ENERGY POTENTIAL OF CENTRAL ASIAN COUNTRIES: OIL-AND-GAS COMPLEX

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As the Caspian region figures more prominently in the economy of Kazakhstan – chiefly due to its oil-and-gas deposits (already under development or still under evaluation) – it increasingly becomes the focus of world and regional powers. Apart from assessing the hydrocarbon endowments of the region and determining the legal status of the Caspian Sea, the key problem here is hydrocarbon transportation routes. The latter two problems explain why the geopolitical factor has acquired crucial importance.

The situation in the Caspian region is marked by tense and increasingly keen rivalry among international oil companies for control over energy supply and transportation routes. The latter are of special concern for Kazakhstan as the existing transport infrastructure is extremely outdated. The political decision to build new pipelines, if translated into life, is likely to play a vital role not only in shaping new geopolitical realities in the region and outlining the region's economic prospects but also (by compensating for the shrinking reserves of the Northern Sea) may change a line-up on world oil and gas markets.

Oil exports, the backbone of economic growth, are of particular importance for Kazakhstan (and other Caspian countries) in building a steadily developing economy. However, in spite of the fact that Kazakhstan – in terms of its hydrocarbon endowments – ranks among the top largest oil producers in the world it is still an outsider to world oil business due to Kazakhstan's remoteness from potential markets and because oil production costs in Kazakhstan are fairly high.

All the above factors make it imperative to elaborate a strategic development program for the region. Otherwise, there can be no talk about long-term stability and cooperation in this region. Before laying out possible scenarios of the situation in the Caspian, though, we need to review the world oil market, including price behavior, major suppliers and consumers, as well as evaluate the situation in the Caspian region at large.

1. Caspian Oil : Potential Reserves: Conflict of Interests

The strategic significance of any oil-and-gas region is to be measured by the amount of its reserves and its geographical location. In this sense, the strategic importance of the Caspian region comes not so much from the total amount of its hydrocarbon reserves as from its location: it lies half-way between major active and prospective markets of oil and derivatives (Europe and Asia), on the one hand, and between today's major actors (the Near and Middle East, North Africa and Russia) supplying liquid fuel to the markets of the Eastern hemisphere, on the other.

The economic potential of deposits explored so far makes it possible to estimate, if only approximately, the costs of oil production and delivery within the framework of the existing investment projects (at least, those based on agreements already signed).

Western estimates put the proven extractable resources here roughly at 2 billion to 4 billion tons (see Tables 7 and 8).

Table 7. Proven Oil Reserves Across the World and in the Caspian Region

	Billion barrels	Billion tons	percent
Near East	654,0	89,6	59,7
North America	87,7	12,0	8,0
Latin America	68,0	9,3	6,2
Africa	56,9	7,8	5,2
Asia	45,1	6,2	4,1
Europe (minus CIS)	18,5	2,5	1,7
CIS	165,5	22,7	15,1
The Caspian Region	**29,0**	**4,0**	**2,6**
Total	1095,7	150,1	100,0

Source: International Petroleum Encyclopedia. 1996.

The figure is not too high in terms of world resources: Near and Middle East countries alone are responsible for 90 billion tons to 100 billion tons, or more than two-thirds of world proven reserves, thus exceeding 25- to 50-fold the Caspian endowments. Consequently, the Caspian resource basis now fit for development is comparable with the total proven reserves of the North Sea.

Obviously, with proven reserves estimated at 1.3 percent to 2.6 percent of world endowments (minus probable reserves put at 15 billion tons to 30 billion tons) the Caspian region cannot in principle turn into another Persian Gulf. Nonetheless, its share in energy supplies to Western Europe may prove very significant and timely in the face of a predicted decline in North Sea oil production in the early 22nd century. Thus, as North Sea deposits run out Europe will signal a growing demand – diversified by supply sources – for substituent (including Caspian) oil.

Table 8. Oil and Natural Gas Reserves of the Caspian Region as Assessed by the US Energy Information Administration

Country, unit	Oil			Gas			Oil + Gas		
	Proven Reserves	Probable Reserves	Total	Proven Reserves	Probable Reserves	Total	Proven Reserves	Probable Reserves	Total
AZERBAIJAN									
Billion barrels. Trillion cubic feet of equivalent fuel	3.6-11.0	27	31-38	11	35	46			
Billion tons of equivalent fuel	0.7-2.2	5.4	6.1-7.6	0.4	1.3	1.7	1.1-2.6	6.7	7.8-9.3
IRAN(*)									
Billion barrels. Trillion cubic feet of equivalent fuel.	0	12	12	0	11	11			
Billion tons of equivalent fuel.	0	2.4	2.4	0	0.4	0.4	0	2.8	2.8
KAZAKHSTAN									
Billion barrels. Trillion cubic feet of equivalent fuel	**10.0-16.0**	**85**	**95-101**	**53-83**	**88**	**141-171**			
Billion tons of equivalent fuel	**2.0-3.2**	**17**	**19.0-20.2**	**2.0-3.1**	**3.3**	**5.3-6.4**	**4.0-6.3**	**20.3**	**24.3-26.6**
RUSSIA(*)									
Billion barrels. Trillion cubic feet of equivalent fuel	0.2	5	5	-	-	-			
Billion tons of equivalent	0.04	1.0	1.0	-	-	-	-	-	-

