

Development of the Energy Cooperation between Kazakhstan and China under the Belt and Road Initiative

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Abstract:- This paper is determined by the ongoing changes in the modern system of international relations. The geopolitical landscape is becoming diverse and multipolar. At the same time, the factors of instability and uncertainty are increasing, the situation in the world economy continues to be unstable, the process of economic globalization is facing an increase in unilateral protectionist measures, and economic sanctions are beginning to turn into trade wars. The risks and threats associated with armed conflicts, manifestations of terrorism and religious extremism in various regions of the world, illegal drug trafficking and international organized crime are increasing.

Special attention is paid to the status and prospects of linking the Belt and Road Initiative with the Eurasian Economic Union and Kazakhstan's Nurly Zhol strategy, as well as issues of bilateral and multilateral cooperation in order to ensure regional security. Today, regarding the new realities and emerging conditions of economic, financial, industrial, transport and communication, the need for scientific and educational cooperation between Kazakhstan and China is revealed.

Keywords:- China, Kazakhstan, Energy, Trade, Belt and Road Initiative, Cooperation.

I. INTRODUCTION

The relevance of this research is determined by the ongoing changes in the modern system of international relations. The geopolitical landscape is becoming diverse and multipolar. Simultaneously, the factors of instability and uncertainty are increasing. The situation in the world economy continues to be unstable, the process of economic globalization is facing an increase in unilateral protectionist measures, and economic sanctions are beginning to turn into trade wars. The risks and threats associated with armed conflicts, manifestations of terrorism and religious extremism in various world regions, illegal drug trafficking, and international organized crime are increasing.

Special attention is paid to the status and prospects of linking the Belt and Road Initiative with the Eurasian Economic Union and Kazakhstan's Nurly Zhol strategy, as well as issues of bilateral and multilateral cooperation in order to ensure regional security. Today, concerning the new realities and emerging conditions of economic, financial, industrial, transport, and communication, the need for scientific and educational cooperation between Kazakhstan and China is revealed.

Cooperation between China and Kazakhstan in the framework of this initiative is always in the first row among other countries, reflects the mutual complementarity of advantages and mutually beneficial nature, bringing tangible benefits to the peoples of the two countries. An in-depth alignment of the Belt and Road Initiative with the New

Economic Policy Nurly Zhol is being carried out. Kazakhstan is the largest recipient country of Chinese investment among the countries along the Silk Road, with China's total investment in Kazakhstan to date exceeding \$ 43 billion. With the opening of several China-Europe container train routes through Kazakhstan, Kazakhstan has become an essential link for transit traffic in Eurasia from an inland country. The volume of transit traffic is multiplying every year. China-Kazakhstan industrial cooperation has created many records for Kazakhstan: the first aluminum plant, the first large hydroelectric power plant. All this has significantly contributed to the development of economic diversification and an increase in Kazakhstan's level of production capacity. The China-Kazakhstan logistics cooperation base in Lianyungang allowed Kazakhstan to gain access to the sea for the first time, which increased its export volume and became an international economic platform for transit transport, warehouse logistics, and mutual trade for the countries of Central Asia. Cooperation within the Belt and Road Initiative framework firmly binds China and Kazakhstan together. The joint construction of the Belt and Road Initiative by China and Kazakhstan has entered a new stage of deeper integration and mutual stimulation.

The most crucial factor in building modern international relations is held just right and is essential. It allows us to feel the special attention that Kazakhstan's scientific circles pay to the Belt and Road Initiative, their close attention to the development of China, and the expectations of the Chinese-Kazakh relations. The Belt and Road Initiative embodies the wisdom of Chinese President Xi Jinping's diplomatic thinking, keeping pace with the era trends. China's vital measure to expand comprehensive openness in global globalization and an essential practical platform for creating a community of humanity's common destiny and forming a new type of international relations. The Belt and Road Initiative firmly adheres to global governance based on joint consultation, joint construction, and sharing, reflecting the vision of international cooperation based on mutual respect, impartiality, justice, and mutually beneficial cooperation support economic openness and multilateralism.

The initiative's goal is to stimulate the growth of the world economy and achieve joint development of all countries. As practice shows, the Belt and Road Initiative has been widely recognized and accepted by the international

community and has also become an essential factor in building modern international relations.

Research Questions

The development of the modern economy is more and more dependent on energy. Both industry and people's life are inseparable from the support of energy. Therefore, energy cooperation is an integral part of trade cooperation among countries. At present, the world energy pattern is gradually changing. Although oil is still the primary source of world energy consumption, with the continuous development of science and technology, economic progress, and environmental protection requirements, the demand for all kinds of new energy is also increasing. Therefore, the first research question is:

(1) What is the current situation of the energy sector in Kazakhstan and China?

At present, energy cooperation between China and Kazakhstan is mainly in two aspects:

First, oil and gas energy cooperation facing the shortage of oil and gas energy in China is an inevitable choice to strengthen the energy-going strategy and cooperate with countries and regions rich in energy resources. Kazakhstan is rich in oil and gas resources and is on the Silk Road Economic Belt route. Compared with China's oil and gas resources are in short supply, Kazakhstan's domestic oil and gas supply is higher than consumption, and Kazakhstan's domestic technology level is not high; its energy utilization efficiency is low. In contrast, China's technology is relatively mature, and This has contributed to the energy complementarity between China and Kazakhstan. Therefore, the trade between China and Kazakhstan is dominated by energy cooperation, especially in oil and gas energy. With the Silk Road Economic Belt construction, there will be more possibilities for energy cooperation between the two sides in the future.

The second is new energy cooperation. Since its independence, Kazakhstan has relied on oil, natural gas, and other advantages. Here are the following research questions at this point:

(2) What are the factors limiting the cooperation between Kazakhstan and China?

(3) *What the prospect scenarios for the energy cooperation between Kazakhstan and China under the Belt and Road Initiative?*

According to the research questions, the tasks that are considered in work were set, namely:

- consider the background of the study;
- to analyze the Kazakh-Chinese cooperation in the oil and gas sector;
- to assess the competitiveness of Kazakhstan in the Chinese oil and gas market;
- to study the scenario of Kazakhstan and China development strategy in the energy sector within the framework of the Belt and Road Initiative;
- to study the Belt and Road Initiative as a factor of development of Kazakhstan and China.

II. RESEARCH METHODS

The author used the statistical method, the cluster analysis method, quality control maps, forecasting, observation, and description when writing the work. When studying the trends in the development of relations between Kazakhstan and China, a situational analysis described these methods' work in more detail below for a detailed discussion of the topic.

The object of research in applied statistics is statistical data obtained as a result of observations or experiments. Statistical data is a collection of objects (observations, cases) and features (variables) that characterize them. For example, the objects of research - countries of the world and features-geographical and economic indicators that characterize them: the continent; the height of the area above sea level; the average annual temperature; the country's place in the list in terms of quality of life, the share of GDP per capita; public spending on health, education, and the army; average life expectancy; percentage of unemployment, illiterate; quality of life index, etc.

Variables are quantities that can take on different values as a result of a measurement.

Independent variables are variables whose values can be changed during the experiment, and dependent variables are variables whose values can only be measured.

Most statistical methods, based on which a random vector of variables forms some multidimensional distribution, are usually standard or converted to a normal distribution. If this assumption is not confirmed, you should use nonparametric methods of mathematical statistics.

Cluster analysis. Cluster analysis is a method of classification analysis; its primary purpose is to divide the set of objects and features under study into groups or clusters that are homogeneous in some sense. It is a multidimensional statistical method, so it is assumed that the initial data can be of a significant volume, i.e., the number of objects of research (observations) and the features that characterize these objects can be significantly large. The great advantage of cluster analysis is that it can divide objects not by one feature but by several features. Besides, unlike most mathematical and statistical methods, cluster analysis does not impose any restrictions on the type of objects under consideration and allows you to study a set of source data of an almost arbitrary nature. Since clusters are groups of homogeneity, the task of cluster analysis is to divide their set into m (m - integer) clusters based on the features of objects so that each object belongs to only one partition group. In this case, objects belonging to the same cluster should be homogeneous (similar), and objects belonging to different clusters should be heterogeneous. Suppose the clustering objects are represented as points in the n -dimensional feature space (n is the number of features that characterize the objects). In that case, the similarity between the objects is determined by the distance between the points since it is intuitively clear that the smaller the distance between the objects, the more similar they are.

