

Uzbekistan has maintained natural gas production growth by avoiding Russia's pipeline system and by concentrating on the domestic market and exports to its immediate neighbors.

Azerbaijan and Kazakhstan plan to increase their own natural gas production significantly by 2010 in order to become net natural gas exporters.

Azerbaijan's major natural gas production increases in the future are expected to come from the development of the aforementioned Shah Deniz field.

Kazakhstan's natural gas production increases are expected to come primarily from associated natural gas at Kazakhstan's three largest fields: Tengiz, Karachaganak, and Kashagan.

Caspian states are not economically the same; this has the greatest impact on the region's geopolitics.

Due to economic shortages in the newly-independent states for buying gas from Turkmenistan, the country needs to have exports to the southern states of the Caspian Sea like Iran, India or western countries (Turkey and Europe). On this account, the extraction and transportation of oil and gas is influenced by the regional geopolitics and the players that fuel competition for dominance on the region. Regarding the high oil and gas potentials in the region, Westerners rush into the area to

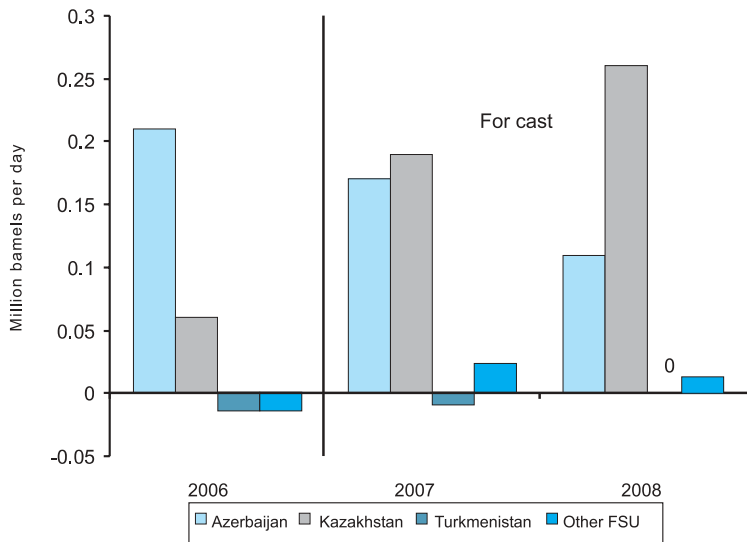
find cheaper and more reliable oil and gas sources in the Persian Gulf.

A reason behind the significance of the Caspian energy resources is the area's geographical facility with regards to transferring the resources to consumer markets in west and diversification of the energy resources, particularly those in the Persian Gulf, to consumer countries. Although it would take 10 to 20 years for Caspian oil exports to reach 3 to 4 million barrels, the activities in exploration, extraction and transfer of the Caspian oil reserves are in the focal point to many considerations and huge amounts have been spent for study and evaluation of them.

Outlook of the demand for crude Oil and natural gas demand

International Energy Agency (IEA) expects the primary oil demands to grow 1.3% from 2005 to 2030; demands will be 99mnb/d in 2015 and 116mnb/d in 2030 while in 2005 they will be 84mnb/d. China with 3.4% and India with 3% demand growth will be the biggest demanders (IEA, 2007).

According to BP reports, by the end of 2006, 81.6mnb/d of oil was produced. OPEC contributed to 41% of the supplies and was the world's biggest

Diagram 3. The Outlook of Global Oil Supply by 2030

supplier. Oil consumption in the same period was 83.7mnb/d, of which a sum of 49mnb/d (58.1% of the total) was directed to the OECD countries. The United States consuming 20.6mnb/d (24.1% of the amount) was the biggest oil consumer in 2006. The proven oil reserves in this period were more than 1200 billion barrels in the world; 74.9% of which was located in OPEC member countries: Saudi Arabia with 264 billion barrels, Iran with 137.5 billion barrels, Iraq with 115 billion barrels and Kuwait with 101b are considered the biggest holders of the reserves (BP, 2007).

Demands for natural gas will have a 2% growth from 2004 to 2030, according to IEA which will be less the demand growth in 1980-2004 (which was 2.6%). The biggest consumers will be the African and Middle Eastern countries as well as the developing states in Asia, particularly China. The Middle East will be the main consumer in this period aiming to provide its power and petrochemicals sectors with natural gas; however, in 2030 the OECD states will be leaders in the global gas markets.

It is quite clear that the demand for oil and gas in the coming years will grow significantly due to the growing demand by OECD transportation sector

and the rapid economic growth of the developing countries in Southwest Asia.

