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ANALYSE OF OIL SERVICES AND LOCAL MAINTENANCE REQUIREMENTS IN KAZAKHSTAN

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Abstract: Local content requirements can benefit Kazakhstan in the long term, ultimately having a positive impact on both the economy and the country's fuel and energy complex. In the field of oilfield services, Kazakhstan needs to focus on acquiring and expanding expertise and professional experience that will meet the new operational and technical conditions emerging in the country's extractive industry - especially on the shelf of the Caspian Sea. Kazakhstan may need a strategic approach to the development of a number of industries (such as metallurgy, construction, etc.) in order to support the service sector and provide oil and gas companies with more complex, high-tech goods and services, for which demand will be high. The state of oil services and local maintenance requirements in Kazakhstan, as well as provides a conclusion and recommendations on reduce the scope of protectionist policies are considered and analyzed in this article.

Key words: drilling industry, drilling rigs, oilfield services sector in Kazakhstan, requirements for local content in goods

Characteristics of the drilling industry in Kazakhstan

Drilling operations in Kazakhstan are carried out mainly onshore. The main share of this market belongs to only a few companies, both independent and part of the mining enterprises. As in other CIS countries, the national reporting system of Kazakhstan lacks an agreed and comprehensive system of statistics on the rig fleet as a whole for the country.

The leader of the drilling industry in Kazakhstan is "KazPetroDrilling" JSC (KPD) - a consortium of drilling enterprises, which includes a subsidiary of KMG - "KazMunayGas Burenie" LLP, as well as «Burgylau» LLP, "AstraStar" LLP and «MH INDUSTRY» LLP. According to the estimated figures, in 2013 the KPD drilling run was 538 thousand meters, or 21% of the total drilling work in Kazakhstan. In total, KPD employs 5,253 people (for comparison, in 2011 the company employed 3,585 people). The consortium's fleet includes 42 drilling rigs (in 2011 there were 34), the drilling capabilities of which range from 200 meters to 7,000 meters in depth, as well as 51 workover rigs. At the same time, the consortium's fleet of installations is growing. Plans for 2013 included two new units: one ordered in the United States and one assembled with Discovery Industrial Services at a plant in Ukraine. According to official information from KPD, the consortium also has experience working with external contractors, including Schlumberger, Baker Hughes, etc.

The second place in terms of drilling volume belongs to the Sino-Kazakh joint venture LLP «KAZAKHSTAN-CHINESE DRILLING COMPANY» "Great wall", which operates mainly with JSC «CNPC- Aktobemunaigas». KCDC «Great wall» LLP has a fleet of 27 drilling rigs, the drilling functionality of which ranges from 3000 to 7000 m. Most of them are from China, although, according to official figures, there are also three Russian-made units. Other major drilling contractors in Kazakhstan are «Sibu-Kyzylorda Engineering Drilling Company» LLP, SMART OIL drilling company (12 drilling rigs, 96 thousand meters were drilled in 2013), «Ontustik Munaygas» JSC (10 drilling rigs), «Vostok-neft» LLP, «NefTechService» LLP and the Chinese Sinopec. Activities in this area are carried out by a number of other enterprises, but individually their contribution is only a small share of the total drilling market in Kazakhstan (some of them are foreign operators)

Contractors in Kazakhstan mostly use equipment imported from abroad, as Kazakhstan does not have production of medium and heavy rigs. First of all, the rigs are imported from

Russia and China. Some drilling contractors (including KPD) also import some rigs from the US and Europe.

Although the circle of producers in Kazakhstan is limited, it is still growing. Thus, the Petropavlovsk Heavy Machine Building Plant in the North Kazakhstan region carries out the installation of self-propelled drilling rigs mounted on a car (truck), including models with a drilling depth of 2,000 m. Other assembly and construction companies in Kazakhstan install pumps and other types of drilling and service equipment.

In addition, Kazakhstan service companies operate repair equipment for the maintenance of the drilling rig fleet in Kazakhstan.

On the shelf, the main problem at a certain period was the lack of drilling rigs: as of the end of 2013, only 11 rigs were operating in the Caspian Sea (excluding the rigs used in Azerbaijan), while one was involved in the Caspian projects of Russia. Ten of them are managed by private contractors, including four semi-submersible, five jack-up and one barge ("Sunkar-257" drilling barge) operated by Parker Drilling. Kazakhstan is seeking to fill the rig shortage by installing its own floating offshore rigs and associated infrastructure to expand its fleet. These actions are aimed at helping oilfield service companies in Kazakhstan adopt the skills and technologies for providing oilfield services in the field of offshore exploration and production from experienced foreign firms, working side by side with them. However, with falling oil prices and significant cuts in exploration and production costs, the scale of offshore exploration is shrinking, and even local installations are not fully utilized.