Quality control cards. In the modern world, the quality of manufactured products and services provided to the population is highly relevant. The well-being of any firm, organization, or institution largely depends on the successful solution to this critical problem. The quality of products and services is formed in scientific research, design, and technological development and is ensured by a good production and service organization. Therefore, developing quality control methods that will allow timely identification of signs of a violation of the technological process or providing services is relevant. Simultaneously, to achieve and maintain a high level of quality that satisfies the consumer, methods are needed that are not aimed at eliminating defects in finished products and non-conforming

services but at preventing and predicting the causes of their occurrence. A control card is a tool that allows you to track the progress of the process and influence it (with the help of appropriate feedback), preventing its deviations from the requirements imposed on the process. The quality control maps toolkit makes extensive use of statistical methods based on probability theory and mathematical statistics. The use of statistical methods allows for limited volumes of analyzed products with a given degree of accuracy and reliability to judge the quality of the products. Provides forecasting, optimal regulation of problems in quality, making the right management decisions not based on intuition but with scientific study, and identifying patterns in the accumulated arrays of numerical information.

A prediction method is a sequence of actions that must be performed to obtain a prediction model. By analogy with cooking, a method is a sequence of actions according to which a dish is prepared — that is, a forecast is made, where the method has two groups: intuitive and formalized.

Intuitive forecasting methods deal with expert judgments and assessments. Today, they are often used in marketing, economics, and politics because the system whose behavior needs to be predicted is either very complex and cannot be mathematically described or very simple and does not need such a description. For more information about such methods, see.

Formalized methods are forecasting methods described in the literature, as a result of which forecasting models are built; that is, they determine such a mathematical dependence that allows you to calculate the future value of the process, that is, to make a forecast.

Sociological observation is the tracking and recording of significant parameters of the object of research. The state of the process or phenomenon under study is fixed through various tools that are the most adequate for the study. So, depending on the tasks set, you can apply:

- formalized and semi-formalized observation forms,
- audio, video recording, and photo recording tools,
- written presentation of the results in free form.

Thus, in contrast to the so-called ordinary observation, scientific and practical focus on obtaining specific information necessary to achieve a specific research goal is characterized by organization and systematicity.

Advantages and possibilities of the method:

- the variety of tasks to be solved: observation is an indispensable tool for marketing research, used both at the project development stage (be it real estate, advertising design, trading company, etc.) Furthermore, solve the current task (evaluation of the staff's quality, analyze various aspects of consumer behavior, etc.)
- variability of the degree of formalization: depending on the objectives, monitoring can be performed at the most structured tools and no further presentation of results in an accessible form.
- the possibility of establishing the degree of involvement and openness of observation by the researcher: thus, by the approved methodology, the observer can inform the representatives of the studied audience (object) about the research in advance, do it at any stage of the project, or do not inform any of the participants at all. Observation can be carried out from the outside or with the observer's direct involvement in the studied process.

Sociological practice most often defines the following types of observation:

By the degree of openness of the observer:

- open observation, implying that the study participants are aware of the role of the observer.
- Covert surveillance, in which the study group representatives do not know that they are the object of the study.
- Depending on the observer's involvement in the process:
 - enabled observation - the researcher becomes a part of the phenomenon/group being studied, is in direct contact with the audience representatives.
 - non-included observation-the researcher records significant characteristics from the outside without informing the participants about their role and the real purpose of their presence.

The included observation is classified in turn according to the role of the observer:

- full participation of the observer in the situation (participant-hidden observer). A classic example is mystery shopping. The researcher, acting as a consumer, is a full-fledged actor of the situation.
- participation in the situation as an observer (participant-open observer). In this case, it is assumed that the observer is a participant in the process, actively interacts with the group, but its representatives are aware of its role, as can happen in various socio-psychological studies.
- an observer as a participant in the study (open observer). This technique involves the interaction of the observer with the social process participants without participating in it. For example, the time spent when the researcher is present when performing the duties of an employee and registers the necessary information.
- the situation of complete observation (hidden observer). This method implies a complete lack of interaction with the participants in the process. In this way, you can study some consumer behavior parameters, such as the sequence of actions when making a purchase, the routes of movement on the trading floor, etc.

The situational analysis methods involve generating economic scenarios and deterministic factor modeling of the system's response to the generated scenario, measured by the system's financial results. All scenarios in their general population are assigned probability weights. Thus, the final expected result is interpreted as the mathematical expectation of a random variable of the indicator, distributed following the input scenarios' initial weight distribution.

The method of situational analysis uses a new situation of the control object as the object of research. Typical problems of a situational nature are, for example, international conflicts and crises. In the case of other types of problems, other methods are effective. The situational analysis allows you to organize and direct the process of active collection, evaluation, and processing of existing primary information and reproducing new, secondary information, both analytical and predictive.

So, we determined the research methods that allowed us to reveal the research topic, conduct an in-depth analysis, and

display Kazakhstan and China's problems and prospects in energy cooperation.

Assessment of the oil market in the Kazakh-Chinese cooperation

Currently, the volume of exports of oil and gas resources of the Central Asian countries to China is relatively large (Table.1), however, is still focused on two aspects: resource exploration and development, and pipeline transport.

Table 1. Export of oil and gas resources of China and Kazakhstan¹

Indicators	Export of oil and gas resources to China (USD billion)	Share of exports to China (%)
2016	5.5442	14.7
2017	9.6503	16.8
2018	9.1057	15.5
2019	8.8855	15
2020	5.0965	9.2

In addition to developing oil and gas resources, significant progress has been made in the construction of pipelines between China and Kazakhstan. The Chinese company for the exploration and development of oil and natural gas and the Joint-Stock Company KazTransOil (in equal shares) founded the Kazakhstan-China Pipeline LLP, responsible for the investment, construction, and management of operations within the framework of the Kazakhstan-China oil pipeline project. The pipeline begins in the Caspian Sea region, in Atyrau, passes through Aktobe, and through the border region of Kazakhstan with China - Alashankou - reaches the autonomous region of Xinjiang in the PRC. According to the plans, the total length of the pipeline line is 2,755 kilometers; the annual capacity is 20 million tons of oil. The Kazakhstan-China pipeline was the first interstate oil pipeline in China serving the overland route of crude energy transportation. This pipeline has become the only line for

¹ «Integration projects in Eurasia: problems of socio-economic development». Collection of materials of the scientific conference, Almaty, IMiRS KNU, Branch of the Rosa Luxemburg Foundation (FRG) in the Russian Federation, May 27, 2021-Almaty: IMiRS KNU, 2021-248c.

Kazakhstan that does not pass through a third country but goes directly to the final consumer of crude oil. The pipeline was officially put into commercial operation, and the total supply of crude oil to China exceeded 77 million tons.

The Kazakhstan-China gas pipeline is an integral part of the China - Central Asia pipeline. The Central Asian gas pipeline is divided into four lines: A, B, C, D, while the two segments A and B were essentially laid simultaneously. The starting point is the right bank of the Amu Darya, the border with Uzbekistan, then the gas pipeline passes through the central part of Uzbekistan and the southern part of Kazakhstan, reaches China in the city of Alashankou, and then connects with the second gas transfer line from west to east. Line C begins at the border with Uzbekistan, runs through Uzbekistan and Kazakhstan, reaching Khorgos City County, in Xinjiang, China, and connects to the third gas transfer line from west to east. The direction of the pipeline D differs from the considered lines A, B, and C: the starting point is the gas field of Turkmenistan, then the route passes through Uzbekistan, Tajikistan, Kyrgyzstan and reaches the southern part of Xinjiang, according to the plan, connecting with the fifth gas transfer line from west to east.

Over the past decade or so, Chinese oil companies have gradually added exploration, transportation, processing, sales of petroleum products, and engineering services to the exploitation of Kazakhstan's gas and oil resources. The oil and gas cooperation between China and Kazakhstan in Central Asia started quite early and became the most extensive and large-scale.

Mutual contracts and diplomatic relations of the Kazakh-Chinese cooperation

Nuclear energy will become a sphere of cooperation between the two neighboring states. China is committed to ensuring that its cooperation with Kazakhstan covers the entire production chain – from uranium mining to Chinese-developed Hualong-1 reactor technologies in Kazakhstan.

Kazakhstan is one of the leading suppliers of uranium, with a global market share of approximately 39 percent. Nuclear energy is considered one of the most striking examples of fruitful cooperation between China and Kazakhstan.

China General Nuclear Power Group (CGN) began to develop the Kazakhstan market in 2006. The domestic nuclear energy giant, together with the Kazakhstan national nuclear company Kazatomprom, is engaged in both natural uranium trade and uranium mining and the production of fuel assemblies.

As of the end of May this year, Kazatomprom supplied CGN Corporation with about 20 thousand tons of natural uranium, said Li Chengan, Deputy General Director of the Chinese-Kazakh company Semizbay-U.

The Semizbay-U company was established in 2006 to implement projects for developing the Irkol and Semizbay uranium deposits, which are located, respectively, in the south and north of Kazakhstan. To date, 49 percent of the company's shares are owned by the Chinese side.

CGN and Kazatomprom announced their decision to implement the project of a fuel assembly plant in Kazakhstan. Construction of the joint venture officially began at the end of last year, and preparations for production are proceeding as planned².