fuel									
TURKMENISTAN									
Billion barrels. Trillion cubic feet of equivalent fuel	1.4-1.5	32	34	98-155	159	257-314			
Billion tons of equivalent fuel.	0.3-0.3	6.4	6.7	3.7-5.8	5.9	9.6-11.7	4.0-6.1	12.3	16.3-18.4
TOTAL FOR CASPIAN COUNTRIES									
Billion barrels. Trillion cubic feet of equivalent fuel	15.2-28.7	161	176.2-189.7	-	-	-	-	-	-
Billion tons of equivalent fuel	3.0-5.7	32.2	35.2	-	-	-	-	-	-
TOTAL FOR CASPIAN COUNTRIES (MINUS RUSSIA)									
Billion barrels. Trillion cubic feet of equivalent fuel	15.0-28.5	156	171-184.5	162-249	293	455-542	177-278	449	626-727
Billion tons of equivalent fuel	3.0-5.7	31.2	34.2-36.9	6.1-9.3	10.9	17.0-20.2	9.1-15.0	42.1	51.1-57.1

(*) For Caspian areas only.

Table 9. Consolidated Report on Assessed Oil and Natural Gas Reserves for Major Caspian Seabed Division Options (Category D1, mean values, billion tons of equivalent fuel) – Estimates of Russia Natural Resources Ministry

Country	Option 1			Option 2	Option 3	Option 4	Option 5
	Level –26 m	Level –27 m	Level –28 m	Level –28 m	Level –28 m	Level –28 m	Level –28 m
Azerbaijan	3.7	3.7	3.7	4.0	3.7	3.7	3.7
Iran	1.0	1.0	1.0	2.6	1.0	1.0	1.0
Kazakhst	**9.0**	**8.0**	**6.3**	**4.5**	**4.1**	**6.2**	**6.1**

an							
Russia	2.2	2.1	2.0	2.6	4.1	2.6	2.7
Turkmenistan	2.2	2.2	2.2	2.6	2.1	2.2	2.2
Total for the Caspian countries	18.1	17.0	15.2	16.3	15.0	15.7	15.7

Option 1: Caspian oil and natural gas reserves are distributed among the Caspian countries based on a middle-line sectoral delimitation of sea area. The Russian-Kazakh sector has a sectoral delimitation (including various middle-line versions) based on three values of the Caspian Sea level.

Option 2: Caspian oil and natural gas reserves are distributed among the five Caspian countries based on the principle of ten-mile national jurisdiction and equal access for all littoral countries to the resources of the Caspian international area.

Option 3: Caspian oil and natural gas reserves in the conventional Russian-Kazakh sector are distributed between Russia and Kazakhstan based on equal volumes for each of the countries.

Option 4: Caspian oil and natural gas reserves are distributed between Russia and Kazakhstan based on a seabed-delimitation line established by Resolution of the Cabinet of Ministers of the Republic of Kazakhstan No. 1514 of 10 December, 1996.

Option 5: Caspian oil and natural gas reserves in the conventional Russian-Kazakh sector are distributed based on a “pragmatic” line determined with an objective to prevent previously established structures from intersecting and assign to Russia a seabed section that was earlier put out to tender (autumn, 1997) involving Russian legal entities.

Today, the Caspian region, especially its littoral area, is less explored (as is the case of any newly-discovered oil-and-gas field whose development is in the initial phase) than the old ones. The exact size of any deposit is subject to continuous investigation, its actual amount being unknown until development is over. Therefore, it is safe to assume that the precise figure for isolated fields and the oil-and-gas potential regionwide will be known in the course of further exploration and after the start of oil production in the Caspian region.

All current values of proven oil reserves in the Caspian region should be regarded as too high. On the one hand, there is an incentive for the littoral countries to overestimate the reserves in a bid to attract potential foreign investors. The easiest way to do so is to announce the discovery of huge proven reserves (i.e., economically rational under today's circumstances). On the other hand, though, western countries are also interested in having reserve values overestimated as those make Caspian leaders see their countries as self-sufficient and capable of pursuing independent economic policies.

Thus, American summarized estimates of hydrocarbon resources for four Caspian countries, including Azerbaijan, Iran, Kazakhstan and Turkmenistan (the total of the category "proven and probable reserves" equals to 51.2-57.1 billion tons of equivalent fuel, see Table 8) are 3.6 - 4.2 times the size of *Russian estimates* for these countries (D1 category is put at 15.9 billion tons of equivalent fuel, see Table 9). Moreover, even American summarized estimates of Caspian oil alone (35.2 – 37.9 billion tons of equivalent fuel, see Table 8) are twice as high as corresponding Russian estimates for oil and natural gas (18.1 billion tons of equivalent fuel according to maximum values, see Table 9). Consequently, this contributes to undermine Russia's centuries-long influence on this region, opening the way to deeper involvement of western countries and companies in this region.