The first Floating Drilling Barge assembled in Kazakhstan was the "Caspian Explorer" submersible drilling barge (FDB). The construction of the FDB was carried out in fulfillment of obligations assumed by a consortium of Korean companies (consisting of Korea National Petroleum Corporation (35%), SK Innovation (25%), LG International Corp. (10%), Hyundai Hysco Co. Ltd. (10%), Samsung C and T Corp. (5%), Daesung Industrial Co. Ltd (5%), Daewoo Shipbuilding and Marine Engineering (5%), and Aju Corporation (5%) under the Agreement of Principles signed in 2005 between JSC "NC KazMunayGas (KMG) and KC Kazakh B.V. ("KCK"), a company established by the aforementioned Korean consortium, as part of the development program for the Kazakh shelf of the Caspian Sea. Various modules, equipment and materials of FDB were manufactured and assembled abroad, and after delivery to Kazakhstan via the Volga-Don canal in 2011, the installation of FDB itself began at the shipyard of the Kazakh company "Ersay Caspian Contractor" LLP, which was successfully completed in June 2012. Since the date of its foundation on December 26, 2011 the owner of FDB is "KC Caspian Explorer" LLP (KCCE), which is a subsidiary of KCK in Kazakhstan

Initially, FDB was designed for drilling operations on the Zhambyl offshore structure in shallow water in the northern part of the Caspian Sea, and therefore it is capable of operating at a water depth of 2.5-5.5 m and drilling exploratory wells up to 6,000 m deep below the floor of the drilling. On April 27, 2012, FDB was transferred by KCCE to the trust management of «TenizBurgylau» LLP (currently KMG Drilling & Services LLP), and in 2013-2014 it drilled 2 exploration wells in the Zhambyl area (ZB-1 in 2013 and ZT-1 in 2014). It was originally envisaged that FDB would also be used on other offshore projects in the shallow waters of the Caspian Sea, and given its successful drilling campaigns for the Zhambyl project, this would be expected and feasible.

However, with the fall in oil prices and significant cuts in oil and gas costs, offshore exploration has been postponed indefinitely, and as a result, the new FDB is currently in cold storage at Ersai shipyard. "KMG Drilling & Services" LLP ceased to be by the FDB operator after the expiration of the fiduciary agreement on March 31, 2015, which was not renewed due to the lack of plans for the further use of FDB.

In 2012, a service subsidiary of KMG signed agreements for the installation of the first jack-up drilling rig built in Kazakhstan, designed for deep water drilling, on a turnkey basis, worth USD 242 million. Launched in April 2015, this rig will operate at depths ranging from 5m to 80m with an estimated depth of 6,000m below the seabed. It was installed at the Ersai shipyard in the

Kuryk settlement and at the Keppel-KazStroyService enterprise in Aktau. The work involved 1,000 people. This is a FELS model of B Class, renowned for its state-of-the-art performance and efficiency. It will be managed by «KMG Drilling & Services» LLP. Both shipyards where the unit was assembled are located in the Mangistau region. And they both belong to joint ventures. The first (in Aktau) is a joint venture with the participation of the Singapore engineering and design firm Keppel and the Kazakh company «KazStroyService», which provides design, logistics and construction services. The second, the Caspian shipyard Ersai, is run by the Italian engineering firm Saipem and the English-registered Lancaster Group. Each facility is capable of providing 12,000 tons of metal structures per year. These two enterprises have provided local construction and erection firms with the opportunity to work in conjunction with highly qualified foreign rig erectors.

Share of local content in Kazakhstan

A key factor influencing the oilfield services sector in Kazakhstan is the large-scale introduction of rules and regulations governing the share of use of local goods, services and labor (local content) by companies carrying out exploration and production projects. Following the example of other oil producing states (such as Norway, the UK and Brazil), Kazakhstan has introduced regulations aimed at maximizing local content. This is due to the desire to preserve the funds spent on goods, works and services in the domestic market, to expand the local human and technological base, as well as to create a service sector that will be able to export its services in the long term.