This project will be indicative of bilateral cooperation in the development of environmentally friendly energy sources. Its implementation will increase the level of the fuel industry in Kazakhstan.

According to the data, the company will produce 200 tons of fuel assemblies per year, and its products will be delivered to China for use in nuclear power plants.

At the same time, Kazakhstan and other countries have shown great interest in the technologies of the third-generation Hualong-1 reactor fully developed by Chinese specialists.

The Hualong-1 reactor was jointly designed by CGN and the China National Nuclear Corporation (CNNC) and was

² «Post-Expansion Shanghai Cooperation Organization: Risks, Opportunities and Prospects». Collection of materials of the round table. Almaty, IMiRS of the Kazakh-German University, Expert Club «One Belt and One Road», May 15, 2018 Almaty, IMiRS of KNU, 2018. - 142 p.

tested by a national expert group. The Hualong-1 technology, according to experts, has allowed China to stand on a par with countries with advanced nuclear technologies.

In Fujian Province in eastern China, the installation of the Hualong-1 reactor dome at the fifth unit of the Fuqing nuclear power plant was completed, marking the transition of the project to the equipment installation phase.

It is reported that Kazakhstan is preparing to implement a project to build the country's first nuclear power plant, and China has done a lot to promote the use of Hualong-1 technologies in Kazakhstan.

So, CGN and Kazatomprom agreed to expand and deepen mutually beneficial cooperation in the nuclear energy sector. Besides, Chinese enterprises held a technology presentation in Astana, and a meeting of officials and nuclear specialists from the two countries was held in the Chinese city of Shenzhen.

Assessment of Kazakhstan's competitiveness against China in the oil and gas market

Turning to the specific aspects of practical energy cooperation, it should be noted that China focuses on developing bilateral relations with the countries of the region and on the development of cooperation within the framework of multilateral, regional structures (in particular, the SCO). In general, energy cooperation with the countries of the region is multifaceted and is developing in several areas, such as:

- joint field development and pipeline construction;
- China invests in the relevant industries of the Central Asian countries (including assistance in the modernization of energy capacities);

The Chinese side provides concessional loans and technologies, and equipment necessary to develop and operate hydrocarbon deposits and many others.

At the same time, at the present stage, China focuses on two aspects: the construction of oil and gas pipelines connecting fields in Central Asia with the western regions of the PRC and the acquisition of rights to develop hydrocarbon

deposits by Chinese companies³. As for the development of energy cooperation at the bilateral level, the Chinese leadership focuses on developing relations with Kazakhstan, Turkmenistan, and Uzbekistan, which have rich energy resources. Kazakhstan is the most critical geopolitical energy partner of China in Central Asia. Simultaneously, the level of energy cooperation with Kyrgyzstan and Tajikistan is much lower due to several objective reasons (the lack of significant oil and gas reserves).

Assessment of Kazakhstan in a competitive environment in the oil and gas market

In 2020, the market for oilfield services in Kazakhstan decreased by 25% compared to last year, to \$ 6.7 billion.

After the oil market crisis in 2015-2016, Kazakhstan experienced a rapid recovery of the oilfield services market by an average of 14% per year until 2019. In contrast to the global and Russian oilfield services markets, the market volume in Kazakhstan exceeded the pre-crisis indicators of 2014 and amounted to the US \$ 8.9 billion in 2019.

The main reason for this growth was the implementation of major projects to expand the Tengiz (\$45.2 billion in 2016-2023) and Kashagan fields (commercial production started in 2016, investments in the first stage of expansion amounted to \$ 5 billion in 2019-2024)⁴.

Almost all of the growth in the oilfield services market was associated with construction and installation work in projects to expand the Tengiz field. This market segment grew from \$ 1.7 billion in 2014 to \$ 4.9 billion in 2019. About 80% of this amount is accounted for in the framework of the project to expand the Tengiz field.

³ «Integration projects in Eurasia: problems of socio-economic development». Collection of materials of the scientific conference, Almaty, IMiRS KNU, Branch of the Rosa Luxemburg Foundation (FRG) in the Russian Federation, May 27, 2021-Almaty: IMiRS KNU, 2021-248c.

⁴ Customs statistics of foreign trade of the FCS-URL: stat.customs.com; (accessed 10.03.2021)

In 2020, there was a significant drop in the oilfield services market due to lower oil prices and production restrictions in Kazakhstan under the OPEC+ agreement.

According to preliminary estimates, the oilfield services market in Kazakhstan in 2020 decreased by 25% in dollar terms and amounted to 6.7 billion US dollars.

Tengizchevroil accounts for 72% of orders for oilfield services in monetary terms, and about 80% of the oilfield services market in Kazakhstan is concentrated in the Atyrau region due to the implementation of projects to expand the Tengiz and Kashagan fields.

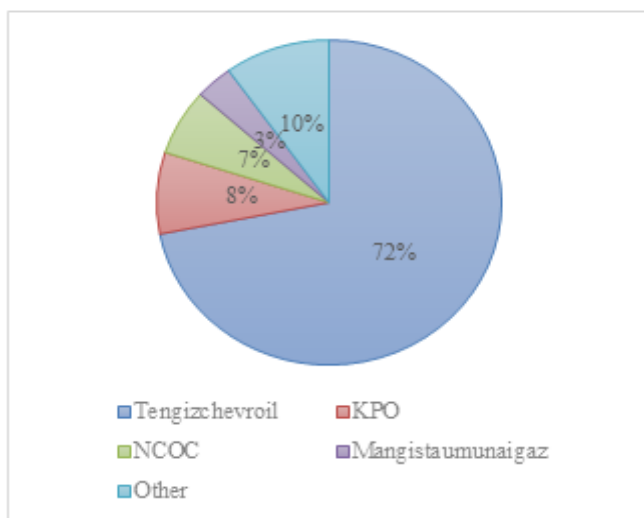


Figure 1 - Structure of the oilfield services market in Kazakhstan by customers in 2019, % of the volume of orders in monetary terms⁵

The largest customer of oilfield services in Kazakhstan is Tengizchevroil, which accounts for 72% of the market volume, including more than 85% of the financing of construction and installation works, design and engineering, 56% of the financing of maintenance and repairs, 45% of the financing of geological exploration and geophysics, and 20% of drilling operations.

The operators of other significant fields in Kazakhstan are in the second and third places in terms of orders: Karachaganak Petroleum Operating (KPO) — 8% of the

⁵ Customs statistics of foreign trade of the FCS-URL: stat.customs.com/; (accessed 10.03.2021)

market, North Caspian Operating Company (NCOC) — 7% of the market, Mangistaumunaigaz — about 3.5%. The remaining customers generally account for about 10% of the market.

Geographically, the most significant volume of orders is located in the Atyrau region, where the Tengiz and Kashagan fields are located (about 80% of the market).

The market of oilfield services in Kazakhstan has about a thousand participants. In 2020, the share of Kazakhstani companies accounted for 44% of the market volume in dollar terms.

In the oilfield services industry of Kazakhstan, there are about a thousand companies that employ more than 150 thousand people.

From the contractors' point of view, this market in Kazakhstan is divided between two main groups: local players (including those organized in the form of joint ventures with foreign companies) and extensive international and Chinese oilfield service companies.

In 2020, the total share of Kazakhstani companies amounted to 44% of the volume of orders in dollar terms. The smallest share of national market participants is observed in the design and engineering segments (20% of the market), geology and geophysics (35% of the market), as well as in the largest segment of construction and installation works (40% of the market). Most of the market is occupied by local companies in the drilling, repair, and maintenance segments. In 2020, 807 oil and gas wells were constructed, with total funding of \$ 0.7 billion, excluding VAT.

The production drilling segment in Kazakhstan has not recovered from the 2015-2016 crisis. In 2020, the construction of 807 oil and gas wells was completed (2019: 1,107 wells), with total funding of US \$ 0.7 billion excluding VAT (2019: US \$ 1.1 billion excluding VAT) ⁶.

⁶ Ministry of National Economy of the Republic of Kazakhstan. Committee on Statistics. URL: <http://stat.gov.kz/> (accessed 15.03.2021)

Compared to 2014, the volume of drilling in 2020 decreased by 2.1 times in physical terms and four times in dollar terms. The average cost of drilling one well after a decline in 2015-2018 has stabilized at the level of 900-950 thousand US dollars, excluding VAT.

In 2020, the volume of exploration financing in Kazakhstan amounted to the US \$ 348 million, excluding VAT. 72% of the market (the US \$ 250 million) is accounted for by hydrocarbons, 28% - by solid minerals and groundwater.

Since 2015, the structure of the market by sources of financing has not changed much. The own funds of national companies and subsurface users account for about 95% of the financing of geological exploration, the republican budget-about 5%.