A short time later, when political motivation falls by the wayside replaced by serious economic assessment of Caspian projects and especially during feasibility studies, the region's hydrocarbon reserves are expected to be adjusted downward. As follows from Table 8 (American estimates) and Table 9 (Russian estimates), the overwhelming majority of both proven and probable reserves are concentrated in two countries: Azerbaijan and Kazakhstan. Given, as mentioned above, that summarized estimates of hydrocarbon probable reserves obtained from American reports substantially exceed the similar estimates made by Russia's experts. At the same time, we believe that both Russian and American estimates of a category like probable (potential) resources should match each other as closely as possible for a number of objective reasons – the geological resource category is maximum free of "technical" influences (technical aspects of reserve extraction plausibility) or "economic" factors (focusing on the profitability of development and sales), which are different in Russian and American methods.

The above-mentioned difference appears to be much greater in a distribution by countries, and – a most striking thing! – American estimates most dramatically exceed Russian for countries which were and remain in one way or another advocates of dividing the Caspian Sea sectorally (the difference is for Azerbaijan 2.0 – 2.3, for Kazakhstan 2.7 – 3.0 and for Turkmenistan 6.3 – 7.1 times, even if compared with maximum Russian values from options given in Table 9). In contrast, for countries that were and remain opponents of dividing the Caspian Sea into national sectors American estimates are rather close to maximum Russian values (Iran).

In this light, the irregular distribution of oil-and-gas resources across the Caspian seabed is what really stirs up discord over the legal status of the Caspian Sea, although the official argument may be different, of course.

The share of hydrocarbon reserves claimed by the littoral countries varies with Caspian delimitation schemes. The stakes are too high, especially for Iran, Kazakhstan and Russia. According to the Russian Natural Resources Ministry's estimates, different division schemes stemming from five major approaches suggest that maximum and minimum values of oil-and-gas resources (with average densities of probable resources) making up the share of isolated Caspian countries differ (Table 9):

- for Azerbaijan by 7 percent,
- for Iran by 147 percent (2.47-fold),
- for Kazakhstan by 117 percent (2.17-fold),
- for Russia by 110 percent (2.1-fold),

- for Turkmenistan by 21 percent.

Total for the Caspian region is 19 percent.

The eventual decision will have the most dramatic effects on Russia and Kazakhstan. As follows from Table 9, delimitation schemes advanced by the littoral countries as most favorable do not coincide with one another. Hardly can one expect negotiations over the Caspian legal status to be quick and quiet. Meanwhile, we believe the failure to tackle legal issues (these matters are not the subject of this study) can but just slow down rather than stop the development of oil-and-gas reserves in the Caspian Region.

According to US Energy Information Administration, proven, probable and general oil-and-gas resources across the Caspian region have been summed up. It must be underscored, though, that the figures provide but rough evaluation of this little known region based on today's technical reports. Figures given for general resources imply rough calculation commonly used for reference and classification purposes. Data and criteria for reserve estimates vary with sources. As regards proven and probable reserves of oil and condensate their size ranges from 50 billion barrels to 200 billion barrels.

According to data available, most oil-and-gas reserves throughout the Caspian region are still untapped as many areas in the same region remain unexplored. Azerbaijan's oil resources (both proven and probable) are largely concentrated in offshore fields. Also, 30 percent to 40 percent of Kazakhstan's and Turkmenistan's total oil reserves are thought to lie in offshore fields. Proven oil reserves for the Caspian region at large account for 16 billion barrels to 32 billion barrels, which is comparable with USA (22 billion barrels) and the North Sea (17 billion barrels to 33 billion barrels).

Gas proven reserves are two-thirds as large as hydrocarbon proven reserves of the Caspian region. Figures for proven reserves suggest that Kazakhstan, Turkmenistan and Uzbekistan, each taken separately, ranks among the world's twenty largest natural-gas producers. Gas proven reserves across the Caspian region make up 236 trillion cubic feet to 237 trillion cubic feet – figures comparable with North American reserves (300 trillion cubic feet) by far outstripping West Europe (168 trillion cubic feet - 242 trillion cubic feet).

Table 10. Oil and Natural Gas Reserves in the Caspian Region

Country	Oil Proven Reserves (BBL)	Oil Probable Reserves (BBL)	Oil Total Reserves (BBL)	Gas Proven Reserves (Tcf)	Gas Probable Reserves (Tcf)	Gas Total Reserves (Tcf)
Azerbaijan	3,6-1,25	27	31-40	11	35	46
Iran*	0,1	12	12	0	11	11
Kazakhstan	**10,0-17,6**	**85**	**95-103**	**53-83**	**88**	**141-171**
Russia*	0,3	5	5	None	-	-
Turkmenistan	1,7	32	34	98-155	159	257-314
Uzbekistan	0,3	1	1	74-88	35	109-123
Total:	16,0-32,5	163	179-195	236-337	328	564-665

*-for littoral regions,
BBL – billion barrels, Tcf- trillion cubic feet
Source: US Energy Information Administration, December, 1998

In order to outline mutually acceptable priorities for the Caspian countries one has to get the proper understanding of economic parameters underlying various options for Caspian hydrocarbon production and major constraints on the development of oil-and-gas industry imposed by different scenarios.