For that reason, the principal challenge for consumer countries will be to diversify their oil and gas resources. Therefore the Caspian reserves, even if modest, can be influential in providing the consumers with energy.

Outlook of crude oil and natural gas supply

With mounting demand in the coming years, oil supply will grow as well. OPEC states will have a larger

share in supply of oil with regards to their large reserves. Today, they supply 40% of the global demand. In 2015, OPEC will contribute to 42% of the world demand and by 2030; the call for the Organization's oil will be 48%. Saudi Arabia will remain the biggest oil supplier in the coming years.

Although investment in the Caspian Sea region is made by Kazakhstan and Azerbaijan but more than half of oil demand is accounted for by OPEC.

By the end of 2005, the proven gas reserves are estimated about 180 trillion C which can supply the demands for 64 years. Almost 56% of natural gas resources are related to Russia, Iran and Qatar. The surface of natural gas global resources has grown more than 80% in comparison with past two decades. The growth has been in Russia, Central Asia and Middle East which caused by exploration in there. Natural gas producing in Africa and Middle East has a considerable growth. Regarding to the investments in oil and gas sector of the FSU countries, it is anticipated that during ten years later they can have a colorful presence in energy markets.

Energy carriers are bought and sold in the global energy markets. It means that if supply of oil and gas increase, the prices would be reduced. On the

contrary, when oil and gas supply is decreasing, prices and demand would increase. Of course, besides these factors, there are other factors that affect the global energy market: economic and political crises which destabilize the market.

In some cases there are profit conflicts between exporting and importing countries in the energy markets. On the one hand, exporters try to control the supply level in order to ensure the prices and demands. In fact, this group is pursuing the stability of prices and on the other hand; consumers are trying to increase the supply side, energy saving and adjust the prices by some organizations like IAEA (International Atomic Energy Agency). As time goes by, the importance of oil and gas resources becomes more evident. Generally, the position of oil and gas resources in global energy markets is influenced by two factors:

1- Exploitation of oil and gas by consumers, in order to put political and psychological pressure on exporters of these resources to provide energy security. Energy security has become an important topic in these years, as a result of demand increase. Consequently, consumers are pursuing to diversify energy resources in order to boost energy security

which makes important the position of Caspian Sea resources.

??The regional and international powers Control on Caspian Sea countries by controlling the region resources.

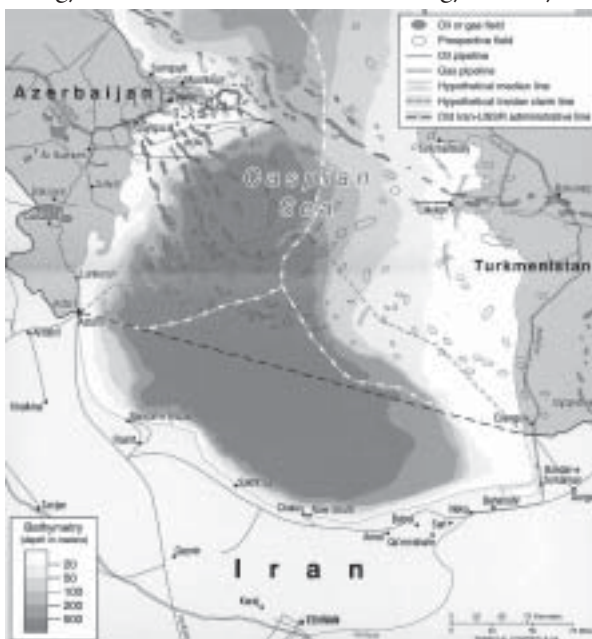
Constantly, in order to put pressure on exporters, oil and gas consumers try to discover alternative resources. Oil and resources lying in the Caspian Sea are even bigger than those in the North Sea, which are considered an important alternative resource. Therefore, after the Soviet collapse, international competition reached its climax where other players with the aim of gaining control over exploitation and exporting these resources emerged.

Before 1991, the Caspian Sea oil and gas resources were not under consideration because of the strict Soviet central government control and lack of knowledge about resources to exploit. The Caspian Sea littoral states have signed several contracts with western oil companies after their independence in order to recover and export hydrocarbon resources. Then, by investment of these companies, the influence of foreigners and regional powers increased in the region.

Azerbaijan and Kazakhstan hold proven reserves of about 7 and 30 billion barrels respectively. Since these countries are small and their consumption is low, they could increase their oil exports in the coming years. Kazakhstan and Turkmenistan have 93.3 and 91 T.C.F of natural gas respectively. All the aforementioned countries, providing their domestic needs, will be able to export a very small amount of oil and gas due to their geopolitics limitations.