Currently, exploration for hydrocarbons is fully funded by national companies and subsurface users.

The draft state program of geological exploration for 2021-2025 assumes a significant increase in budget funding.

The total amount of funding from the republican budget may amount to 200 billion tenges (about 450 million US dollars) over five years. Of these, 85 billion tenges (the US \$ 200 million) are planned to be spent on 2D seismic exploration and parametric drilling.

The volume of financing of geological exploration under the state program due to attracted investments is estimated at 800 billion tenge (1.8 billion US dollars) over five years. Based on the current market structure, about 600 billion tenges (the US \$ 1.3 billion) can be allocated to explore hydrocarbons, including 281 billion tenges (the US \$ 630 million) for the projects of Kazmunaygas JSC.

So, in recent years, the Government of Kazakhstan and the largest customers of oilfield services have taken measures to stimulate the growth of the share of local players in the national oilfield services market, which has led to an increase in the number of joint ventures with foreign companies.

Assessment of China in the competitive environment in the oil and gas market

After the COVID-19, domestic oil demand in China has fully recovered. In May and June, Chinese companies took advantage of falling prices and bought record volumes of oil

abroad. The dependence on imports has grown to a critical level. Beijing is boosting its production and diversifying its supply sources. Thanks to the accumulated reserves, China has gained the opportunity to influence the global oil market. Bloomberg reported on the shipment abroad of the first batch of oil from the storage facilities of the INE (Shanghai International Energy Exchange).

Due to the strict self-isolation regime during the COVID-19 in China, the demand for petroleum products has significantly decreased, and, as a result, the volume of oil refining has fallen. The most significant drop occurred in February when Chinese refineries processed about 10 million barrels per day. As the self-isolation regime eased, demand for petroleum products began to recover rapidly in the following months. During the COVID-19, there was a delayed demand, which led to a jump in demand for petroleum products in the domestic market in May and June.

According to the National Bureau of Statistics of the People's Republic of China, the country's primary oil refining reached a record high of 57.87 million tons (14.08 million barrels per day) in June. The previous record was set in May when Chinese refineries processed 13.63 million barrels per day⁷.

In May, China even became a net importer of petroleum products for the first time since the beginning of 2014: imports amounted to 3.93 million tons, and exports – 3.89 million tons. In June, China regained its status as a net exporter of petroleum products, but exports exceeded imports by only 0.37 million tons. Due to the increase in domestic consumption, exports of petroleum products last month decreased by 29% compared to June 2019.

As a result, China's domestic oil demand has fully recovered. In January-June, the volume of primary oil refining in the country amounted to 319.09 million tons (12.8 million barrels per day) – an increase of 0.6% compared to the same period in 2019.

⁷ Tomberg I. R. Kazakhstan-China: modernization cooperation in energy // Novoe Vostochnoe Obozrenie. 02 November 2011. URL: <http://journal-neo.com/node/10066>; (accessed 20.03.2021)

Chinese companies took advantage of the collapse in oil prices and significantly increased their purchases of oil abroad. According to the General Customs Administration of the People's Republic of China, oil imports in June 2020 increased by 34.4% year-on-year, reaching 53.18 million tons (12.9 million barrels per day). In June, the record set in May, when oil supplies to China amounted to 11.34 million barrels per day, was updated.

Imports in June could have been even higher, but not all tankers could unload last month as Chinese ports failed to cope with increased sea shipments.

Despite the decline in imports in the first quarter – in March, supplies fell to 9.72 million barrels per day, the lowest figure this year – in the second quarter, demand for imported oil in China recovered and exceeded the indicators before the COVID-19. In the first half of 2020, the total volume of oil supplies reached 268.75 million tons (10.8 million barrels per day) – 9.9% more than in January-June last year.

China's dependence on energy imports – primary oil – has grown significantly in recent years, raising concerns in Beijing. The Chinese authorities provide comprehensive support to domestic companies to increase their oil production, despite the high cost of production. Currently, the oil produced in China is significantly more expensive than imported oil.

According to the Chinese news agency Caixin, in 2019, production in China increased by 0.8%, exceeding 190 million tons. The increase occurred for the first time since 2015 when production reached a record level of 214.55 million tons. According to the plans of the National Energy Administration of the People's Republic of China, oil production in the country will grow this year by at least 1% year-on-year. To achieve this goal, Beijing is directing the efforts of Chinese oil and gas companies to develop oil and gas fields in the Bohai Bay, the Erdos Basin, and in the Xinjiang Uygur Autonomous Region – the westernmost region of China.

In January-June 2020, the country produced 97.15 million tons (3.9 million barrels per day) – 1.7% more than in the same period last year.

In the first half of the year, the total supply of oil, imports, and domestic production exceeded the volume of processing of all Chinese refineries by an average of 1.9 million barrels per day. All the excess oil went to storage facilities that public and private companies set up. Western experts periodically report on the imminent complete filling of existing storage facilities, but they underestimate the capacity and ability of China to build new oil storage facilities. However, Chinese companies are buying more and more oil, but there is no shortage of capacity for storing raw materials⁸.

China's dependence on energy imports is constantly growing and in January-June this year exceeded 84%. Despite the increase in the share of REI in China's energy balance, the critical dependence on energy imports remains. In this regard, Beijing seeks to diversify the sources of oil supplies and ensure their maximum reliability.

Most of the oil is supplied to China from the Persian Gulf countries. Beijing is increasing its presence in the region-primarily in Iraq, the third-largest oil supplier to China after Saudi Arabia and Russia. In the first half of the year, Iraqi oil supplies to China exceeded 1.3 million barrels per day. Iraq's Basra grade is one of six Middle Eastern oil grades that are traded on the INE. Transactions with oil supply contracts are carried out on the exchange. Oil prices are formed, and calculations are made only in yuan, the national currency issued by the People's Bank of China.

Despite the US sanctions, China continues economic cooperation with the Islamic Republic of Iran and is ready to increase oil imports from this country. Beijing and Tehran signed a 25-year agreement within the geopolitical project One Belt, One Road. Under the agreement, China pledged to invest \$280 billion in the Islamic Republic's oil and gas and petrochemical industries over the first five years. In exchange, China received a priority right to participate in auctions to sell oil and gas assets. Chinese companies will be able to purchase any oil and gas products (oil, natural gas, and petroleum products) with a guaranteed discount of 12 % from the average price for six months for reference grades of oil and the corresponding types of petroleum products. Moreover, to compensate for the risks, an additional discount of 8% and a

⁸ National Bureau of Statistics of China-URL: www.stats.gov.cn; (accessed 19.03.2021)

deferred payment for up to two years can be provided. Payments for Iranian oil can be made in yuan and soft currencies, including Russian rubles.

China continues to buy oil from Venezuela, which is also under US sanctions. Deliveries are carried out through third countries with transshipment at sea, so there is no data on importing Venezuelan oil in official statistics.

Due to the aggravation of relations between Beijing and Washington, shipments by sea are under threat and may be blocked by the United States.

In April and May, Chinese companies purchased large volumes of Russian Urals crude from Baltic ports. As a result, the price of Urals rose and traded at a premium to the benchmark Brent grade. In the first half of the year, the average volume of Russian oil supplies to China exceeded 1.7 million barrels per day.

So, the most reliable supplier of oil to China is Russia. Russian oil is delivered by sea and via the Eastern Siberia – Pacific Ocean and Atasu – Alashankou pipelines via Kazakhstan. The throughput capacity of the pipelines to China allows for deliveries of 800 thousand barrels per day. According to preliminary data, in June, Russia overtook Saudi Arabia and again became the largest oil exporter to China. Last month, Saudi Arabia raised its oil prices for Asian consumers and cut supplies to China by more than 1 million barrels per day.

The Chinese authorities have a flexible policy towards oil companies, combining liberal methods and price control. Beijing's main task for oil refineries is to provide the domestic market with the necessary petroleum products fully. Oil refineries must also comply with environmental requirements—they strive to reduce emissions of harmful substances. At the same time, it is crucial to ensure production growth, especially during the economic recovery after the COVID-19⁹.

⁹ Keynes D. M. General theory of Employment, Interest and money: Selected Works / John Maynard Keynes; [trans. E. V. Vinogradova et al.]. Moscow: Eksmo, 2019-957 p.

The Chinese government is cautiously liberalizing the oil refining industry. Non-state refineries have significantly increased their quotas for oil imports, but few of them have been granted export permits, despite the threat of overproduction and the emergence of an excess supply of petroleum products on the domestic market. Beijing will not completely give up control over the prices of petroleum products, but market liberalization will continue, and the role of independent refineries in the domestic market of petroleum products in China will grow.

