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## **TRANSIT PROBLEMS OF THE ENERGY DIPLOMACY OF THE REPUBLIC OF KAZAKHSTAN AND THE MODERN WAYS OF SOLUTIONS**

### **Abstract**

Geographical location of Kazakhstan (in the center of Eurasian continent) makes it difficult to solve problems of oil transportation to the world markets, with the consequence that oil pipeline transport has become exclusively important for Kazakhstan.

**Key words:** *energy diplomacy, oil and gas sector, transit problems.*

### **Аңдатпа**

Қазақстанның географиялық орналасуы (Еуразия құрлығының ортасында) әлемдік нарықтарға мұнай тасымалын қиындата түседі, нәтижесінде мұнай құбырлары арқылы тасымал Қазақстан үшін ерекше маңызға ие.

**Тірек сөздер:** *энергетикалық дипломатия, мұнай-газ секторы, транзиттік мәселелер.*

### **Аннотация**

Географическое положение Казахстана (в центре Евразийского континента) затрудняет решение проблемы транспортировки нефти на мировые рынки, вследствие чего нефтепроводный транспорт для Казахстана приобрел исключительную важность.

**Ключевые слова:** *энергетическая дипломатия, нефтегазовый сектор, транзитные проблемы.*

Kazakhstan's geographic location (in the center of the Eurasian continent) complicates the transportation problem of oil to the world markets, resulting in a unique importance of the pipeline transport for Kazakhstan.

The main impediment having kept from the oil potential development of the Republic of Kazakhstan is an insufficient capacity of the existing pipelines coupled with the absence of outlets into the World ocean. The production growth has occurred without any significant infrastructure improvements. Kazakhstan has the only active export pipeline, which runs north through Russia and then turns to the West through the Russian pipeline system "Friendship" that is geared to the European market.

The oil and gas birthplaces in Kazakhstan are already bound up with the oil and gas pipelines of different length which obtain the raw materials processing's objects in the Russian Federation (cities: Orsk, Orenburg, Samara), directly in Kazakhstan (cities: Atyrau, Aktau Zhanaozen). However, all these linehaul structures are in operation for a long time and no other function, excepting capacity supply to the marked oil and gas plants, is not carried out. Moreover, their exploitation hasn't been yet provided to use as arteries for transferring hydrocarbons of the export destination in perspective. And it is important that the pipelines export supplies through Russia are limited within quotas for transit.

Therefore the transportation factor gained a crucial role for the current moment. For the successful and cost-effective oil operations need there are two major problems of our state to solve:

- no direct access to foreign markets of hydrocarbons due to the geographical position of Kazakhstan;
- restriction to oil supply volumes for the certain customers of the foreign countries due to lack of its own extensive oil-pipe system.

Currently the world oil market has been completely changing and the oil production questions in any country about onto sales opportunities.

Now the introduction of the Kazakhstan existing hydrocarbon reserves in the domestic and worldwide consumption turnover is limited on the number of negative factors among which are:

- an undevelopment of the oil transportation infrastructure in the republic with maximum binding the Caspian oil development to the existing system of pipelines, ports and terminals;
- the current conditions of pipelines transportation not sufficiently ensuring the hydrocarbons supply to the foreign and domestic market;
- the deep subcontinental location of the republic and the considerable distance to the world oil markets.

In this regard, in order to effectively use the existing resources and to grow the hydrocarbons exports, it is necessary not only to dramatically increase in producing, but also to create a reliable and cost-effective oil transportation infrastructure providing, firstly, an unfettered export of oil and gas, and secondly, an interpenetration the internal energy market.

As a result of the research project data the alternative constructions ranking of the new pipelines building and of the export systems creating were conducted. The possible export routes for Kazakhstan are:

- westward – the export pipeline and the Trans-Caspian pipeline;
- eastward – the Kazakh-Chinese oil pipeline;
- southward - directed to the Persian Gulf – the Iranian oil pipeline, the Arabian Sea – the Trans-Asian pipeline.

The main supply routes for Kazakh oil industry today are the Caspian Pipeline Consortium (CPC), Atyrau-Samara, Kazakhstan-China and the marine transportation system through the port of Aktau.

The CPC pipeline of the total length 1,580 km connects the Kazakh oil birthplace “Tengiz” and the oil terminal on the Russian coast of the Black Sea near the port of Novorossiysk. CPC is the largest supply area of the Kazakh oil exports.

Since the beginning of the pipeline operation (2001) over 131 million tons, including 31.1 million tons in 2006, 25.6 million tons in 2007 were transported on it [1].

For Kazakhstan, the CPC pass-through function's enlargement up to 67 million tonnes per year (including 50 million tons a year for the Kazakh oil) acquires the actual meaning with account of the hydrocarbon production augmentation in prospect. But, unfortunately, the solution of this issue has been postponed due to the absence of the agreed position of the consortium members for this project.

