

THE POSSIBILITIES OF RAILWAY LINE CONNECTION BETWEEN KAUNAS FEZ AND KAUNAS INTERMODAL TERMINAL *KRAVU PĀRVADĀJUMU AR DZELZCEĻA TRANSPORTU UZ KAUNAS BRĪVĀS EKONOMISKĀS ZONAS TERITORIJU IESPĒJU IZPĒTE*

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Abstract. Throughout the last decade, development in the logistics sphere is clearly visible. New logistics centers are being built. Trains, ships and road transport transfers cargos every day. Research shows that apparently in Lithuania most developed transportation method is car transport (Palšaitis, 2005). However, modernization of railway track and railway infrastructure, allows more and more companies to choose transportation by railways, which can help distribute cargos in bigger quantities and significantly reduced costs (Vilkevičius, 2012). Therefore this article tries to reveal the need for railway connection between Kaunas Free Economic Zone and the Intermodal Terminal of Kaunas and its future benefits.

Keywords: FEZ (Free Economic Zone), intermodal terminal, cargo transportation.

Introduction

Logistics plays bigger and bigger part in manufacturing companies' activity. Many companies buy logistics services from other companies, and centralised logistics centres are progressively becoming decentralised. It is a perfect opportunity for Lithuania. While cargo flows and numbers of orders are growing rapidly, logistics development is noticeable: new logistics centres, renewed fleets, new logistics solutions are taken into account. While the logistics network is expanding, the possibility of the new railway line between Kaunas Intermodal Terminal (which is located in Palemonas town) (hereinafter referred to as Kaunas IT) and Kaunas FEZ is taken into consideration. Thus the research was conducted and discussed in this article.

The aim of the research is to evaluate the need for railway connection between Kaunas FEZ and Kaunas Intermodal Terminal.

Objectives of the research are to reveal the situation of cargo transportation means in Lithuania, to carry out a research on the need for railway connection between Kaunas FEZ and Kaunas Intermodal Terminal, and provide possibility analysis on the following connection for the future.

The object of the research is the rail track connection of Kaunas FEZ and Kaunas IT.

Research methods: scientific literature analysis, questionnaire survey, interview method.

The results of the research are provided in the conclusion part of this paper.

Inward logistics terminals

Core logistics activity points are inward terminals, which combine transport infrastructure, cargo handling infrastructure, seaports and markets (Palšaitis, 2005). Usually, according to the author, centralized logistics structure is developed near seaports or first inward terminals. With the expansion of EU decentralized structures are rapidly moving forward east countries. However, inward terminals are of core importance not only for logistics, but for the seaport activities as well.

From 2009 to 2016, employment in transport (and communication) sector has grown up to 33%, and reached its peak with 111 400 work places, or 7,3% of employment rate. According to the Ministry of Transport (2014):

- Transport and logistics sectors have created a vast added value to Lithuania's economy: 7,3% workers have created 10,4% GDP.
- During the same period, transport and logistics contribution to the country's GDP increased from 8.5% in 2001 to 10.4% in 2007 (Ministry of Transport, 2014).

One of the issues therefore to be discussed is the intermodality of logistics services.

Kaunas Intermodal Terminal

Kaunas intermodal terminal is a railway terminal in Kaunas, situated close to Palemonas train station being the second by container turnover in Lithuania.

Kaunas Public Logistics Center (KVLC) is an important transport hub, as it can allow connecting two different width railway tracks – the European and the Russian one. Cargos from



one track onto the other are lifted with a modern crane, which can lift up to 40 tons. Marine containers, tank containers and refrigerated containers are provided with service, container storage for up to 45 days, customs, food and veterinary services in one place, fast and efficient cargo loading on to railway platforms and semi-trailers. Palemonas town was chosen for its unique geographical position for an intermodal terminal being close to International Kaunas Airport and Kaunas Free Economic Zone (FEZ), highway

Vilnius-Klaipėda, leading to Klaipėda sea port (Vilkevičius, 2012).

Picture 1. Kaunas Intermodal Terminal

The terminal itself is equipped with:

- container handling gantry crane with the lifting capacity of 40 tons with automatic 20, 30, 40, 45 feet container and semi-trailer claw and cargo weighing system;
- one axle truck with semitrailer – platform, for container transportation (Kauno intermodalinis terminalas, 2017);
- four railway loading routes – efficient road distance 1360 m. (two railway – tracks 1520 mm, two railway-tracks of 1435 mm);
- 1120 TEU container storage area;
- 16 places for refrigerated containers.