So, we note that the exchange trading of oil supply futures on the INE (Shanghai International Energy Exchange) will continue to develop. During the oil crisis caused by the COVID-19, trading volumes on INE increased significantly due to Beijing's liberal policies. Independent refineries increasingly acquire the raw materials they need on the Shanghai Stock Exchange, where trading is conducted in the Chinese national currency.

Last year, China consolidated its leadership in the global energy market. The largest exporters to this country are Saudi Arabia and Russia, which in 2020 delivered 84.92 million tons and 83.57 million tons of raw materials to China, respectively.

Identification of problems of China and Kazakhstan in the cooperation of the oil and gas market

The main problem is the high share of Chinese companies in oil and gas production, the growing competition between Russia and China for the energy resources of Central Asia, and most importantly – for determining the price policy.

China already has a stake in almost all other similar projects, controlling about 24% of the oil produced in Kazakhstan.

As for offshore projects (for big oil and significant gas), there are almost no Chinese assets in them. China Petrochemical Corporation (Sinopec) is still a formal participant in the exploration project Zhambay South and Southern Zaburunye, in which it owns 50% of the shares.

In other segments of the oil and gas industry of the Republic of Kazakhstan, the assets of Chinese companies are the project of reconstruction and modernization of the

Shymkent oil refinery, in which the Chinese National Oil and Gas Corporation (CNPC) owns 50% of the assets (the other 50% belongs to NC KazMunayGas; the same corporation has 94.47% of the assets of three Zhanazhol gas processing plants; the rest of them belongs to NC KazMunayGas); — the presence in the Kazakhstan market of petroleum products is the company Sinooil, which controls from 15 to 20% of this market¹⁰.

Second, China's asset acquisition policy is influenced by conflicting and often mutually exclusive factors. On the one hand, Beijing's desire to buy back as many assets as possible is supported by Astana. Moreover, Kazakhstan is essentially lobbying China to buy assets sold by foreign companies. It should be noted that according to the laws of the Republic of Kazakhstan, KazMunayGas has a priority right to buy out oil and gas assets of foreign companies, and therefore the procedure for their transfer to China cannot do without the participation of Kazakhstan. It indicates the close coordination of actions between the Republic of Kazakhstan and the People's Republic of China.

On the other hand, there is reason to believe that Kazakhstan is still trying to restrain China's activity somewhat. In the vast majority of cases, it either buys back some of the assets from Chinese companies or trades them in exchange for some preferences. Besides, Kazakhstan seeks to retain a controlling stake in the strategic mining companies KazMunaiGas Exploration Production JSC and Mangistaumunaigas JSC; in the former, China lost only 11%, and in the latter — 48%. Simultaneously, such facilities as the Pavlodar Petrochemical Plant and the Helios gas station network did not even partially come under Chinese control (although the PRC seems to have wanted and could have bought entirely up all the assets mentioned earlier).

Third, it is most likely that China is likely to continue to increase its efforts to acquire assets in Kazakhstan in the short-term (up to three years) and medium-term (up to 10 years). The main objects of Chinese interests, of course, will primarily be the assets of foreign companies in onshore

production projects, including the development of such large fields as Tengiz and Karachaganak. At the same time, China, relying on the support of Kazakhstan, will continue to try to acquire assets on the Caspian Sea shelf.

China's interest in the processing segment, especially in gas processing, cannot be discounted. An increase in the level of China's presence in any segment of the Kazakh oil and gas industry will inevitably entail the acquisition of new assets in production projects.

However, it is not at all a fact that the PRC will achieve all the goals set for itself, especially since they are incredibly ambitious and are associated with gaining control over a large or at least a significant part of the strategic assets of the oil and gas industry of Kazakhstan. Over time, it will become increasingly difficult for China to acquire onshore production projects (except for the North Caspian project).

It is likely that if China continues to actively seek to penetrate the oil and gas industry in Kazakhstan, it will be able to achieve some success, but only in acquiring the assets of small onshore production projects, which, of course, will not lead to a significant increase in Chinese control over this industry.

Besides likely, strategically essential assets in the projects for the development of the Tengiz and Karachaganak oil and gas fields will not be available to the PRC in the short-term/medium-term perspective, as Western companies will most likely not sell them.

Theoretically, over time, Beijing will turn a significant part of the export flows of Tengiz and Karachaganak oil from the European to the Chinese direction. As a result, the problem of filling the Tengiz-Novorossiysk oil pipeline will arise (which is not in the interests of Kazakhstan and Russia), and the supply of Kazakh oil to Europe will be drastically reduced.

Given the above, it can be assumed that in short/medium term, Western companies can sell assets in the Tengiz and Karachaganak projects to Chinese companies only in case of emergency circumstances, which can include a deep financial and economic crisis in the EU and a drastic reduction in Europe's oil needs. Nevertheless, in the long-term (up to 20 years), when the Tengiz and Karachaganak fields are likely to

¹⁰ Karl Gert « Where China goes, the world goes. How Chinese Consumers are changing Everything» - United Press, 2018, 272 p.

reach the level of declining production, foreign companies can assign assets in these projects to China.

Considering the limited opportunities of the PRC to buy back assets in onshore production projects further, it can be assumed that China's oil and gas appetites will inevitably shift towards offshore ones. Its interests will be focused primarily on increasing its share in the North Caspian project, in the refining segment of the Kazakh oil and gas industry, and, accordingly, on buying out the objects of the retail network of oil products trade¹¹.

It is most likely that Chinese companies will try to acquire shares in the assets of large oil refineries in Kazakhstan. We are talking about the Atyrau Oil Refinery (processing about 4.7 million tons of oil per year) and the Pavlodar Oil Refinery (processing about 5.2 million tons of oil per year). Recall that KNPC already has a 50% stake in the Shymkent plant.

In the Kazakh market of petroleum products, Chinese efforts will aim to establish control over as large a segment of it as possible and at buying out infrastructure facilities: gas stations, warehouses, storage facilities, etc.

Kazakhstan still needs to fully increase the volume of oil production for export to China. Against this background, the gas segment of the industry, despite a slight increase in the production of blue fuel by Chinese companies, is still of secondary importance: Beijing is more interested in Kazakhstan's gas transit from Turkmenistan.

Nevertheless, the PRC will have to solve the task of radically revising the entire previous strategy of penetration into the oil and gas industry of the Republic of Kazakhstan, which until now was based on the large-scale acquisition of assets in onshore production projects from foreign and Kazakh companies. On the one hand, there are oil and gas fields under Chinese control (all of them are located on land) we have already reached the stage of decreasing or maximum possible oil production. On the other hand, the prospects for possible participation of Chinese companies in other mining projects

(both onshore and offshore in the Caspian Sea) are still extremely vague.

First, since the beginning of its project and investment activities in Kazakhstan's oil and gas industry, China, in parallel with the purchase of assets, has consistently increased the volume of hydrocarbon production, mainly oil. If KNPC owned only 1.6 million tons of oil produced in Kazakhstan (or about 6% of the total volume of Kazakhstan's oil production), then later it was about 10.65 million tons (or 16.8% of the total volume); at the end of 2014, this figure was about 20 million tons (about 25%).

In turn, Chinese companies (mainly JSC KNNK — Aktobemunaigas) are involved in industrial gas production. Instead, in its capture and utilization (Kazakh gas is mainly associated with gas extracted in oil production), their share in Kazakhstan's gas production remains small.

The increase in gas production is also insignificant. Such a slow increase in gas production is mainly due to the technical difficulties of transporting it from the fields scattered over the vast territory of Kazakhstan.

Secondly, China's policy of increasing the volume of production of Kazakh hydrocarbons is hindered by several unfavorable factors and the minimal possibility of acquiring new assets in production projects. The ability of Chinese companies to increase oil production in already acquired fields within the framework of existing projects is almost exhausted, and the possibility of access of Chinese companies to new large production projects remains in question.

Despite the existing potential for increasing gas production, Chinese companies still show the most significant interest in Kazakh oil: a large-scale increase in gas production is economically unprofitable. They are engaged in gas capture/disposal only because it is connected with technological necessity and political and environmental requirements¹².

¹¹ Deng Xiaoping «The main issues of modern China» - Political Literature Publishing House, 2018. 231p.

¹² Anchishkin, A. I. Nauka-tehnika-ekonomika. Moscow: Ekonomika, 2019. – p. 100.

Third, in the short-term (up to three years) and medium-term (up to 10 years) perspective, China will undoubtedly strive to increase the volume of production of Kazakh hydrocarbons. Moreover, the interest in gas production is likely to grow.

To increase the volume of oil and gas production, Chinese companies will inevitably face an objective need to acquire new assets in large projects onshore and offshore in the Caspian Sea. China will get a similar opportunity if it enters the projects to develop the Tengiz and Karachaganak fields (where about 55% of Kazakhstan's oil and up to 90% of gas are produced)/or succeeds.