1.2. TRANSPORTATION PROBLEMS

Forecasts say that oil exports from the Caspian countries will increase by more than 80 million tons per year by 2010. At present, oil transportation via Black Sea straits stands at 75 million tons per year. According to expert estimates, as many as 10 million tons to 15 million tons per year at most can be transported like that. Therefore, a prospective increase in oil production across the Caspian region necessitates new oil transportation routes. The following countries ***are involved*** in ***the issue of Caspian oil and gas shipments***, regardless of their motivation and the degree of involvement:

the Caspian countries. By convention, they can be classified into two groups: countries interested not only in the production of hydrocarbons but also in carrying them via their own routes (Russia, Iran), on the one hand, and countries whose geographical location makes it impossible for them to control the direction of pipelines but provides them with a wide choice of routes (Kazakhstan, Turkmenistan and Azerbaijan). For Russia, the transportation issue is closely related to its political influence on the region;

countries which see the oil factor as part of their political – rather than economic – ***strategies*** in this region (USA, Turkey);

transit countries across whose territories shipment routes pass (Georgia, Armenia, Bulgaria, Afghanistan, etc.). Incentives for these countries come from prospective economic benefits from shipments crossing their territories.

The following few scenarios for export pipelines are currently under review by foreign experts:

- carriage across Russia;
- routes passing via a bend stretching from the Mediterranean to China's province of Xinjiang;
- any other trade-off decision.

Each of the pipeline route scenarios available today contemplates that pipelines will pass across several countries, involving its own risks.

The geographical setting of Russia enables it to control exit of hydrocarbons from the Central Asian countries to world markets. In addition, it has strong commanding positions (compared to those of the other Caspian countries) in shipment infrastructure, including a pipeline built to bypass Chechnya with a capacity of 5 million tons of oil per year, as well as the pipelines of the Caspian Pipeline Consortium and Atyrau-Samara. An oil-transshipment point in the city of Makhatchkala allows oil to be shipped both for export and to the domestic market using refineries in Volgograd, Samara and Saratov. In addition, Volgograd is where Europe's largest inland navigation company, YUKOS's "Volgotanker", is based capable of shipping all oil produced during the initial development of the northern Caspian region.

For all the diversity of projects being proposed, only the Caspian Pipeline Consortium (CPC) has been put in place thus far. It has a 1,580-kilometer pipeline with an initial capacity of 28 million tons per year. What's more, you need only to increase pump station capacities in order to reach its maximum throughput of 67 million tons per year (of this, 45 million tons for Kazakhstani oil producers) – a project thought to be implemented in four phases. Work is in progress on the Atyrau pipeline to link Karachaganak and CPC – a project that will make it possible to increase oil supplies to 7 million tons in the immediate future and to 11 million tons in the long run. Furthermore, Russia is expanding cooperation with other projects underway in Kazakhstan, including the Atyrau-Samara pipeline project aimed at increasing the pipeline's capacity from 10 million tons to 15 million tons. In future, Kazakhstan will be able to export its crude (5 million tons) via the Baltic pipeline network that Russia new builds heading for the Gulf of Finland.

The Northern Kazakhstan – China route provides access for Caspian oil to Chinese and Asia-Pacific markets. It should be pointed out, though, that medium-term outlooks are not agreeable for China to start up the Northern Kazakhstan – China pipeline project. The project will not be plausible unless there are fairly high oil prices. Nor the recoupment of the 3,000-kilometer pipe with huge capital invested (at least US $3 billion) can be possible unless the pipeline carries an estimated 40 million tons per year. All Kazakhstan, for the moment, can invest in the project is but one-third of what is required. The volumes projected can be achieved only after Kazakhstan has substantially increased oil production in its western and central regions. The missing amount can be compensated by Caspian shelf deposits the development of which, once they are found to contain sufficiently large oil reserves, is still a matter of the very distant future.

What the Chinese leadership sees as a top priority now is developing Xinjiang deposits and building a pipeline from Xinjiang to Shanghai. Faced with the urgent need to invest billions of dollars in the development of its domestic oil-and-gas infrastructure, China will hardly be able to finance the Northern Kazakhstan – China project in the foreseeable future. In addition, Beijing is currently engaged in intensive negotiations with Moscow over building oil-and-gas pipelines from Siberia to China. Currently, a project involving the construction of a pipeline from eastern Siberia to Beijing and further to the eastern coast is being agreed upon. Russia's YUKOS and China's Sinopec have signed an agreement over oil and petroleum products supplies to China: first by rail train (exports not exceeding 3-4 million tons per year) and in future via the Angarsk-China pipeline (20 million tons followed by 30 million tons in future). This pipeline will be shorter and, consequently, cheaper than the Kazakhstan one. This construction, once done simultaneously with two other Russian-Chinese projects (a gas pipeline from Kovyktinsky deposit and a power transmission line from Irkutsk), will reduce substantially construction costs, and the oil pipeline is thought to be put into operation as soon as 2005. Especially because YUKOS can use its own and outside funds to finance the designing and implementation of the project (in addition to YUKOS, LUKoil and Rosneft also guaranteed the supplies).