It is important to mention that 1 container transshipment with crane cycle is 7 minutes with the permeability of 70 containers per 8 hours (Kauno intermodalinis terminalas, 2017).

As a result, it is possible to state that the container handling time is much shorter than the loading of road transport. Cargo can be loaded from one wagon directly onto another.

Railways in Lithuania

It is worth mentioning that at the moment, quite a large network of railways is carved all over the world, which carry passengers or heavy freights to various countries (Nash, 2002).

What exactly is a railway? According to Minalga (2001), railway - train transport entirety consists of the rail network, trains, stations, ancillary equipment. The line network length of the current Lithuanian broad tracks is 775,3 km. The Russian 1520 mm track goes for 1753,5 km, and the standard 1435 mm track reaches only 21,8 km. The 1520 mm width railway connects Lithuania with the Baltic countries, and Commonwealth of Independent States, and 1435 mm width track railway comes from Poland.

On 7th October 2016 in Kaunas railway station the Rail Baltica project was signed. Railway section “Jiesia – Rokai” construction work was under contract. This line with a narrow track will connect Kaunas railway station with Kaunas Intermodal Terminal, which in the future will become a part of “Rail Baltica” line and effectively overtake the containers flow arriving on the broad track at the distribution point. When connecting Kaunas Intermodal Terminal with rail road “Rail Baltica”, the terminal will become a centre in logistics chain with great importance, serving cargos transported with different standard tracks with railway network from North- South, and East – West directions (Rail Baltica, 2017).

In summary, it is possible to state, that rail transport is currently intensively developed and additional transport directions are being added. Fast trains from Klaipėda port to Kaunas IT and Vilnius IT provide great convenience. Constructing an additional railway line from Kaunas intermodal terminal to FEZ would open many opportunities for investors to reach every Baltic country with railway transport directly from FEZ through Kaunas Intermodal Terminal.

Free economic zones

In Lithuania there are seven free economic zones (furthermore referred to as FEZ), five of which are fully functioning. Here in Lithuania foreign companies can use developed infrastructure and exclusively favourable economical and legal terms and conditions. Businesses benefit from reduced tax rates and various counselling. The law on Free Economic Zones framework shall establish a free economic zone (further – zone) establishing procedures (Laisvoji ekonominė zona, 2017).

Kaunas FEZ covers 534 ha and in order to start working in it, it is necessary to obtain the relevant areas of the management company permission to develop activities in the area. Companies in the area have the ability not to pay income tax (15%) for 6 years, and after this period, and in 10 years the company can have 50% reduced tax rate.

Companies, FEZ members (registered in the Republic of Lithuania and having FEZ Management Company permission to develop the business area in the territory), meet the specific requirements using the tax advantages:

- For the first six reporting periods do not have to pay income tax.
- After the end of the period, for the next 10 years have reduced 50% income tax rate;
- Dividends are exempt from income tax;
- Real estate is not taxed with real estate tax (Laisvoji ekonominė zona, 2017).

The companies can have more privilege obtained by laws. The benefit to the state can be seen in the companies of the area being oriented in export manufacturing.

Study results overview

In order to determine the need for rail links between Kaunas LEZ and Kaunas intermodal terminal in April – May 2017 the study was carried out. 26 of Kaunas FEZ companies participated in the survey. With the help of questionnaire survey and interview method, companies’ representatives clarified the view of the mentioned railway track construction and benefits. Results show two different prevailing opinions.

Following the results of the respondent answers (see Table 1), it can be clarified that the turnover of 46% of the companies in the FEZ territory reaches 3 – 5 mln Euros, that are medium sized companies, employing 20-50 people (39%). Most of the goods, entering the FEZ territory, are brought on pallets (54%). Distributing respondents by activity, the majority are engaged in production (38%).