Another important export route is the Atyrau-Samara pipeline, which is providing an access to the markets of Eastern Europe through the Baltic pipeline system, to the “Friendship” system as well as to the Black Sea ports.

About 15.6 million tons in 2006, 16.0 million tons in 2007 were transported to export through the “Atyrau-Samara” pipeline [1].

The National Company “KazMunaiGas” together with the Russian company “Transneft” thrashes out the issue of the capacity increasing of the Atyrau-Samara pipeline up to 20 million tons per year, followed by expansion up to 25 million tons per year with a glance to the planned growth in oil production, particularly in the western Kazakhstan.

Currently the Atyrau-Samara pipeline's pass-through function is possible by dint of the light fuel oils transporting of the Tengiz, Karachaganak and Kashagan birthplaces by implementing the coherent transfer technology.

In this regard, the Kazakh side engages in talks on the above mentioned matter of the “Transneft” joint stock company.

“The Century Project” is the title of the Atasu-Alashankou pipeline in Kazakhstan. The constructing rate, the amount of the inserted investment, the planned volumes of oil transportation - all of them became a source of honor for the Kazakh administration.

The Atasu-AI Ashankou length is 988 km. Its construction began in September, 2004. The project was implemented jointly by the Kazakh national company “KazMunaiGas” and Chinese CNPC, for which the joint company “Kazakhstan-China pipeline” was set up.

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The total pass-through function of that project pipeline is 20 million tons per year, including the first phase - 10 million tons per year. This line has a peculiar meaning for Kazakhstan. From the purely economic point of view, this project is considered to be particularly advantageous for Kazakhstan as China takes the second point in the world after the United States on consumption of hydrocarbons. According to experts, the share of imports in the consumption of oil in China to 2030 may reach 83% [2].

China showed interest to the Kazakh oil for a long period of time. China's CNPC is acclaimed in Kazakhstan for 8 years - firstly in Kazakhstan "Aktobemunaigas", and by the end of October, the company has acquired 100% of the «PetroKazakhstan» stock items, the main assets of which are the Shymkent petroleum refinery (the southern region of Kazakhstan) and the Kumkol group of birthplaces (the Kyzyl-Orda region, the southern area of Kazakhstan). As for the Atasu-Al Ashankou, it is the second part of the Kazakhstan-China interstate oil transportation project.

The first part of it is the introduced Kenkiyak-Atyrau oil pipeline with the pass-through function of the first stage in 6 million tons of oil per year in the spring of 2003. The third part should be the Kenkiyak-Kumkol oil pipeline which is supposed to provide an output of oil from the western area of Kazakhstan to the Chinese border.

In addition, the Atasu-Alashankou – the Kazakhstan first oil pipeline that doesn't pass through the territory of Russia, that objectively reduces dependence of Astana on the policy of another great neighbor. Nevertheless, Kazakhstan and China are not going to keep Russia away: both countries rely on transition of the Siberian oil. Responsible for the pipeline completion lies on China, and, according to the Kazakhstan power engineers, China is already on the way of the relevant negotiations.

On the first phase of the Kazakhstan-China transnational pipeline project in Kazakhstan, some concerns about the possible deterioration of relations with Russia, and about the amount of resources are expressed. But There are no signs of discontents in Moscow - at least, still no. There is a hope in Astana that the Russian administration understands and accepts the Kazakh policy of balancing between the interests of the three leading players in the region: Russia, China and the United States [3].

In terms of resources, except the Chinese projects Kazakhstan participates in the Caspian Pipeline Consortium and the Baku-Tbilisi-Jeyhan pipeline, and this fact was the reason of some experts' fears that the country wouldn't have enough hydrocarbons to fulfill all its obligations. But now, after the reserves' confirmation in the Kazakhstan part of the Caspian shelf, all those fears were subsided. And most experts believe that the oil pipeline constructing into China - an example of successful bilateral cooperation of the neighboring states, and this project realization will connect the pipeline systems of three countries: Kazakhstan, Russia and China, which will provide the firm basis for the mutually beneficial partnership.

The first phase of the project envisages the construction of the Atasu (Kazakhstan) - Alashankou (China) oil pipeline. The oil pipeline constructing along this route has already been completed, and in 2006 it was commissioned. The second phase of the project covers the pipeline construction on the Kenkiyak-Aralsk-Kumkol route.

By its constructing completion the Kazakh-Chinese pipeline will pass from the western area of Kazakhstan to the east of the country from the Caspian port of Atyrau through Kenkiyak and Atasu and further to the Xinjiang Uygur Autonomous Region (XUAR), where the "Dushanzi" Xinjiang Oil Company provide its servicing. The total length of the pipeline is 3,040 kilometers, of which 2800 kilometers are on the territory of Kazakhstan and 240 kilometers on the territory of Xinjiang Uygur Autonomous Region. The Joint investment sum of China and Kazakhstan in constructing will be \$ 3 billion [4].