Observers believe that, regarding the geopolitics of the Caspian Sea by 2010, almost 4 mb/d of oil and 22.4 tcf of natural gas will be produced where almost 3 million barrels of crude oil and 4.15 tcf of natural gas will be exported to global energy market by 2010.

Although, compared with the global level of oil and gas supply and demand, this volume is not consider-



able; it has psychological, political and almost economical impact on the export markets of these commodities as an alternative resource of energy. Even though these resources don't have too much impact on price fluctuations, they have some effects on the energy markets through psychological relief they provide for the consumers.

Difficulties with developing the Caspian oil & gas

The limitations confronting countries in the Caspian Sea region are as follows: geopolitical situation and regional crises, unstable conditions for investments, environmental concerns and unclear legal regime of the Caspian Sea, and lack of transportation infrastructures as one of the most important factors.

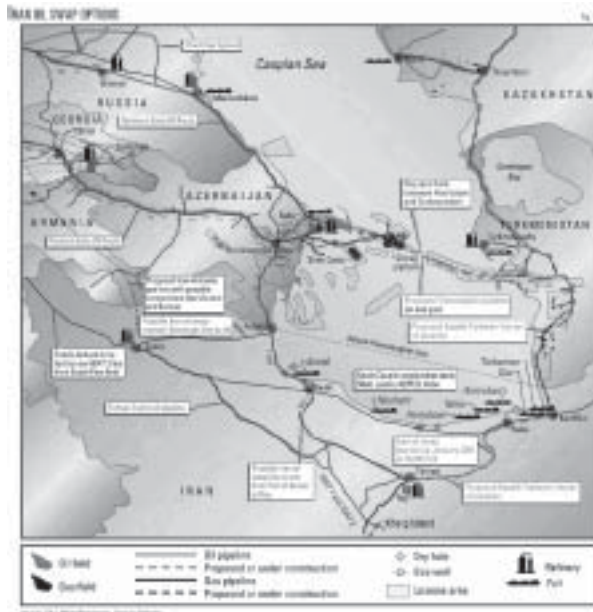
Russia's monopoly on oil and gas pipelines in the region is one of the biggest problems in the Caspian Sea region that has turned into a main barrier on developing oil and gas in the region. Having pipelines is much more important than having oil and gas reserves in this region, because lack of accessibility to the global markets and inability to export resources leaves oil and gas resources in disuse.

Failure of the regional countries to create transit infrastructures because of their unfavorable economic conditions has made them appeal to Russia's pipelines, where, in some cases, they were forced to produce less than their real capacity. The Caspian Sea has no access to open seas i.e. it is landlocked. Countries of the region in need of interaction with neighboring countries have to use their pipelines. There are different pipelines for the transportation of the Caspian Sea oil and gas that some of them are in operation right now and some are in designing and construction phase.

Regarding security, distance, capitalization costs, and transit rights, southern route via Iran is the most cost-effective one. It is much more attractive in

contrast with other the four northern, south-eastern, eastern and western routes. Although there have been attempts to construct the Kazakhstan-china pipeline, China and Japan route (the eastern route) is not economical due its high costs and long distance. First and second phase of this pipeline have been inaugurated but we have to consider it as a strategic pipeline for china not an economical one. Because of the domestic armed conflicts in Afghanistan and the lack of needed infrastructures, the south-eastern route can not be a safe route to carry oil and gas. Indeed, Afghanistan doesn't have any access to open seas; therefore to reach open seas or India the pipeline has to cross Pakistan. The monopoly on the northern route possessed by Russia as an oil and gas producer and exporter has created limitations for the Caspian Sea states who are competitors of Russia. Even, Russia doesn't have direct access to open seas. Besides, all the pipelines to Russia cross such critical areas as Chechnya, Dagestan, south Osetia of Abkhazia and Ajaristan, in this way they force to transfer the oil from Bosphorus & Dardanelle straits which faces them contravention of Turkey. Because of the unsafely and lengthy of western direction, this direction is not suitable. One route passes from Garbage convulsive area and Kurdish dominated regions of Turkey and, in the other hand it is prone to having earthquakes which is dangerous to invest there. Also it needs enormous capitalization because of the long distances.

Baku-Tbilisi-Ceyhan pipeline costs more than 4 billions dollars leading to higher transit tariffs. The oil transit tariff of this pipeline is about \$3.3/bbl during the first phase (2005-2010), \$4.6/bbl during the second phase (2010-2016) and \$5.5/bbl during the third phase (2016-2029); these tariffs are for the consortium members. The project has been facing challenges in the development phase. As soon as the contractors succeeded to reduce primary concerns over pipelines including lack of access to new tech-



nologies, long distances and difficult routes, they faced criticism from international private organizations and local organizations brought the project to a halt. These organizations expressed their worries about environmental hazards, damages to cultural heritage of the region, and international law violation.