The North Caspian project (which is expected to produce big oil and significant gas). However, in the short and medium-term, neither of them will probably succeed. Western companies (and Kazakhstan itself) are unlikely to want to allow China's participation in the development of the Tengiz and Karachaganak fields, which are pretty significant from a commercial and strategic point of view.

It is unlikely that it is possible to enter the stage of hydrocarbon production within the framework of the North Caspian project, in which China is already present: the technological obstacles available for this purpose will not be overcome (otherwise, Soposo Phillips would not sell its assets in the project). Besides, the sharp decline in world oil prices in 2014 makes oil and gas production in the framework of this project unprofitable, which dramatically reduces its investment attractiveness. In this regard, Chinese companies' significant increase in oil production is most likely not expected in the short and medium term.

Chinese companies will likely be able to slightly increase the production volume (utilization) of Kazakh gas. Nevertheless, it is safe to assume that the extracted gas will not be exported to China but will be consumed by the producing companies themselves and sold to some Kazakh settlements near the production sites.

In the long-term (up to 20 years) perspective, the volume of oil and gas produced by China in the Republic of Kazakhstan will directly depend, on the one hand, on the participation/non — participation of Chinese companies in the projects for the

development of the Tengiz and Karachaganak fields (although by this time they are likely to enter the stage of declining production), and on the other on the success/failure of the North Caspian project (as well as the project for the development of the Darkhan field, which China is likely to reserve for the future).

The project and investment activities of Chinese companies for the processing of hydrocarbons in Kazakhstan are pretty noticeable, especially against the background of non-participation in such projects of other foreign countries. Nevertheless, in general, the scale of Chinese activity in the processing segment of the Kazakh oil and gas industry is still tiny. Without showing good interest in introducing new oil refining capacities in Kazakhstan, Chinese companies are paying more and more attention to increasing the volume of gas processing. It is primarily due to the objective need to recycle the gas released in oil production and long-term plans for its export.

First, when the Chinese penetration into the oil and gas industry of the Republic of Kazakhstan began, the scale of China's project and investment activities for the processing of hydrocarbons was an order of magnitude higher than in the field of their production¹³.

Currently, the PRC is involved in three reasonably large projects for the processing of hydrocarbons; let us turn to the chronology of its participation in them: CNPC carried out the modernization of the first (built-in Soviet times), as well as the construction of the second and first technological line of the third Zhanazholsky gas processing plant, as a result of which the gas processing capacity was increased from 0.8 to 4.5 billion cubic meters per year. At present, the construction of the second one has been completed, and preparations are underway to construct the third technological line; this should lead to an increase in the total capacity of the three gas processing plants to 8 billion cubic meters. CNPC participates in the refining of oil (4.5 million tons annually) at the Shymkent refinery; it owns 50% of the assets of this enterprise; Sinopec has started the construction of an aromatic hydrocarbon complex at the Atyrau

¹³ Belov N. I. On the system of measures of state support for exports in Switzerland at the present stage. // BIKI. 2017. No. 2. pp. 34-39

refinery. It is expected that this complex will annually produce 133 thousand tons of benzene and 496 thousand tons of paraxylene.

Nevertheless, the number of financial resources invested by China in the enterprises mentioned above is still small against the background of investments in production projects. It amounts to approximately \$ 2.4 billion, including \$ 1.4 billion of a loan to construct an aromatic hydrocarbon complex at the Atyrau refinery and about \$ 1 billion. Invest in the modernization/construction of the Zhanazholsky Gas Processing Plant (\$895 million) and the modernization of the Shymkent Oil Refinery (from \$ 20 to \$ 25 million).

At present, China's position in the Kazakh oil and gas industry processing segment can be described as relatively weak. In the total volume of Kazakhstan's oil refining, the Chinese share is just over 14%, and gas-just under 10%. The remaining share in the processing of Kazakh hydrocarbons belongs to NC KazMunayGas. Also, approximately 1/5 of the blue fuel produced in Kazakhstan is processed by the Russian Orenburg gas Processing Plant.

Secondly, the Chinese policy in the processing segment of the Kazakh oil and gas industry is not very active. Chinese companies are not yet ready to build new extensive processing facilities, and Kazakhstan does not show much interest. Thus, the implementation of the construction project of the same Zhanazholsky gas processing plant, as it seems, was dictated not so much by commercial considerations as by the technological need to dispose of a massive number of gaseous products released in the process of oil production and strict environmental requirements.

There are no other Chinese projects of this scale in Kazakhstan. As for the plans for constructing an oil refinery on the territory of Kazakhstan bordering the PRC, they have not yet begun to be implemented.

Third, in the short-term (up to three years) and medium-term (up to 10 years) perspective, the scale of oil production (and, accordingly, it is processing) by Chinese companies in Kazakhstan is likely not to increase significantly. Moreover, after the Ministry of Oil and Gas of the Republic of Kazakhstan decided on large-scale processing of Kazakh oil (about 1.5 million tons annually) at the plants in XUAR,

according to the tolling scheme, the construction of new oil refining capacities in Kazakhstan by Chinese companies seems extremely unlikely.

At the same time, Chinese companies will increase the volume of gas processing in the short term. After the commissioning of the second and third technological lines of the third Zhanazholsky GPP, the total capacity of these three plants will increase from the current 4.5 to 8 billion cubic meters per year. Additional volumes of gas from the gas caps of the Zhanazhol field will become the resource base for the ZHGPP.

However, at least in the short term, the gas produced by Chinese companies will be sold on the Kazakh market (just as it is now). It is theoretically possible to supply China with small volumes of gas (estimated from 4 to 5 billion cubic meters) m per year) on the Beineu-Bozoi-Akbulak-Shymkent gas pipeline, which is to be put into operation. Besides, it is possible to connect it to the Turkmenistan-China gas pipeline.

So, we cannot completely exclude the possibility that China is hatching plans to control all existing processing facilities in Kazakhstan: the Atyrau oil refinery and the Pavlodar petrochemical plants (not counting the Shymkent oil refinery already under its control). It seems that it is for this reason that China has started the construction of a complex of aromatic hydrocarbons at the Atyrau refinery. The fact is that aromatic hydrocarbons can be used to improve the quality of petroleum products to the highest European standards (in Kazakhstan, they are not used for other purposes). Thus, Chinese companies will be able to get an excellent chance to dramatically strengthen their positions in the processing segment of the Kazakh oil and gas industry.

Scenario of the development strategy of Kazakhstan and China in the field of energy within the framework of the One Belt One Road Initiative

In his keynote speech dedicated to the Silk Road Economic Belt, Xi Jinping noted the need to apply new cooperation models, jointly form the economic belt of the Great Silk Road. They were offered five concrete measures to ensure movement in this direction.

First, it is a constant exchange of views on economic development strategies to develop measures and programs for economic integration. The main task is to open the green light at the political and legal levels to merge regional economies.

Secondly, the construction of unified transport infrastructure from the Pacific Ocean to the Baltic Sea. China is ready to participate in creating transnational transport infrastructure to form a transport network covering East, West, and South Asia.

Third, the strengthening of trade relations with the elimination of various barriers increases the speed of delivery of goods and creates an appropriate logistics system.

Fourth, the strengthening of foreign exchange flows. Xi Jinping recalled that China is currently trading with many countries (including Russia), paying not in dollars but the national currency. It was proposed to use this practice with Kazakhstan, which will reduce monetary costs, protect the financial system from risks, and increase the economy's international competitiveness.

Fifth, the strengthening of humanitarian and cultural exchange. Since the development of relations requires personnel, China has offered about 25,000 educational grants for students and teachers from Central Asia. Most of these grants, of course, were allocated to Kazakhstan.

From the economic point of view, the infrastructure component of the One Belt, One Road program is represented by several routes from the western regions of the People's Republic of China to the key centers of economic activity in Europe and South Asia with a length of 8.5 to 11 thousand km¹⁴.

It is assumed that the Northern route will pass through the territory of Kazakhstan and the Trans-Siberian Railway. The sea routes involve

- the Kazakh port of Aktau and the ports of the Caspian Sea (Makhachkala, Baku),
- providing access to the Caucasus region, Turkey, and
- the Black Sea basin.

¹⁴ Bukhalkov M. I. Planning at the enterprise: Textbook. / 2nd ed., Moscow: INFRA-M, 2018. 473 p.

The southern routes pass through Kyrgyzstan, Uzbekistan, Turkmenistan, and Iran, providing access to the Indian Ocean in the Persian Gulf region.

One Belt – One Road lays the foundation for the accelerated development of the western regions of China by transferring production there from the coastal regions and the development of related industries and services (logistics centers, terminals) both in the PRC and in the Central Asian states.

One Belt One Road is not just a transit and transport project; it is a comprehensive plan for the economic development of several states, including numerous projects for the development of infrastructure, industry, trade, and services, which will ensure a stable and safe environment for the development of not only the western regions of China but also the entire center of Eurasia, fully unlocking its potential figure 2.