At the same time, China's plans with regard to Kazakhstan cannot be viewed separately from Beijing's strategies in the Near and Middle East. China is aggressively building up its presence in the Middle-East maintaining cooperation with Iraq and Iran. A consortium composed of Iran, Switzerland and China has been created to launch the Neka-Teheran oil pipeline, which will allow to increase a swap of Caspian oil, Kazakhstan's in particular. The Northern Kazakhstan – China project, in addition to arranging supplies from the hydrocarbon-rich Caspian Sea, can provide access to Iran coastline and further into the country, thus safeguarding China against American dominance in the Middle East and helping create a third oil pole as a counter the Middle Eastern one. Thus, it can be concluded that due to the Southeast Asian countries' dependence on the Middle East for oil supplies, Beijing is likely to view the Northern Kazakhstan – China project as strategically important in the long run.

The Kazakhstan-Turkmenistan-Afghanistan-Pakistan pipeline project able to carry 50 million tons of oil per year and opening access to the Arabian Sea cannot be set in motion until the total stabilization of the situation in Afghanistan, which is hardly possible to expect in the near and, to all indications, in the not so distant future. The Afghanistan-Pakistan-oriented pipeline is important for the Central Asian nations primarily in political terms as it might eliminate a threat from the south. Besides, even if the situation in Afghanistan normalizes (or more precisely, if a central government is created vested with but limited powers outside Kabul, that is if the country reverts to a pre-Taliban political situation characterized by ethnic decentralization and intestine strife among the ruling elites) the success of the project would be still doubtful, because the start-up of the Caspian Pipeline Consortium has reduced the demand for alternative pipeline routes, many a factor pointing to Iran as a more advantageous route.

The Kazakhstan-Turkmenistan-Iran route has an attractive economic performance. Its capacity is 15 million tons to 25 million tons of oil per year, project costs are estimated at US $1.5 billion to US $2 billion and, in addition, it is the shortest route (1,650-km long with a stretch of 200 kilometers passing across Kazakhstan) for Kazakhstan oil shipments to the terminals of the Persian Gulf. The project of oil supplies from Tengiz and Uzen across Turkmenistan and Iran is quite plausible and can be implemented in two or three phases. The first phase: after oil is delivered by tankers from Aktau to the Caspian ports of Iran it will be supplied to refineries in the north of Iran and further swapped in the Persian Gulf ports. The aggregate capacity of four Iranian refineries located in Teheran, Tebriz, Isfahan and Arak total

810,000 barrels per day and are capable of processing up to 50 million tons per year. To put this project in place it would require a mere US $360 million investment in the infrastructure of Iran. Next, following the construction of the Uzen-Teheran pipeline oil can be delivered to the Iranian capital to be used by local refineries while Kazakhstan, in turn, will receive Iranian oil in the Persian Gulf on the same swap basis. The principal technical and organizational issues of this project involve technological adjustment of Iranian refineries for Kazakhstan's oil and reverting oil flows currently carried through Iranian pipelines from the Persian Gulf region to northern Kazakhstan's refineries.

Once put in place, this project would not only significantly slacken US and Russian control over exports of Kazakhstan's oil and undermine their ability to establish monopoly oil shipment prices but also would allow oil sellers (Kazakhstan and Turkmenistan) to sell quality Middle Eastern oil instead of their own. US Congress sanctions barring American companies from doing business with Iran are a serious hindrance on this front.

There have been positive trends to easing the sanctions of late, though. In circumvention of the sanction, the energy sector of Iran has clinched deals worth an estimated US $10 billion. Moreover, the George Bush Jr administration is heavily represented by those arguing in favor of lifting the sanctions. A number of US oil companies are active proponents of the normalization of relations with Iran. At the latest World Economic Forum in Davos representatives of Texaco, Chevron, ExxonMobil and Conoco pointed to the need for getting Iran involved in Caspian pipeline projects, and not without good reason:

Due to its geographical and demographical potential, Iran is becoming one of the key players in the Caspian region and Persian Gulf;

Teheran begins to act as the chief advocate of Arab interests in their anti-Israel drive, Iran's position being important for settling the conflict between the Arab world and Israel.

It should be pointed out that there are also serious doubts about the possibility of lifting sanctions against Iran and Libya. The fact is that Iran has launched the Middle East's largest missile program threatening the Israeli national security. This, perhaps, will make Jewish lobby insist on extending the sanctions. On the whole, though, US-Iran relations have a great potential for gradual improvement in the not so remote future.

At the same time, the analysis of foreign oil and gas companies' activities in the Caspian region prompts one to think that they are not after Caspian oil whose reserves are incomparable to the Arab world's or even Russia's in Siberia. Having drawn lessons from OPEC price collusions, western countries are seeking to get control of pricing mechanisms, in the first place. (In this sense, some of the Caspian countries may share the fate of Columbia whose oil in the 1970s was used by the United States to send down prices in the world oil market. Although the aim was achieved, Columbia's oil ceased to be paying and oil-producing sectors foundered.) This is perhaps what motivates the United States to build pipelines across a chain of its satellites bypassing Russia and Iran. A good case in point is the Baku-Jeihan pipeline – a project that the U.S. is beefing up.

This pipeline while linking Caspian fields to the ports of Turkey (a US ally in NATO) will not only help the U.S. to diversify energy sources, thus reducing dependence on oil imports from the Persian Gulf countries, but also strengthen its political and, undoubtedly, economic influence on Central Asia and the Caucasus. Remarkably, the geopolitical factor continues to dominate economic considerations – there are still doubts about the project's economic viability and independent analysts remain highly skeptical of its success.