Initially, the 1995 Law of the Republic of Kazakhstan «On Oil» rather vaguely stipulated issues of local content, but the Government has repeatedly made amendments and additions to it, after which in 2009 regulations were adopted to regulate this area. In addition, in 2010, the Law «On Subsoil and Subsoil Use» was adopted, which prescribes the purchase of goods and services from Kazakhstan suppliers. After 2010, the Government of Kazakhstan began to develop programs that require oil and gas producers to use a certain share of local goods, services and labor: by 2014, 16% of all purchased goods and 85% of works and services (in aggregate) were to be of local origin. The government of Kazakhstan quite strictly monitored compliance with these requirements and punished Companies that violated them: In 2011, approximately 80 firms were fined for insufficient local content.

In 2015, the development of the draft Code of the Republic of Kazakhstan "On Subsoil and Subsoil Use" began, which provides for a number of changes designed to increase the attractiveness of the oil and gas industry for investment. One of the key changes foreseen in the draft Code is that partly connected with the accession of the Republic to the World Trade Organization, as well as with the creation in 2015 of the Eurasian Economic Union - is the abolition of state regulation of the procurement of goods, works and services (GWS) in the field of subsoil use, as well as requirements for local content in goods.

For the approval of suppliers of local goods, the Government of Kazakhstan has developed a system of certificates (the so-called «CT-KZ certificates»), which issued to suppliers for a period of one year after confirmation of the Kazakh origin of the goods they sell. Holders of the CT-KZ certificate have the opportunity to offer their goods with a 20% discount, and purchases by contractors of goods from firms that do not have certificates do not count towards meeting local content requirements. The Kazakh authorities also set quotas for hiring foreign employees in Kazakhstan: in 2012, only 30% of senior executives and 10% of other skilled workers, specialists and middle managers could be foreigners

Both as a result of new regulatory requirements and as a result of the expansion of the service sector in the country, the aggregate share of local content has grown significantly over the past five years: according to official reports, from the amount of about 3 trillion. tenge (16.7 billion US dollars), in aggregate spent on oil services in Kazakhstan in 2014, 54% went to local service providers, which is significantly higher than in 2010 (45%). Local content share of national oil company KMG in 2014 accounted for 72% of total procurement costs. While local purchases by oil and gas companies have increased in recent years, Kazakh service providers are

just starting to get involved in the performance of high-value work of higher complexity in the framework of oil and gas projects in the country

According to an interview in mid-2014 by the Deputy Minister of Energy of the Republic of Kazakhstan, UzakbayKarabalin, operators use local suppliers to procure basic goods, including fuel, electricity, building materials, metals, uniforms and office furniture - but not more high-tech goods. In another speech, Karabalin noted that Kazakhstani services are used for low-tech needs such as recycling waste or catering, although sometimes they are involved in a number of technical work (such as installing components); however, foreign contractors are employed for technologically complex drilling and well completion services. Oil and gas producers use international contractors such as Halliburton, Schlumberger or Parker Drilling for sophisticated drilling, logging and engineering (design and technological) works. It is in these areas that Kazakhstani suppliers should expand their experience, specialization and technical knowledge that they can acquire through cooperation with foreign service firms.

Three mega-projects in Kazakhstan were initially freed from the need to comply with local content requirements. But in the course of negotiations with the Kazakh authorities, the share of attracting local suppliers was agreed as part of the expansion of activities in the subsequent stages of all three projects. For example, in 2013, TCO announced plans to use local resources for 32% of all services that will be involved in the US \$ 23-40 billion Future Growth Project. It was estimated that this meant the creation of about 20,000 new jobs for Kazakhstani service providers. Kazakhstani firms for design, procurement and construction were established to develop Tengiz modules: one of them included international contractors FLUOR and Woodley Parsons together with the Kazakh Institute Oil and Gas (KING) and Engineering Company KazGiproNefteTrans LLP (EC KGNT). Development of the Tengiz field has opened up opportunities for cooperation in the implementation of drilling operations between foreign contractors and local rigs enterprises: in April 2015, a service subsidiary of KMG and the American firm Nabors Drilling signed an agreement to create a joint venture that will become the main supplier of drilling operations for the Future Growth Project.