Table 1. Respondents' distribution (Composed by authors)

Company turnover	<3mln €	3 mln – 5mln €	5 mln – 10 mln €	10 mln - 20 mln €	>20mln €
	7%	46%	17%	15%	15%
Employee count	0-10	10-20	20-50	50-100	>100
	7%	31%	39%	9%	14%
Company's activities	manufacturing	manufacturing/ Logistics	electronics/ automatization	Food /pharmaceuticals	Energetics
	38%	27%	19%	12%	4%
Type of production	Liquid goods	fragile goods	Palletised goods	Oversized goods	
	12%	18%	54%	16%	

The need for railway for the FEZ companies

According to the results of the survey, the companies transport up to 8 thousand tons of cargo averagely. For industrial companies the railway track to FEZ is not very important, as the goods made in the territory are fragile, and an extra loading is not so efficient, or rather harmful. Otherwise, companies core activity of which is related to energy, would benefit a lot from this railway connection to Kaunas IT, but companies with this activity barely 4%. Pharmacy and food companies (12%) declined the idea of railway line need, claiming that they are transporting goods of a certain temperature to be regulated, and fast delivery time is important.

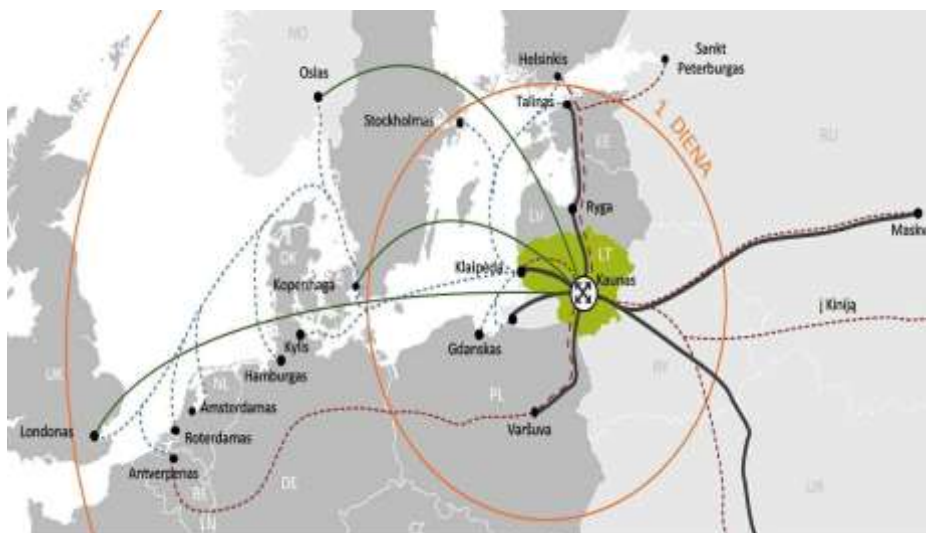
After surveying the company representatives, it has been stated, that this railway line can be useful for logistics companies, which could transport cargos from Klaipėda port directly to the FEZ through Kaunas intermodal terminal. What is more, manufacturing companies, which do not produce fragile goods, but, for example milk, oil products, etc., would see it beneficial.

The majority of the surveyed companies do not approve the idea of railway due to the costs and big investments. Companies that have a turnover of less than 10 mln Eur (more than 70% of all FEZ companies) are not interested in the railway line. Thus, it can be stated that only a small part of the companies in Kaunas FEZ feel the need for the railway connection to Kaunas IT.