The first stage length of the Atasu-Alashankou pipeline route is 962 km, pipe diameter - 813 mm. Despite of its capacity in 20 million tons per year, only about 10 million tons can be pumped at the initial stage. Size of investments in the pipeline constructing on the first stage is about 800 million dollars, the cost of the oil supply per ton is 9.6 dollars [5].

The Alashankou-Dushanzi pipeline's length on the Xinjiang territory is 250 km. The Kumkol - Karakoin -Atasu pipeline is about 750 kilometers and its diameter - 813/914 mm.

The annual capacity comprises about 20 million tons of oil. In the future, the annual oil supply will increase up to 30-40 million tons [6].

The advantages of the Kazakhstan-China oil pipeline are in: firstly, the direct oil deliveries from Kazakhstan to China, secondly, the oil transportation through third countries, thirdly, no need for the rail transportation of oil, and finally, the high degree of transportation security. Moreover, the dependence on Russia in the oil export by the countries of Central Asia has been changing. Kazakhstan can export oil not only in China but also in other Asian countries. In general, as a result, the pipeline constructing will considerably strengthen the cooperation between China and Kazakhstan in the field of the energy producing and transport.

The successful implementation of this project gives the other Central Asian countries a pattern to build such type of the oil pipelines for exporting their oil to China.

The first oil in Kazakhstan was taken to Alashankou (the Xinjiang Uygur Autonomous Region) in April 30, 2006 along the Kazakh-Chinese pipeline and this fact indicates that it is time to address and resolve the issue of the oil transportation by the land linehaul pipelines.

The role of the Atyrau (Kazakhstan) - Dushanzi (Xinjiang Uyghur Autonomous Region of China) pipeline is extremely important because it is associated with the Pavlodar and Tyumen pipeline on the north-eastern area of Atyrau, and with Uzbekistan and Turkmenistan on the south-western part of Atyrau.

Russia and Turkmenistan - countries rich in oil, which can also take an advantage of the Atyrau - Dushanzi pipeline to export. So, for the last year of the total oil exports to China through this pipeline at a rate of about 10 million tons, 5 million tons of them were exported directly from Kazakhstan, and the other 5 million tons - from Russia. Thus, this pipeline has helped to strengthen the cooperation between three countries - China, Kazakhstan and Russia.

The Kazakhstan-China pipeline will not pass through third countries, thereby ensuring the political security and economic stability of China. However, having the Kazakhstan-China pipeline construction completed, China would be linked to the Kazakhstan pipeline system from the Caspian Sea to the eastern and middle parts of it. China can also participate in the international oil transportation, importing oil along the Kazakh-Chinese pipeline from the other countries of the Caspian basin. Based on the foregoing, it should be emphasized that after the the Kazakhstan-China oil pipeline constructing completion, the oil system of China, Kazakhstan, Turkmenistan and Russia will join. The result will be made in the common oil system: China - Russia - Central Asia [7].

To look at this question more broadly, this pipeline will be also stretched from the Chardjou oil birthplace in Turkmenistan to the south-western part of the country, making it connected with the northern oil birthplaces of Iran. The Kazakh-Chinese pipeline can connect three major oil-producing centers of the world: Russia, the Middle East, the Caspian basin, which in turn will positively impact on the oil resources' provision to China.

Under the agreements have been signed between Kazakhstan and China to build the pipelines of the natural gas and oil transportation, the new phase of the project will be possible launch in a short time. The oil and gas pipelines will be in parallel laid in Dushanzi and Urumqi. China has been already studying the issue of the construction of the oil and natural gas pipelines to transport.

As for the maritime transport, it should be stressed that the port of Aktau on the Caspian Sea coast is of great importance for the oil exports increasing. Today it is the only Kazakh port equipped with the marine oil terminals and the oil handling infrastructures that gives an opportunity to transportation of the Kazakh oil across the Caspian Sea to the ports of Azerbaijan (Baku), Russia (Makhachkala) and Iran (Neka).

Thus, a set of measures envisaged in the above projects' implementation will provide a certain amount of hydrocarbons transportation. In the future, it is necessary to create the new transport systems with due account for an increasing of hydrocarbon production in Kazakhstan.

In accordance with the Agreement between the Republic of Kazakhstan and Azerbaijan, Kazakhstan is implementing the Kazakhstan Caspian Transportation System (KCTS) project, which consists of the Yeskene Kuryk pipeline and the Trans-Caspian system. In turn, the Trans-



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Caspian system will consist of the oil discharge terminals on the Kazakh coast of the Caspian Sea, the oil tankers for the maritime transportation, the oil terminals on the Azerbaijani coast of the Caspian Sea and the connecting facilities to the Baku-Tbilisi-Ceyhan pipeline system.