Local content requirements can benefit Kazakhstan in the long term, ultimately having a positive impact on both the economy and the country's fuel and energy complex. In the field of oilfield services, Kazakhstan needs to focus on acquiring and expanding expertise and professional experience that will meet the new operational and technical conditions emerging in the country's extractive industry - especially on the shelf of the Caspian Sea. Kazakhstan may need a strategic approach to the development of a number of industries (such as metallurgy, construction, etc.) to support the service sector and provide oil and gas companies with more complex, high-tech goods and services, the demand for which will be high

One interesting example for Kazakhstan is Brazil. Brazil's hydrocarbon reserves are concentrated in complex super-deep shelf fields. At the same time, Brazil sought to use local resources for the construction and operation of offshore platforms, drilling ships and large floating installations for the production, storage and shipping of oil, which were required for the development of the industry. This approach, combined with tough and ambitious oil production plans, has led to problems and delays in the implementation of construction and installation works, as the production and assembly facilities available in Brazil were too small to cope with the incoming orders, not to mention the lack of development in this area. In this regard, the actual volume of deliveries of floating platforms is expected to decrease in 2012-2021. by 40%. Although mining companies comply with local content requirements, the pace of development has slowed sharply and costs have increased. Brazil's stringent local content requirements have also become a key source of corruption in the country's oil industry. The example of Brazil demonstrates the importance of clear and deliberate planning of policies for the development of local content in the service sector, taking into account the requirements of the current time

Perhaps we should consider identifying specific areas of work on the project (areas of specialization) for the implementation of which it is profitable and expedient to use local resources, followed by drawing up constructive plans that are justified in terms of budget and

implementation time.

One of the key obstacles to the protectionist policy regarding local content will be both WTO accession and the Eurasian Economic Union. Due to Kazakhstan's obligations to the aforementioned international organizations, laws prescribing the use of local resources will have to be phased out. Nevertheless, Kazakhstan will probably still have the opportunity to introduce tax incentives (VAT, corporate tax), beneficial for suppliers of domestic goods and services. However, at the same time, Kazakhstan will need to create a clear and well-timed plan to reduce the scope of protectionist policies.

Key recommendations:

- To increase the country's weight and importance in the global drilling and oilfield services market, Kazakhstan needs to continue to develop and create new, high-tech solutions that are needed for next-generation projects.

- Plans for the development of the national sector of Kazakhstan should include incentive mechanisms permitted by the WTO rules, and not rely on a policy of explicit protectionism, which will have to be mitigated after Kazakhstan's accession to this organization. In developing such plans for Kazakhstan, the experience of the UK (established by OSO) may be useful to some extent.

- Kazakhstan's oilfield service providers must continue to work closely with more experienced foreign partners on complex projects to maximize the adoption of best practices.

- Taking into account that the production of hard-to-recover hydrocarbon reserves in difficult geological conditions is becoming increasingly important, it is necessary to promote the wider application of modern technologies in exploration work and the provision of other field services, and first of all, such assistance is expected from the national oil company - KMG [17]

It follows from the above:

1. Working projects effectively implemented by the forces of the considered sector of the country should be defined by type; economically sound and agreed plans for the development of capital infrastructure and the necessary human resources must be properly designed to increase the weight and importance of the country in the world market for drilling and oilfield services.

2. Economically developed states create strategic reserves of raw materials, primarily oil, in order to ensure uninterrupted operation of economic facilities and for future generations. For example, the USA, carrying out oil production in the Gulf of Mexico, practically does not use it, but pumps it into tanks for long-term storage. For its own needs, the state uses imported oil from other countries.

Our Government proposes to do the same. In particular, the Resolution under consideration says: "It is necessary to create a strategic "reserve" of hydrocarbon raw materials, which will become the foundation of the country's energy security, a protective mechanism in case of possible economic shocks. Based on the analysis of long-term trends in the global energy sector, as well as the long-term energy balance of the republic, to develop mechanisms for creating a strategic "reserve" of hydrocarbon resources by types of raw materials in the required volumes.

This mechanism should include the creation of an appropriate infrastructure, storage volumes of the strategic "reserve" of hydrocarbon raw materials, as well as measures for the formation, renewal and use of the strategic "reserve".

Thus, in the oil and gas sector of Kazakhstan, the most relevant at present is the principle of greening the economy. Which means the implementation and application of a set of managerial (organizational), financial and economic measures, technological, aimed at reducing the pressure on the environment by enterprises while maintaining production goals. The purpose of production is to make a profit at a sufficient rate of economic development, ensuring the progressive development of the human community.

With high production of fuel oil, most of it is burned, although it is a raw material for the production of various fuels and petrochemical products; flaring of associated gas leads to an annual loss of over 2 billion cubic meters of associated gas; deterioration of climatic conditions

leads to various diseases of the local population.

