TERMINAL INFRASTRUCTURE OF KAZAKHSTAN AT THE CHINESE PORT OF LIANYUNGANG

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ABSTRACT

Today the Republic of Kazakhstan, a member of EEU, is in the process of active building of its transit policy, market strategy and formation of new vectors of development. Enhancing transport infrastructure is a real step to improve competitiveness of the country's transport complex. Among key projects in that sphere the article names own terminal infrastructure in the Chinese port of Lianyungang wich is built in order to consolidate freight flows in Southeast Asia, to establish and develop related logistics mechanisms, to increase freight transit through the territory of Kazakhstan.

Keywords: logistics terminal, seaport, cargo transportation, international transport corridors, transit capacity, border crossing point.

Background. *Kazakhstan's location in the center of the Eurasian continent between major trading partners – Asia and Europe – dictates the main challenge and stimulates the development of transport and logistics system in the country. In this regard, the task is not only to ensure creation of high-quality internal infrastructure, but also to establish a reliable network of external transport and logistics complexes outside the country at the points of origin and extinction of transcontinental transit freight flows [1].*

Given the advantages of a transit route from China, South-East Asia (SEA) countries to Europe via Kazakhstan (increase in speed of transit compared to the sea route through the Suez Canal and reduction in cost compared to air transportation), there is a real opportunity to redirect part of the freight flow from sea and air transport to rail.

As the potential of transit transportation through the territory of the Republic of Kazakhstan is enormous, due to the proximity of China, the presence of a developed network of railways, transcontinental international corridors, then transportation of goods in westward direction through the teritory of Kazakhstan can significantly shorten the distance and time of goods delivery.

Objective. *The objective of the authors is to consider one of key projects of Kazakhstan which is the development of own terminal infrastructure in the Chinese port of Lianyungang to consolidate freight flows in Southeast Asia and develop related logistical mechanisms.*

Methods. *The authors use comparative analysis, graph construction, evaluation approach.*

Results. *Existing international transport corridor of Trans-Asian Railway Main Line (TARM) passes through the territory of Kazakhstan in the following areas:*

– Dostyk–Aktogay–Sayak–Mointy–Astana–Petropavlovsk (Presnogorkovskaya);

– Dostyk/Khorgos–Aktogay/Zhetygen–Almaty –Shu–Arys–Saryagash etc.

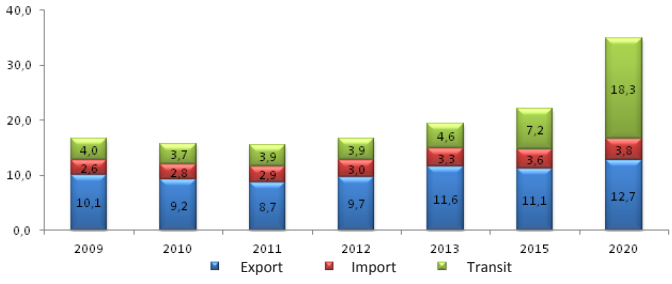
At the end of 2012 the opportunity arose to transport cargo from China, Japan, Korea and countries in Southeast Asia to the countries of CIS and Europe on additional routes in connection with the opening of a second border railway crossing Altynkol–Khorgos, section of which on the territory of Kazakhstan is Altynkol–Almaty–Aris–Kandyagash–Aksaraiskaya (Ozinki).

Dynamics of volumes of transported goods of «Kazakhstan Temir Zholy» through the border crossing Dostyk– Alashankou and Altynkol–Khorgos is shown in Pic. 1.