Washington expects oil multinationals to bankroll the project, but the absence of a feasibility study coupled with the project's high cost (US $2.5 billion to US $4 billion) prevent international companies from rushing into a deal. ExxonMobil, for one, finds it imperative for the project to be economically feasible while currently it builds on reserves the company doubts exist. The group of the project's sponsors now consists of GNKAR (45 percent), BP (25,72 percent), Unocal (7,74 percent), Statoil (6,45 percent), TPAO (5,08 percent), ENI (5 percent), Itochu (2,96 percent) и Delta Hess (2,05 percent).

The oil pipeline, when built, would charge US $25 per ton carried (oil carriage through the Baku-Novorossiysk pipeline stands at US $16.6). What's more, the Turkish port of Ceyhan lies in an earthquake area – a circumstance that makes billion-dollar investment in this region rather risky. Corroborating this conclusion is also the fact that despite long talk about the plausibility of this project BP Amoco has not invested a single cent in the project, although it was supposed to be its major sponsor.

A set of political restrictions imposed on oil transports across the troublesome northern Caucasus casts a chill on potential investors while a series of setbacks in some of Caspian projects (specifically, in four Azeri deposits) made multinationals rather half-hearted about the practicability of these projects. Thus, despite a number of political agreements signed so far, the construction of the Baku-Ceyhan pipeline will not start in the near future as there are no real investors.

The principal advantage of the Baku-Ceyhan project lies in its bypassing Turkey's overburdened Bosphorus and Dardanelles and providing direct access to deep-water ports. The project has two bottlenecks, though: high cost and lack of crude oil at the moment. Also, there are still question marks over sales markets since production volumes and costs, shipment tariffs and even selling prices are still unknown. A row between Azerbaijan and Turkmenistan over some of Caspian fields can also be a hindrance.

The project will not pay unless it transports 45 million tons to 50 million tons per year during 40 to 50 years. Azerbaijan's oil fields now under development cannot feed this much oil, thus putting Kazakhstan center-stage as the sole country in the region able to make up for the missing crude. In this situation, the U.S. administration is endeavoring to secure guarantees that Kazakhstan will be able to supply crude sufficient to make the pipeline profitable. But Kazakhstan cannot give any. Firstly, because probable reserves in Kazakhstan's part of the Caspian shelf have not been proved yet. Secondly, because there are still questions as to how to bring crude from Aktau to Baku: by sea tankers or via seabed pipelines. The Atyrau-Astrakhan-Grozny-Baku pipeline now available cannot be used considering the extremely fragile situation in Chechnya. Building a tanker fleet to ship oil to Baku would not only be costly but also pose a potential threat to the Caspian environment, which is already seriously undermined. On the other hand, Iran and Russia are strongly opposed to laying any kind of pipelines on the Caspian seabed until the sea's legal status has been defined. Still worse, the sea's uncertain status permits the littoral countries to veto any underwater pipeline project at any moment, thus blocking access for the United States to the eastern coast of the Caspian Sea, and namely to Kashagan, which is likely the biggest petrol field in the region.

In addition, the Tbilisi route would bring crude not to the Mediterranean and Ceyhan but, rather, to the Black Sea (Supsa), thus raising the tanker issue once again. A number of questions arise in this context. Will a double-tanker line be paying enough? Do western tankers really more accurately comply with environmental standards than Russian vessels, which carry crude to Novorossiysk and are barred from passing through the straits under environmental pretexts?

Moreover, the private sector at whose account this pipeline is thought to be built tends more and more towards the Iran route as well as towards the Black Sea ports of Supsa and Novorossiysk. The latter seem to be especially promising in the light of possible crude shipments across Romania, which is insistently talking up the advantages of Caspian oil shipments across its own territory.

The Romanian transit option contemplates that crude be delivered by tankers to the port of Constanţa, which has oil terminals with a capacity of 24 million tons and a 1.7-billion-cubic meter oil tank, and further by Danube or by rail train to northern and southern Europe. The volume of annual transit is supposed to reach 10 million tons by 2010. The construction of the Constanţa-Trieste pipeline will not only increase shipments to 30 million tons and provide access to the Mediterranean but will also enable it to integrate into TAL, the European oil-pipeline network. The cost of this pipeline project passing across Romania, Hungary and Slovenia is put at US $1.2 billion. Romania's eight refineries are able to process 34 million tons of oil per year but due to oil shortages one-fourth of the capacities stand idle.