Gas resources of Turkmenistan, Kazakhstan and Azerbaijan by passing from Caspian

Sea bed, transport by the Tran Caspian pipeline at first to Turkey and then to south eastern countries and central of Europe. The pipeline purposed in 1996 by the U.S and the three countries agreed. Although this direction can reduce the monopoly of Russia in delivering the region gas to European countries but, no doubt it threatens the marine environment.

Considering the security and direction shortness of the existence pipelines reticulation, and tariffs being low, construction is economical then the advantages of that are great. Transit cost of Caspian Sea oil by Iran is about one dollar, according to feasibilities studies. So, regarding Iran's experience in hydrocarbon industries about a century, it can provide the equipments, the existence pipelines reticulation and a great feasibility for Caspian Sea exporters. To

transport the natural gas, Iran- Azerbaijan gas pipelines are joined, therefore it is 4 times shorter and inexpensive than any pipeline to build that has been anticipated to the Black Sea and Mediterranean. In other words it is much better than gas transporting from Russia or other directions.

One of the most important factors in energy security is pipelines system security which secures energy supplying to consumption markets.

Regional conflicts are an additional factor in exporting terminals that brings up in exporting pipelines of Caspian Sea matters. Different religions and ethnic in the region which causes conflicts in the region, threatens the existence pipelines and its substructures. These domestic and international conflicts are an obstacle for the region oil and gas developing which is an important barrier in energy security. In some cases the conflicts are for extending the independency, fortunately with an agreement letter of security between CIS (Commonwealth of Independent States) the temporary peace is exists and the conflicts came to an end. The conflicts which have created instabilities in the region are included; Nagorno-Karabakh (Armani Stan-Azerbaijan conflict), Chechen (separatist rebels in Russia) and Abkhazia (the conflict between

Georgia- Abkhazia). Although the conflicts were domestic but they threaten the substructures in Caspian Sea and have made the foreign investors uncertain to develop the hydrocarbon industries. Also it reduced the energy security in the region.

Most of the Caspian Sea states are poor and suffering from corruption, the Director of International Strategic Research Center of Georgia, Alexander Rundle says. Rundle remarks that FSU countries in Caspian Sea are like each other with a fragile structure. Because of the lack of a legal regime and a distinguished conventional framework for the private section and economic stability, there is no considerable investment in these countries. The

situation causes risks for investors in energy field.

The widespread corruption in high position in the government and the bureaucracy in low level of government can be seen, in these states. Rundle emphasizes that the widespread corruption for governments is like plague which causes cynicism and indifference to laws among legislators. Russia is the most corrupted country in the world that the corruption has firmed among FSU countries.

Fortunately, Kazakhstan and Azerbaijan have been trying to remove the corruption in their public system recently which has a considerable effect on investments of oil companies in the region. What is important to these countries is achieving an economical stability and a clear tax system. No doubt, removing these barriers bring up more stability in these states which can increase investments and also causes oil & gas extraction and transportation of the region to the global markets. Most of consumers want to be sure about access to these resources.

Another factor that increases the regional conflicts and delays the developing oil and gas fields in the region is an unclear legal regime of Caspian Sea. The lack of an agreement letter among 5 countries of Caspian Sea has created major problems for the oil and gas resources in the region. Even though Russia, Azerbaijan and Kazakhstan signed bilateral agreements but, yet there is no a pant lateral agreement for the Sea that together with lack of unclear legal regime create problems for cooperation among coastal states, in order to extraction and developing the common oil and gas resources in the area.

Also, environmental challenges resulting from careless of neighbors in the Caspian Sea region is another problem that makes the condition of the area very risky. The most important pollution source in the region is refinery and petrochemical compounds in the Abs heron peninsula in Azerbaijan. Also offloading oil and gas in the seashore has serious

effects in the region environment. Indeed, return of wastes and waste water of Russia's heavy industries directly to Caspian Sea together with chemical and insecticides of farms indirectly threat the living creatures and plants of the area.

Conclusion

After the cold war and the Soviet collapse, the Caspian Sea became internationally important due to oil and gas reserves found in the region. The most important worry of the consumers is to secure oil and a gas demand so that, diversifying oil and gas resources has an important role in securing energy sectors. So it decreases dependency on the main producers, especially Middle East and Persian Gulf area.