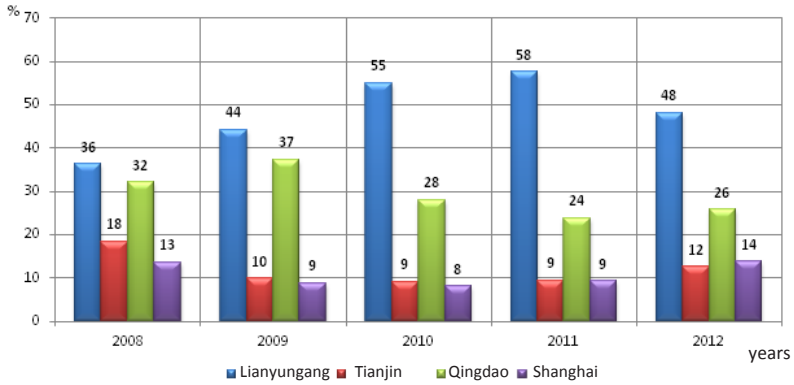
A significant part of transit (more than 30% of the total volume of transported cargo) goes in the direction of China, exports reach an average of 11–12%, import – 16–17%.

Transportation of goods is carried by sea from the ports of Southeast Asia to China's ports to further access via interior railway network the Trans-Asian Railway Main Line (TARM), starting on the Pacific coast of China, at the port of Lianyungang.

This corridor crosses in the latitudinal direction China's territory and through the railway network of Kazakhstan, Russia and other CIS countries goes to Europe. The total length of the route from the port of Lianyungang to the Western borders is about 10 thous. km, of which more than 4 thous. are in China, 2,783 thousand. km (through the border crossing Altynkol, connection with Russia in Iletsk) and 3,025 km (through the border



Pic. 1. Dynamics of rail freight transportation through the Kazakh–Chinese border crossings by type of traffic, mln tons.



Pic. 2. The dynamics of distribution of freight traffic between the ports of China.

Table 1

Time of goods delivery from border railway crossings Dostyk–Alashankou and Altynkol–Khorgos to Chinese ports

Departure point	Transit distances, km	Delivery speed, km/day	Speed of delivery with account of stops at border crossing point, day	Transshipment port
Dostyk–Alashankou	4147	643	7,53	Lianyungang
	3996		7,29	Qingdao
	3740		6,9	Tianjin
	4606		8,24	Shanghai (st.Yanshan)
Altynkol–Khorgos	4291		7,75	Lianyungang
	4562		8,17	Qingdao
	3954		7,23	Tianjin
	4824		8,58	Shanghai (st.Yanshan)

Source: transit distance according to the Ministry of Railways of China; speed of delivery – according to JSC Kaztranservis, delivery period is given as calculated by SC KazATC.

crossing Dostyk and Iletsk) are on the territory of Kazakhstan.

Loads from Kazakhstan are delivered to railway border points Dostyk–Alashankou and Altynkol–Khorgos. Here technological operations are performed for transition from broad gauge of 1520 mm to the narrow gauge of 1435 mm. Then the loads follow through the territory of China up to transshipment ports.

Transshipment of goods in the direction of the Southeast Asian countries, Japan, the Republic of Korea, Australia, is mainly carried out at the Chinese ports of Lianyungang, Tianjin, Qingdao and Shanghai (Pic. 2). The largest share of the total traffic accounts for Lianyungang that is explained with the relatively unloaded infrastructure.

Terms of delivery of goods from these four ports to railway border crossings Dostyk–Alashankou and Altynkol–Khorgos in container trains with the speed of delivery of 643 km / day. are shown in Table 1. In addition, transit distances between ports and border stations are shown.

Improving the transport infrastructure of trans-Asian route is a real step to a phased increase in the competitiveness of the transport complex of Kazakhstan as a part of the Eurasian network of international transport routes.

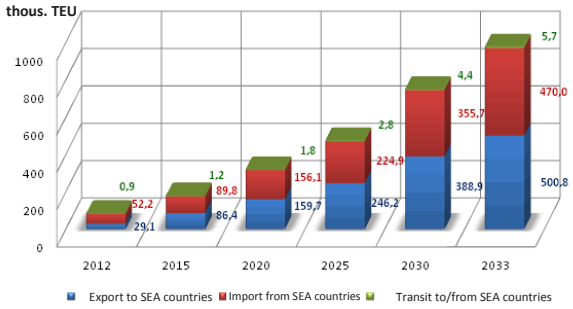
Construction of the own terminal infrastructure in the Chinese port of Lianyungang is among key national projects. Its aim is to consolidate freight flows in Southeast Asia.