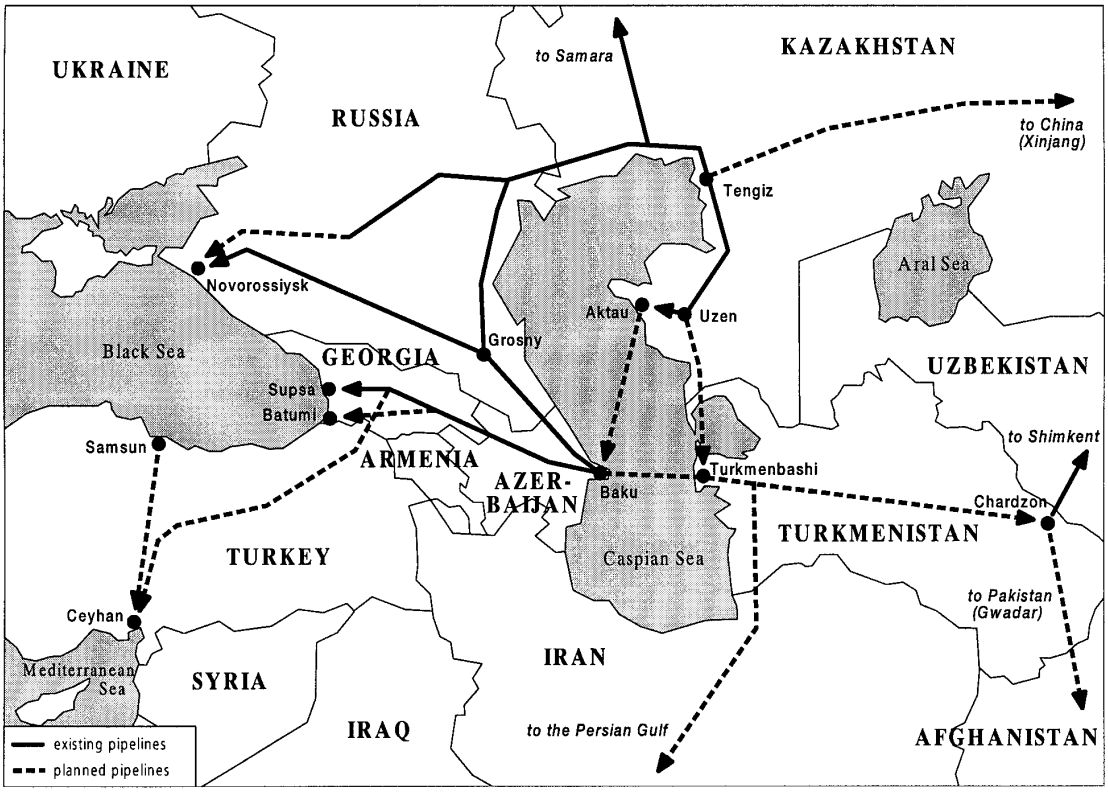
Alternatives to the Romanian project are Ukrainian and Greco-Bulgarian pipelines. Specifically, the Odessa-Brody pipeline and the Yuzhny oil transshipment terminal are due to go into operation in December 2001. During the first phase, the pipeline is expected to have a capacity of 9 million tons of oil per year (with a total capacity of 40 million tons per year). The Romanian project, though, has several advantages making it stand out as compared with the two latter. Firstly, it allows transporting oil using river and rail-road communications already available. Secondly, it would permit to deliver oil to the consumer at the lowest tariffs. Thirdly, it has high-capacity sea terminals. Fourthly, it provides more opportunities to diversify oil flows en route. Of course, the pipelines in question could co-exist peacefully complementing each other but the Baku-Supsa pipeline's low capacity (6 million tons per year) makes them rival.

Doubling the Baku-Supsa pipeline's capacity coupled with the Baku-Novorossiysk pipeline will not only permit the both conduits to work in parallel but will also catapult them into the rank of the chief export pipeline, thus offering the Baku-Ceyhan pipeline no hope of success. Moreover, the Romanian and Ukranian projects reduce the shipment constituent of the Caspian petrol price.

Meanwhile, according to Texaco's predictions oil demand in Europe will amount to 100 million tons in 2010 while in China and the rest of Asia it is expected to exceed the above figure 6-fold. In that case Mediterranean- and Central Europe-oriented shipment projects for Caspian oil will not only cease to be attractive compared to the Iran- and China-oriented ones but also might worsen the situation in the Strait of Gibraltar as was the case in the Bosphorus.

For the time being, though, the world market indicates no great demand for Caspian oil – a circumstance that hampers both the start-up of oil pipeline projects and the development of their infrastructure. Besides, due to the fact that investment policies in the decades to come will increasingly give priority to technologies aimed at intensifying oil production in deposits already under development and given today's world oil market hardly encouraging lavish investment (according to OPEC's president Sh. Khalil, world oil prices may fall down to US $10 per barrel) there are no grounds to expect great investment in new large-scale and costly infrastructures in capital-intensive facilities like Caspian's. Moreover, if Transneft goes ahead with its Baku-Tikhoretzk-Novorossiysk pipeline bringing its capacity from 15 million tons to 50 million tons per year, the opportunities for the Baku-Ceyhan pipeline will be rendered almost null.

Figure 1. Conduit Scheme



Sea shipments. The expansion of the port of Aktau as a large oil terminal contributes to the growth of transportation by tankers. Analysts point to the Aktau-Iran route as the shortest way to provide Caspian oil with direct access to the world market. The amount of potential shipments is fairly high: Kazakhstan's oil exports to the north of Iran are estimated at 25 million tons. Sea shipments of Kazakhstan's oil to the oil-conduit network of Azerbaijan seem to be also promising. Shipping by tankers appears to be the easiest way as it contemplates a phased development of transport infrastructure, does not call for large investment and is quite feasible even with poor production of oil. Tanker transportation, though, obviously cannot offer an

adequate replacement for pipelines, its plausibility being further specified by economic and technological estimates. Tankers, for one, cannot be used to supply Uzen oil due to its physical properties. In other cases, though, tanker carriages can nicely complement pipelines to ensure steady oil exports.