Therefore, Caspian Sea has gained a crucial role from energy and geopolitical viewpoints. One of the most important factors for energy consumers is the security of energy supply. The role of the Caspian Sea oil and gas reserves, as an alternative resource in safeguarding the energy security, is significant despite existing small reserves and lack of proper infrastructures and lingering worries on the transportation of oil and gas. By solving such problems as transportation of oil and gas which is somehow, we can increase the security of supply. The regional cooperation can be effective to develop oil and gas fields. Iran, located in the transit area has a significant role due to its technical experience the field of exploration, production and transportation of oil and gas. Also it is a safe country leading to lower transportation costs. So the government policy makers should notice that Iran can take more active role in the Caspian Sea region by adopting decent policies at local and international level. In this way they can promote the potential role of Iran through more constructive cooperation with such countries as Russia, Turkmenistan, Kazakhstan and Azerbaijan.

Can Asia plug all the gaps in Iran's oil industry

Source: Reuters

Iran's oil and gas sector is turning to energy-hungry Asia for money, expertise and technology to sidestep U.S. sanctions and pressure, but cannot find all the answers in the east.

The world's largest energy consumer the United States bars its companies from investing in Iran's oil and gas and has put pressure on European and Asian firms to also stay out.

State-owned Asian energy heavyweights, anxious to secure future supplies for fast-growing economies, have instead increased their role in the world's fourth-largest oil producer.

"Iran's call on international financing for oil and gas can easily be moved to the east from the west," said Hojjatollah Ghanimifard, vice president for investment affairs at state oil company NIOC.

"We have learned to live without U.S. technology, help and money. How easily we have been able to find new partners."

Analysts are sceptical Asia can plug all the gaps.

"Iran will of course say to the West

'we don't need you, we can get what we want elsewhere,'" said Giacomo Luciani, director of the Swiss-based Gulf Research Center Foundation. "But I don't believe it. They haven't been able to



meet their long-term objectives.”

The Islamic Republic’s 2010 oil capacity target has slipped to around 4.5 million barrels per day from an earlier target of 5 million bpd. Capacity stands at around 4.3 million bpd.

Iran’s Oil Minister Gholamhossein Nozari said late last year Iran needed \$150 billion to \$160 billion to boost oil and gas output capacity over the next seven years.

The U.S. has put pressure on international banks to stop finance for business with Iran, seeking to isolate Tehran on the international stage over its nuclear programme. Tehran insists its nuclear work is peaceful.

Sanctions force the pace

Asia is expected to provide a large part of the world’s future energy demand growth, so big Middle East oil and gas producers are already gravitating toward their future market.

But U.S. and United Nations sanctions have forced the pace for Tehran.

“Iran is moving toward Asia more quickly than it would do otherwise,” Luciani said. “Iran wouldn’t go that way so rapidly if it had access to western technology.”

NIOC plans to boost its crude exports to China and India and says it has easily found buyers to replace those that have refused to purchase its oil.

“This hasn’t affected our exports at all,” said Ali Asghar Arshi, executive director for international affairs at state oil firm NIOC.

The state-run company is also in talks with Asian companies over exploration rights in the Caspian.

China’s state-backed offshore oil company CNOOC is negotiating a \$16 billion deal to develop a gas field and build a liquefied natural gas (LNG) terminal and India’s ONGC is awaiting Iran’s nod on a \$3 billion development plan for the

Fars oil and gas block.

The deals have yet to be signed and in any case, analysts say Asia cannot provide Iran with the technology it desperately needs and international oil companies possess.

Iran holds the world’s second-largest oil reserves, but the rate of recovery from producing fields is 20-25 percent, analysts said, below the industry average of around 35 percent.

In particular, Iran needs technology to boost output from ageing fields, overhaul refineries and export more gas.

“Iran definitely needs help on enhanced oil recovery,” said Mehdi Varzi of London-based consultancy Varzi Energy. “A lot of its oil is very heavy oil.”

To help cope with this heavy, difficult-to-process crude, Tehran has big plans for the refining sector and aims to almost double capacity to around 3 million barrels per day (bpd) by around 2012, up from around 1.7 million bpd.

But it needs technology licences from foreign companies to build the complex units that can boost yields of transport fuels. The same is true of liquefied natural gas exports.

Top Iranian oil officials say they can get the technology they need, but admit energy production could be more efficient with access to the best technology.

“We see sanctions as having bitten here,” said one senior Western diplomat in Tehran. “Oil and gas output is static and because of sanctions, companies are just not as willing to invest and be in on the ground as they would be otherwise.”

Another problem is that even Asia’s enthusiasm is not boundless.

“They can get some financing,” said Varzi. “But the longer sanctions carry on, the more reluctant even Asian companies will be to do business with Iran.”