Lianyungang port is linked with a number of ports of the Southeast Asian countries, Japan, Korea, and the opening of the terminal will allow to develop in Kazakhstan the sector of logistics services, to expand its customer base. Exploiting its own terminal, Kazakhstan has a chance to make a profit as a transit country between the Pacific region and the countries of Western Europe.

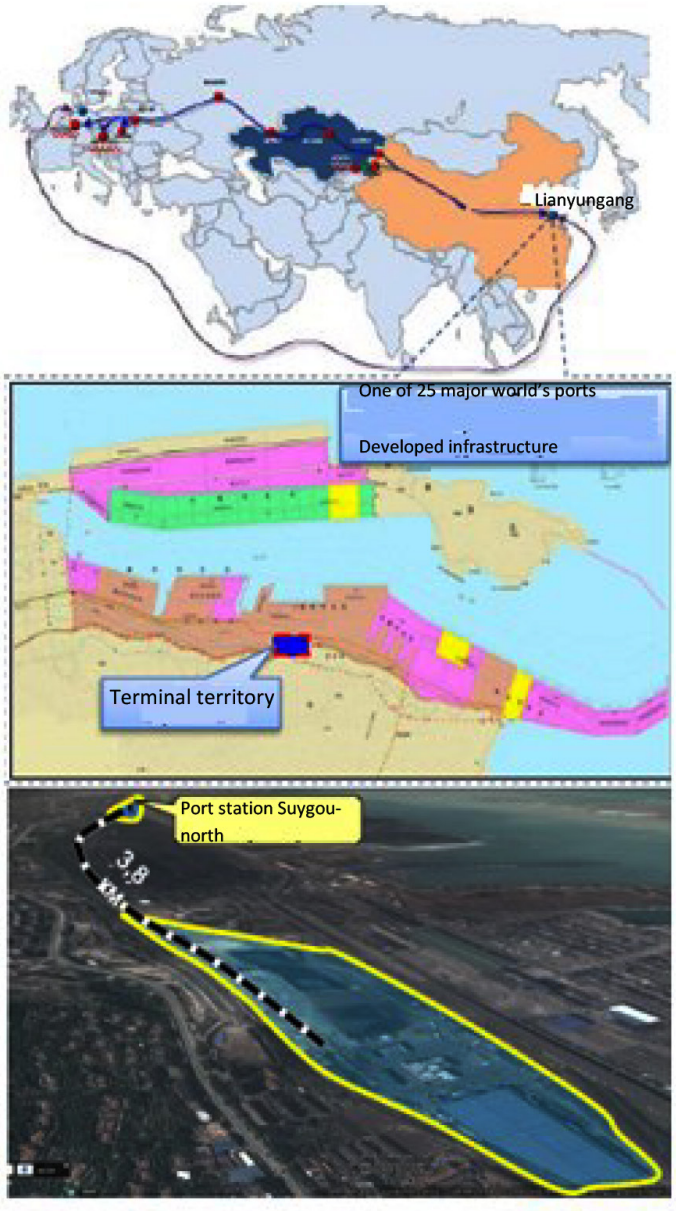
In 2013, an agreement was signed between JSC NC Kazakhstan Temir Zholy and Lianyungang People's Government on the development of a feasibility study (FS) of construction of a logistics terminal in the city port. The feasibility study was prepared on the part of China by LLC The Third Railway Survey and Design Institute Group Corporation – TSDI), on the part of Kazakhstan by Kazakh Academy of Transport and Communications n. a. M. Tynyshpayev (KazATC) [2].

According to the forecasts presented in FS, freight flow in the direction of Southeast Asian countries through Lianyungang port after implementation of the project of construction of the terminal will increase by more than 5 times by 2020 and more than by 13 times by 2030 (as compared with 2012 level), which is graphically shown in Pic. 3.