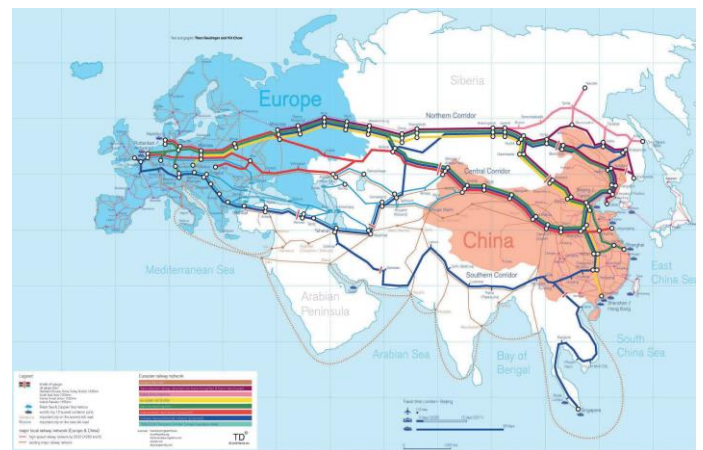


Figure 2 - Routes of the One Belt One Road Initiative¹⁵

Kazakhstan has included the One Belt – One Road strategy in its economic development program. In particular, the new economic policy Nurlı Zhol, announced by the President of the Republic of Kazakhstan Nursultan Nazarbayev in November 2014, is primarily synchronized and is based on developing the Silk Road Economic Belt project. As Nursultan Nazarbayev noted during his state visit to Beijing, since

¹⁵ Dodonov V. Yu. 2018. Promising forms of financial cooperation within the framework of the Silk Road Economic Belt. - The Belt and Road Initiative: status and prospects. Almaty: Research Institute of International and Regional Cooperation of the Kazakh-German University.

December 2014, we have been working on expanding the horizons of cooperation in the field of industrialization and investment. In particular, 48 investment projects worth more than \$30 billion were selected. A Memorandum on cooperation in industrialization and investment was signed between Kazakhstan and China. Moreover, Kazakhstan has declared its readiness to invest about \$4 billion in infrastructure development on its territory.

The establishment and effective functioning of such an international corridor require the improvement of the regulatory framework. In particular, the domestic legislation of Kazakhstan has already begun work on amendments and additions to the Civil, Budget, Tax Codes and Laws On Transport in Kazakhstan, On Natural Monopolies and Regulated Markets, On Railway Transport, On Highways, On Merchant Shipping, On-Road Transport, On Inland Water Transport, On the Use of Kazakhstan's Airspace and Aviation Activities and others, which are contained in the Law On Amendments and Additions to certain Legislative Acts of the Republic of Kazakhstan on the development of road transport infrastructure, transport logistics, and air transportation.

Several advantages of this strategy are noted, among which one can distinguish:

- a) the advantage of the development concept. It is implied that, unlike Russian and American geopolitical projects, the Chinese one is open to a large number of countries and brings significant benefits;
- b) geographical advantage, since Kazakhstan itself, due to its proximity, needs the development of transport and logistics infrastructure;
- c) the advantage of traditions, since the Silk Road, due to historical analogies, is perceived positively by Kazakhstanis, despite the Chinese phobia encountered in the media;
- e) assistance from the Transcaucasian countries, which hope that China's strategy in Central Asia can be implemented in the Caucasus. First of all, there are expectations for the sea branch of the Silk Road Economic Belt through the port of Aktau, which already has a good infrastructure, as well as active construction of branches to expand opportunities¹⁶.

The next point of the sea branch in Baku, from where the route should go to Tbilisi, and then to the Turkish Kars. There is a hitch in this direction.

To a large extent, this was influenced by the war of August 2008. Besides, the Georgian press expresses dissatisfaction with the construction of prominent representatives of the elite. There is an opinion that the new road is primarily beneficial to Azerbaijan, as it will allow it to create a promising route without the participation of Armenia. However, at the same time, Georgia provided its territory and took a loan for a considerable amount.

As the final creation of this path is very close, the Caucasus countries are a serious game to be included in the orbit of Chinese economic opportunities and push their political interests, which in the Caucasus has traditionally been contradictory.

e) financial advantage, through which China will actively participate in projects, investing, thereby securing their share of the ownership. Here, it is essential not even the availability of finance itself but creating a situation where Kazakhstan will depend on new and new funding flows.

To date, a road map for expanding cooperation between Kazakhstan and China in almost all areas of the economy has been formed, and a joint working group on linking the SREB and Nurly Zhol has been established.

Besides, there is active work on the integration of the One Belt One Road and the Eurasian Economic Union, which started after the signing of the Joint Statement of May 8, 2015, on cooperation on the integration of the construction of the Eurasian Economic Union (EAEU) and the economic belt of the Silk Road project (SREB).

According to this document, the most priority areas of interfacing are:

- expansion of trade and investment cooperation;
- implementation of major joint investment projects;

¹⁶ Ensuring the national interests of Kazakhstan in cooperation with China in the energy sector

URL:<http://burneft.com/archive/issues/2019-10/02/>; (accessed 07.03.2021)

- joint creation of industrial parks, cross-border economic cooperation zones;
- strengthening connectivity in logistics, transport infrastructure, and intermodal transport;
- consideration of the long-term goal of moving towards a free trade area between the EAEU and China;
- assistance in increasing settlements in national currencies in the areas of trade, direct investment, and lending, creation of currency swaps, deepening cooperation in the field of export credit, insurance, project, and trade finance, bank cards;
- strengthening cooperation through various financial institutions, including such mechanisms as the Silk Road Fund, the Asian Infrastructure Investment Bank, and the SCO Interbank Association.

Thus, the integration of the EAEU and the Silk Road Economic Belt should result in trade facilitation and better protection of mutual investments between the EAEU member states and the People's Republic of China. These include facilitating trade procedures for moving goods across borders, removing regulatory barriers, and cooperating in high-tech sectors such as information technology, medical and educational services, e-commerce, and energy efficiency. However, the legal framework for these areas has yet to be developed.

One Belt One Road Initiative - as a factor of Development of Kazakhstan and China

The infrastructure projects of the One Belt, One Road program imply an active investment policy. Moreover, Kazakhstan manages to attract Chinese investment in its economy actively. Thus, accumulated foreign direct investment (FDI) from China to the countries of the Eurasian Union in 2009-2013 increased from \$11.02 billion to \$24.67 billion. At the same time, 91.5% of the total amount (\$22.57 billion) falls on Kazakhstan.

Also, within the One Belt, One Road framework, China expressed its readiness to invest in the creation of a wide variety of industries. The enumeration, in this case, does not make sense. We only note that the range is extensive: from the electric power industry to the processing of oilseeds, from the production of oil and gas equipment to the production of cars.

From September 2013 to December 2015, the two countries signed investment agreements worth a whopping \$54 billion.

Kazakhstan pays special attention to the plans for China's participation in the formation of the updated Kazakh transport infrastructure, which, in particular, includes plans for the free construction of the Great Almaty Ring Road by China, the 12 roads to the border with China to the Alashankou station and a large-scale project to optimize public transport in Astana.

Over the past three years, several major Kazakh-Chinese projects have been launched. Among them are the new Altynkol railway crossing – Khorgos, Sarybulak – Zimunai, and Bozoy – Shymkent gas pipelines, Aktau bitumen plant for integrated coal processing to produce liquid fuel, production of potash fertilizers. Also, the Chinese corporation CNPC became one of the shareholders of the Kashagan project.

There are some significant investment projects implemented jointly with China. Construction of a plant for the production of primary aluminum. Project objective: construction of a plant for the production of primary aluminum (Pavlodar).

Participants: JSC Kazakhstan Electrolysis Plant, Eximbank (China), JSC Development Bank of Kazakhstan. Cost: \$1 billion¹⁷.

Construction of the Moynak hydroelectric power station. Project objective: construction of a hydroelectric power station on the Charyn River with an installed capacity of 300 MW for supply to the energy system of the southern zone of the republic. Participants: JSC Development Bank of Kazakhstan, State Development Bank of China, JSC Moynak HPP. Cost: \$361 million.

Current status: a contract has been signed with the China International Water and Energy Corporation to construct a turnkey facility.

¹⁷ Indergand R, Kalambaden P. Schweizer Industrie dank Strukturwandel an internationaler Spitze / / Die Volkswirtschaft. 2019, No. 7/8-p. 6

Reconstruction and modernization of the Atyrau refinery (construction of a complex for the production of aromatic hydrocarbons). Project objective: the project provides for the production of 496 thousand tons of paraxylene and 133.0 thousand tons of benzene to provide domestic raw materials for the country's petrochemical industry. Participants: JSC NC KazMunayGas, LLP Atyrau Refinery, JSC Development Bank of Kazakhstan, Eximbank (China). Cost: \$1,110 million.