It must be emphasized that the absence of Kazakhstan's own export pipelines has put rail road center-stage as the major oil transport with a potential of 15 million tons per year.

Export pipelines: the pros and cons. It is crucial to address a number of strategic issues ranging from the volumes and degree of oil refining to Kazakhstan's ability to produce oil in an amount sufficient for shipping via all intended routes (in parallel, account should be taken of the fact that demercaptanization must be necessarily coupled with the removal from oil of heavy metals and natural radionuclides – an operation requiring large extra expenses). When summed up, Caspian oil shipment projects suggest that operating at full capacity would require 45 million tons of oil for the Caspian Pipeline Consortium, 5 million tons for Baltic Pipeline System (BPS), 40 million tons for China, 15 million tons for Iran, 30 million tons for Afghanistan, and 25 million tons for Turkey (Baku-Ceyhan). The total amount is estimated at least at 170 million tons (in 2000, though, Kazakhstan produced a total 35.3 million tons). Meanwhile, it may remain problematic even to fully utilize CPC's facilities till 2005 (due to bottlenecks in oil supplies by the Karachaganak integrated organization, Hurricane company and from Russian fields – it remains unclear who will be financing the construction of the Tikhoretzk reducer to link Transneft's pipeline to CPC's). It must be underscored, though, that crude shipments cannot bring substantial profits unless there are active efforts aimed at improving the existing infrastructure: maximum involvement in the production of pipes, laying out pipelines, etc.

Thus, the only realistic way to bring Caspian oil to the world market passes across Russia's territory, but it must be taken into account that in order to recover from the current economic turmoil Russia is forced to increase its own hydrocarbon exports – situation that places it in an ambivalent position. On the one hand, it grudgingly offers outsiders access to world markets since it does not have pipelines sufficient to export its own crude. On the other hand, it seeks to ensure that oil and gas pipelines pass across its territory, thus maintaining control over its southern neighbors.

The current economic and political realities prompt it that the most preferable route is the one passing across Russia to the terminals of Primorsk and Finland based on the Baltic Pipeline System due to go into operation in late December 2001. This is preconditioned by the fact that the Russian route was less subject to political risks, less costly (compared with the other routes), mounting shortages of oil in Europe (caused by reduced oil production in the North Sea). The commissioning of BPS would make it possible to pump western Kazakhstan's oil through the Russian pipeline to the Baltic port of Primorsk – a new milestone in the strengthening and expanding of sales markets, on the one hand, and of economic cooperation between Russia and Kazakhstan, on the other.

The failure to solve the problem related to export supplies to the world market seriously hampers the development of both the Tengiz deposit and the other oil fields of Kazakhstan. It must be pointed out that oil producers, which – as oil suppliers – assume responsibility for adequate pipeline loads and project financing, hold the key to the choice of oil shipment routes. In this respect, Kazakhstan can rely on European partners, who – unlike the Americans – are not involved in a political confrontation with Iran and agree with the southern pipeline's economic feasibility. For example, France's TotalFinaElf is already developing a feasibility study of pumping Kazakhstan's oil across Iran.

At the same time, by reducing the national oil company's stake in current and prospective projects the government decreases or loses altogether its own chances of influencing the choice of routes. Even today, Kazakhstan's capacity to influence the choice of export routes are extremely limited, considering that Kazakhoil, the national oil company (NOC), accounts for less than one-third (8.5 million tons) out of an aggregate oil production estimated at 30 million tons per year, and this relation is likely to persist for more than a decade to come (since a significant portion of Kazakhstan's oil now belongs or is supposed to be handed over to foreign companies).

Export pipeline strategies are primarily aimed at creating a multioptional pipeline networks coupled with the development of relative infrastructures that would make it possible to diversify oil supplies depending on the situation in the world oil market. A strong NOC would permit the country to weaken dependence on foreign operators whose behavior is

controlled by their governments, subject to a variety of political and economic factors and, more often than not, runs counter to the national interests of Kazakhstan. That's why NOC should be more aggressive in developing national fields and, in the long run, overseas deposits.

Based on the above analysis we can conclude that:

1. The absence of a well-developed pipeline network increasingly becomes a key problem as far as development and utilization of Kazakhstan's oil is concerned. It bars the Republic from entering the world market and set in motion programs of efficient oil processing.

2. Once modernized and expanded, the current pipeline system has a potential enabling it in future to export oil to the Central Asian countries and China in significant amounts.

3. Export pipeline projects should be based on cooperation with predominantly European partners since, firstly, their stance in Caspian oil shipments is in perfect agreement with Kazakhstan's strategy aiming to create a multioptional pipeline network. Secondly, because their position is not troubled by a confrontation with Iran and they agree to start an economically feasible pipeline across Iran.

4. To safeguard the national interests of CIS countries it would be advisable to enhance coordination of efforts on the energy front, on the oil one in particular. Consideration can be given in this context to a possibility of creating appropriate correlation mechanisms in partnership with CIS oil producing nations.

(6,980 words)