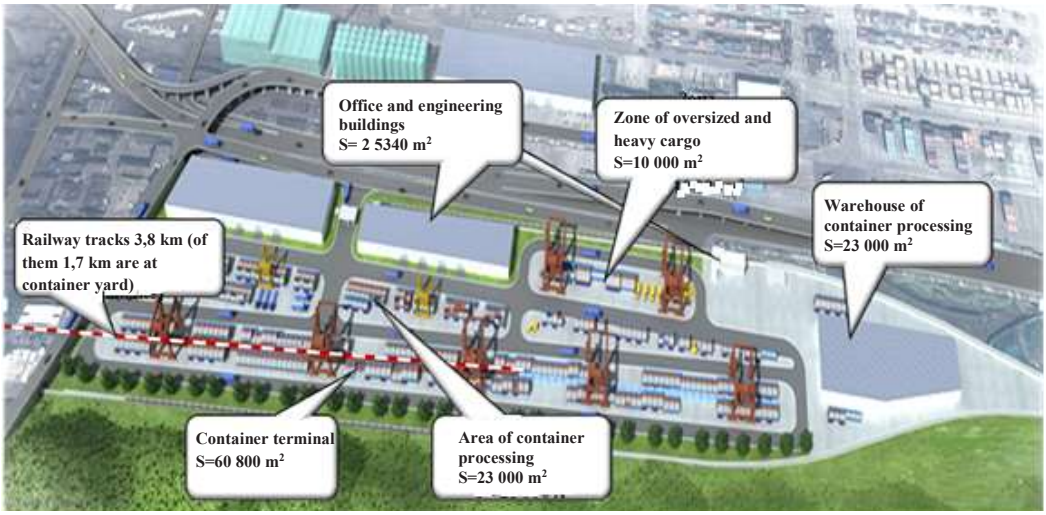
If we consider the volume of traffic in the context of traffic types, export from Kazakhstan in 2020–2030



Pic. 3. Forecast values of container traffic volumes (thous. TEU) through the terminal at the port of Lianyungang up to 2033.



Pic. 4. Port of Lianyungang: its location and structure, including Kazakhstan's terminal.



Pic. 5. Scheme of the main objects of the Kazakhstan logistics terminal at the port of Lianyungang.

will make 57,5%, and imports into the country will make 42,3%, transit through the territory of Kazakhstan and China will be about 0,2%.

The opening of Kazakhstan's terminal at the port of Lianyungang (Pic. 4) together with the improvement of the legal base for transit transportation, special program of modernization of the transport industry, as well as with introduction of more flexible tariff policy for higher profit transit traffic in the future will significantly improve the competitiveness of Kazakh Railways and attract up to 8% of total transit traffic in the direction «Southeast Asian countries–Europe and CIS».

According to the technology layout, the terminal will process goods in containers as well as non-containerized cargo. To this end, container yard is organized, together with and closed warehouses (Pic. 5).

Thanks to the modern infrastructure shippers have an opportunity to obtain at the terminal full range of services for receipt, sorting, storage of transported goods. and container operator companies from Kazakhstan will get access to the same range of service while organizing container trains.

Sea terminal project is of great interest for the largest freight forwarders, who are engaged in transportation between China and Europe. The Kazakh side believes that it is possible in a short time to perform that plan and to create a new transport «product» in the East–West direction.

Conclusions. *In the context of the overall development strategy implementation of the project of building its own sea terminal in Lianyungang gives Kazakhstan an additional resource to intensify activity in China's eastern ports and thereby to organize a full-fledged hub for goods, which are now transported by rail through China to Europe and back. With the help of a terminal goods will be collected and processed not only from China, but also from Japan, South Korea and Southeast Asian countries. There is reason to believe that it will be possible in the future to form a pool of transit trains in the direction of Kazakhstan. By all its parameters and objectives stated logistics project is of strategic importance for the economy of Kazakhstan and will strengthen transit capacity of the country.*

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