It is planned that the TFCC will initially provide transportation up to 500 tys.bar. / day (23 million tons per year) with the following increasing up to 750-1200 tys.bar. / day (35-56 million tons of oil per year) [8].

While having an official visit to Kazakhstan, the President of Azerbaijan Republic Ilham Aliyev has signed the bilateral agreements with the "KazMunaiGas" National Company and SOCAR in August 8, 2007 in Astana: the agreement on the strategic cooperation in the oil and gas industry and the Memorandum on mutual cooperation on the Trans-Caspian project.

In addition, in 2006 the "KazTransOil" joint stock company (JSC) has acquired the share of the Nafttrans Capital Partners company, which owns a number of oil transportation assets in Georgia, as the Batumi oil terminal and the Petrotrans shipping company on the oil and petroleum products transportation [9].

This transaction enables Kazakhstan to purchase the highly liquid assets on the Black Sea, to take an advantage of the Batumi seaport's operating, which has the beneficial strategic and geopolitical location, and to provide the efficient transportation routes of oil to the world markets for shippers.

Another promising southern issue is the oil transportation to Iran.

The "KazMunaiGas" JSC jointly with Total, JNOC and INPEX is currently working on the Kazakhstan-Turkmenistan-Iran pipeline project as an alternative route of the Caspian oil supply to the market of the Persian Gulf.

Nowadays the participants of the research study only the first phase's realization of this project, which involves a tanker transportation (without pipeline constructing) from the terminals of Kazakhstan to the Iranian port of Neka.

The actual problem is still the congested Turkish straits tied with a large number of the cargo ships and tankers, coming through the Bosphorus and Dardanelles straits between the Black and Mediterranean seas.

The requirements for security in navigation and environment protection impose the certain restrictions on the straits' pass-through possibilities affecting the transportation limits on the additional volumes of the Kazakh oil and raising the question of the bypass projects' implementation.

In this connection, Kazakhstan is looking for the participation in the Burgas - Alexandroupolis and the Odessa-Brody-Plock-Gdansk pipelines' constructing [10].

In the energy policy implementing, Kazakhstan adheres to the multi-pronged approach and pays the special attention to the new export routes' creation for the oil supplies to the world market that will be an important factor in the export potential development of the country and its economic security strengthening.

Summing - up the analysis of the most appropriate routes for Kazakhstan and more accurate transit potential, it should be noted that it is necessary to solve a number of problems:

the first is connected with the oil resources in the Caspian Sea. From the standpoint of the forecasts made at its time (more on the geopolitical considerations), the prospects are impressive. The recoverable oil resources of the Caspian Sea are determined in the range from 25 to 200 billion barrels, or from 3 to 27 billion tons. The actual volumes are not comparable to those which are of necessity to pump the alleged pipelines to repay expenditures;

– the second one concerns the market outlet. The long-term projections of growth in hydrocarbons consumption indicate that the most promising and dynamic market is the south-east part of Asia;

– the third problem is related to geopolitics. The "Big Oil" of the Caspian Sea and its transportation routes in the future will determine the rules of the political game among the leading Western powers and the Central Asian regional leaders in the key region of Eurasia. This makes the region as a whole and individual countries are extremely dependent on the geopolitical interests of the leading powers.

These reserves confirmation and the total hydrocarbon production splicing by the countries of the Caspian region may lead to the hydrocarbon raw materials oversupply on the world market and to the tough competition among the producing countries. In this situation, the foreign companies can dramatically reduce the investment activity in the oil regions of those countries which did not manage to determine the routes' choice and to solve their problems. Whereas the decision making due to some economic reasons and due to being under the pressure of their own governments cannot be brought into action.

Using of the oil transportation capacity of the republic should, in our opinion, be based on the actual volumes and economic benefits that are needed to count before the optimal country oil transport routes will be selected for the country, the multi-variant transportation capacity will be used on a base of the "tariff factor" on the pipeline transportation services for the effective use of the geopolitical position of Kazakhstan.

Due to its geographical position, Kazakhstan has no an independent access directly to the world oil markets. The solution of both the economic and political issues in choosing partners for the foreign economic activities tied with the hydrocarbon realization is becoming more serious for the state. This obliges to make such decisions on the state stage, which would make it possible to receive the significant economic benefits during a long time.

Today, when almost all the major oil companies in the world and the countries - owners of the oil and gas resources are showing keen interest in the development of hydrocarbon feedstock in Kazakhstan as on the mainland and in offshore areas, it should be especially careful in choosing the variants of cooperation from the numerous offered options, which would contribute to the real development of the oil producing, refining and petro chemistry on the high technical and technological level to obtain the mutually beneficial commercial results.

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Дата поступления статьи в редакцию 09.02.2016