References list:

1. Statistical Review of Kazakhstan (2006) Almaty: Agency of the Republic of Kazakhstan on statistics
2. Oil & Gas of Kazakhstan (2005) Almaty: Agency for Petrochemicals in Kazakhstan
3. IHS Energy Insight (2014) Shifts in Upstream Oil Tasks Spark Search for Onshore Rig Fleet Modernization Formula18. Abrosimov A. A., Dolomatova M. Yu., Telyasheva E. G. (2002) Ecology of processing of hydrocarbon systems, 70-81.
4. Podavalov A. (2004) Ecology of oil and gas production. Oil and Gas Journal, 134-146
5. Kmgep.kz. (2010) Oil and Gas Sector Strategic goals of NC "KazMunayGas". [online] Available at: http://kmgep.kz/eng/about_kazakhstan/oil_and_gas_sector/
6. Edilbaeva G. (2007) Development of legislation on environmental management in the context of industrial development of Kazakhstan.
7. UNEP, U. (2011) Towards a green economy: Pathways to sustainable development and poverty eradication. Nairobi, Kenya: UNEP.
8. Nazarbayev, N.A. (2012) Strategy "Kazakhstan-2050". New political course of the established state. Kazakhstanskaya Pravda, 15 (437-438).
9. Diarov, M.D. and Serikov, T.P. (2003) Ecology and oil and gas complex. Almaty: Gylym, 340.
10. Tengizchevroil.com. 2011. Report of Tengizchevroil on corporate social responsibility [online] Available at: <<https://www.tengizchevroil.com>> [Accessed 5 October 2020].
11. Nazarbayev, N.A. (2013) On the concept of the transition of the Republic of Kazakhstan to a "green economy. Astana, Akorda, 577.
12. Online.zakon.kz. (2013) Resolution Kazakhstan. "On Approval of the Concept of Effective Management of Natural Resources and Use of Income from the Raw Materials Sector of the Republic of Kazakhstan"[online] Available at: <https://online.zakon.kz/Document/?doc_id=31453530#pos=14;-46> [Accessed 19 November 2020].
13. GlobalPetrpPrices.com.(2020) Gasoline And Diesel Prices By Country | Globalpetrolprices.Com. [online] Available at: <<https://www.globalpetrolprices.com>> [Accessed 25 November 2020].

Аннотация: Требования к местному содержанию могут принести пользу Казахстану в долгосрочной перспективе, в конечном итоге положительно сказавшись как на экономике, так и на топливно-энергетическом комплексе страны. В сфере нефтесервисных услуг Казахстану необходимо сосредоточиться на приобретении и расширении экспертных знаний и профессионального опыта, которые будут соответствовать новым производственным и техническим условиям, возникающим в добывающей промышленности страны, особенно на шельфе Каспийского моря. Казахстану может потребоваться стратегический подход к развитию ряда отраслей (таких как металлургия, строительство и т. д.), для поддержки сектора услуг и предоставления нефтегазовым компаниям более сложных высокотехнологичных товаров и услуг, у которых будет высоким спрос. В статье рассмотрены и проанализированы: состояние нефтесервисных услуг и местные требования к техническому обслуживанию в Казахстане, а также представлены выводы и рекомендации по снижению объема протекционистской политики.

Ключевые слова: буровая промышленность, буровые установки, нефтесервисный сектор Казахстана, требования к местному содержанию в товарах

Түйін: Жергілікті қамтуға қойылатын талаптар ұзақ мерзімді перспективада Қазақстанға пайда әкелуі мүмкін, нәтижесінде экономикаға да, елдің отын-энергетикалық кешеніне де

оңәсеретеді. Мұнай кен орындарына қызмет көрсету саласында Қазақстанға республиканың өндіруші саласында, әсіресе Каспий теңізінің қайраңында пайда болатын жаңа өндірістік және техникалық шарттарға сай келетін тәжірибе мен кәсіби тәжірибе жинауға және кеңейтуге назар аудару қажет. Қызметкөрсету саласын қолдау және мұнай-газ компанияларына сұраныс жоғары болатын жоғары технологиялық тауарлар мен қызметтерді ұсыну үшін бір қатар салаларды (мысалы, металлургия, құрылыс және т.б.) дамытуға стратегиялық көз қарас қажет болуы мүмкін. Мақалада мұнай кен орындары қызметтерінің жағдайы және Қазақстандағы техникалық қызметке қойылатын жергілікті талаптар зерттеліп, талданады, сонымен қатар протекционистік саясаттың аясын қысқарту бойынша тұжырымдар мен ұсыныстар берілген.

Кілт сөздер: бұрғылау өнеркәсібі, бұрғылау қондырғылары, Қазақстанның мұнай сервистік секторы, тауарлардағы жергілікті қамтуға қойылатын талаптар