Atyrau Oil Refinery LLP and the Chinese company Sinopec Engineering signed a contract to construct a turnkey complex. Reconstruction and modernization of the Shymkent Oil Refinery. Project objective: to restore the plant's design capacity to 6 million tons per year, increase the depth of oil refining to 90%, and improve the quality of petroleum products to the Euro standard-4. Participants: JSC Shymkent Oil Refinery (shareholders: JSC NC KazMunayGas, CNPC (China). Cost: \$1,616 million.

Construction of a gas chemical complex. Project objective: construction of an integrated gas chemical complex with a capacity of 800 thousand tons of polypropylene and 450 thousand tons of polyethylene per year. Participants: United Chemical Company LLP, Sat & Company JSC, Development Bank of Kazakhstan JSC, Eximbank (China), LG Chem (South Korea). Cost: \$6.3 billion (of which China provided a \$1.3 billion loan for implementing the First Phase).

Production of road bitumen. Project objective: construction of a heavy oil processing plant with a capacity of 500 thousand tons of bitumen, 242 thousand tons of gasoline-diesel fractions, and 234 thousand tons of vacuum gas oil. Participants: Kazakhstan Petrochemical Industries JSC (KPI JSC), CITIC Group (China). Cost: \$290 million.

Construction of the Beineu-Bozoi-Akbulak main gas pipeline project aims to meet the gas demand in the southern regions of the republic, eliminate dependence on imported gas and ensure the country's energy security. Participants: JSC KazTransGas, TAPLINE (China). Cost: \$2,319 million.

In general, there are currently about 500 active legal entities with Chinese participation in Kazakhstan.

For example, in 2014-2015, bilateral contracts totaling more than \$70 billion were signed. More than 250

intergovernmental and interdepartmental agreements have been concluded in various fields. Besides, in November 2015, it became known that China had removed several severe barriers to the import of Kazakh agricultural products, which the Kazakh side had been seeking for a long time. The simplified process of obtaining business visas is being launched.

So, China and Kazakhstan decided to hold a series of tourist events in 2017. It is also possible to note the Memorandum on joint implementation of the meat cluster in the East Kazakhstan region. Within the cluster, it is planned to build a meat processing complex to produce lamb and lamb with a total annual capacity of 17 thousand tons.

It is planned to create a feedlot and a network of farms for distilling livestock. According to the document, the total investment from the Chinese side will amount to more than \$11 million. However, there are restrictions on the supply of meat and meat products to China. In this regard, at the moment, the Kazakh side is working to remove them since the Kazakh market alone may not be enough for the complete operation of the cluster. Besides, its location in the neighboring region of Kazakhstan with China and the formed system of transport infrastructure will allow delivering meat to China at a cost-effective price.

Thus, the One Belt, One Road program has become a robust response of the fifth generation of Chinese leaders to creating the Eurasian Economic Union. Moreover, the positive aspects of the Eurasian Economic Union for China outweigh its negative aspects related to the increase in duties. Such a positive perception of the EEU by China plays a positive role for Kazakhstan, as an excessive competition of the great powers directly located in the region is fraught with risks of destabilization if one of the parties begins to win or lose.

III. CONCLUSION

Although the global energy trends are diverse and cannot be called unambiguous, there are still several key points that are of particular importance for Kazakhstan in the light of the issues that will be discussed in more detail in the future, namely:

There is a high level of competition in the field of investment in extractive projects around the world. Major international oil and gas companies are more than ever faced with the challenges of increasing profits for shareholders, ensuring the most rational and efficient capital management, and reporting on the implementation of climate change policies in the balance sheets. At the same time, the focus is on the diversification of energy asset portfolios (RES; carbon capture, use, and storage (CSIB); production and distribution of electricity and natural gas), and the focus is not so much on building up reserves as on improving economic efficiency. All of these diversification initiatives and compliance measures are expected to result in limited or reduced capital investment-especially in new («from scratch») projects. In the current situation, Kazakhstan needs to consistently follow a policy that promotes favorable and attractive conditions for investment in the development of new projects by MNCs.

As MNCs focus on improving economic efficiency rather than increasing inventory, they are increasingly partnering with large technology firms to introduce high-performance innovations to reduce industry costs and increase productivity. It is significant for Kazakh companies, including KMG, to keep up with these trends to ensure an increase in production volumes in existing fields and, above all, to slow down the decline in old sites. To some extent, Kazakhstan can use the partnership with MNCs in the development of the «big three» (and other) fields in order to introduce and develop such technologies (including for the extraction of unconventional reserves).

In many countries, the formation of prices for hydrocarbons and electricity for end-users is a politically sensitive issue, and the transfer of rising costs to them is problematic. In emerging economies, political leaders need to pay serious attention to addressing the problematic issues of affordability. In particular, for Kazakhstan, these problems are now of particular relevance since the prices earned by mining companies in the country are currently not high enough to stimulate the supply of oil to refineries or natural gas to the domestic market. Besides, end-user prices are also not high enough to drive efficiency gains in energy processing, transportation, and consumption. Policies should replace current administrative measures designed to direct the

available supply volumes to meet the demand in the domestic market of Kazakhstan to a greater extent.

The development of the SREB will take place in a bilateral and multilateral format, in which the SCO plays a unique role.

Chinese officials and experts emphasize that the program of economic integration within the framework of the Eurasian Union coincides with the program of the SCO on the entire spectrum of issues-from expanding trade and facilitating investment to plans to create an integration grouping.

The main problem is related to the lack of a clear answer to the question of how China will behave when the share of Chinese companies in the oil and gas sector of Kazakhstan increases to a critical level and the aggravation of the socio-political situation in the country with the beginning of the transit of power will require the participation of the PRC in ensuring the safety of pipelines. There are examples in history when the dominance of foreign companies in the leading budget-forming sector of the country's economy and infrastructure turned into a severe threat to national security.

Finally, one of today's most pressing problems is the search for ways of effective integration in the triangle SREB – EAEU – Nuryly Zhol.

Unfortunately, the progress of this process is challenging, although the areas of cooperation and prospects are pretty obvious. The interests of the SREB, the EAEU, and Kazakhstan are met by:

- construction of new and modernization of old roads and railways on the Russian territory, on the territory of Kazakhstan, and on the territories of other states that are members of the EAEU;
- investment and banking cooperation and increasing the volume of mutual trade in national currencies with the possible prospect of creating a new financial architecture in the Eurasian space;
- expansion of cooperation in the oil and gas sector, including through the construction of joint ventures and the expansion of the participation of Chinese companies in the exploration

and production of hydrocarbons in the fields of the Russian Federation and Kazakhstan;

- cooperation in the agricultural sector, including the creation of joint ventures in the agro-industrial complex;
- primary water and environmental projects, the need for which is felt both in China and in Russia and the Central Asian region;
- joint projects related to ensuring food security.

Summing up, it can be stated that the energy cooperation between Kazakhstan and China is strategic and is developing in many areas. The active development of various aspects of energy cooperation (oil and gas, electric power, nuclear, etc.) demonstrates the high interest of the parties in further deepening cooperation, which has significant benefits for both sides, in particular, China receives oil and gas on favorable terms, and Kazakhstan gets the opportunity to attract large amounts of Chinese capital for the development of its economy. Therefore, in the medium term, the current trend is likely to continue, namely, the increasingly dynamic development of bilateral cooperation in energy and the further consolidation of China in the Kazakh market as a key economic and energy partner.

One Belt – One Road has formed a new element of Chinese policy concerning Kazakhstan and the whole of Central Asia, reflected in the transfer of many Chinese industries to its territory. Accepting the current reality of closing borders for many goods, China has decided to move some production to Kazakhstan.

It is an action ahead of the curve, helping Beijing solve a whole range of issues, of which the most important is the creation of a new form of economic relations in a promising market. With the growth of China's power, there is a structural change in its foreign policy and foreign economic model. While China has only recently positioned itself as a developing country, during Foreign Minister Wang Yi's recent visit to Africa, China has already presented itself as a force that understands its responsibility for the global and regional system, both in security and in the economy. From this point of view, with the expansion of forms of cooperation with nearby regions, the placement of Chinese production facilities, there is a transition to a new level for regional Chinese policy.

In turn, in light of the instability of the world market, and especially oil and energy production/consumption, Kazakhstan needs to develop all forms of production and investment in infrastructure. Moreover, many Kazakh producers were unable to rise precisely because of competition with Chinese industrialists. The arrival of Chinese technologies and industries may give a chance to accelerate the industrialization of the country. Thus, the One Belt, One Road program has found its complete understanding in Nursultan.

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