The interview results' review

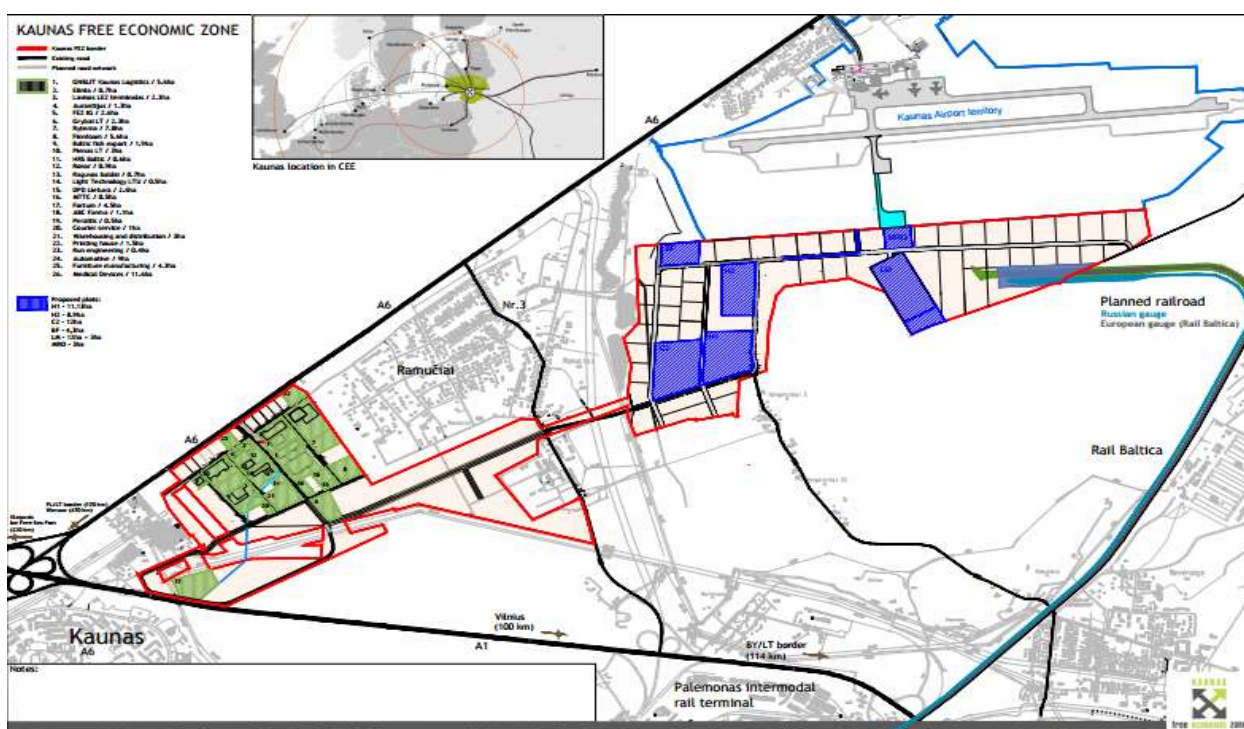
It is important to note, that the interview survey made with general director of FEZ - Vytas Petružis, showed a totally diverse point of view. He would value the construction of railway line, as beneficial because this project would have direct benefits to Kaunas FEZ. According to the interviewee, currently there is no railway line in the territory, therefore it is impossible to attract new investors, the activity of which consists of heavy-weight cargo or very large quantity transportation, e.g. example farming machinery transportation, or fuel and construction material transportation.

At present, this sector cannot be developed, but constructing this line, development in the east part of the territory could be expected (see Picture 2).



Picture 2. Main directions from-to Kaunas FEZ (Kauno LEZ, 2017)

What is more, there would be a direct benefit for Klaipėda terminal where ships have to be unloaded fast; therefore the containers cannot stay for long on the shore as they take up a lot of space. Therefore they are being carried out by so called bullet trains (schedules of which are synchronized with unloading of ships) to a different place, and only then sorted by their destination. Doing this method, one extra loading is created, and it takes more time, and money.



Picture 3. Kaunas FEZ plan. Red line – Kaunas FEZ area, blue area –planned area for new investors, blue line – Kaunas airport, Railway track marked with green colour is the planned rail track from „Rail Baltica“

This problem can be solved by warehousing containers in Kaunas FEZ, and directly distributing them in CIS countries or Europe. Also it is possible to perceive new clients from maritime countries because Klaipėda port does not freeze throughout the year (unlike northern ports), and transportation in the Baltic sea is cheaper due to this reason. Thus the foreign clients could use Klaipėda port as an alternative, and save money, of course if the client needs railway transportation. Warehousing in Kaunas FEZ would greatly increase Klaipėda port cargo

turnover. There is also a direct benefit for customs, which are in Kaunas FEZ territory (see Picture 3), to save time and reduce auto transport jams in the area. Also there is indirect benefit for the country to collect more tax from new investors. The other aspect is that the authority will take into account, if it is worth to invest in to this project, and when it will pay off. The assumption could be drawn that the line itself will not pay off in the next 5-6 years, but it creates other added value, such as new working places, Klaipėda port development and new investors in Kaunas.

Conclusion

1. Literature analysis showed that transit corridors through Lithuania are key branches to Lithuania's economy development. With the development of Klaipėda port and railways it is possible to distribute cargos more efficiently
2. Kaunas intermodal terminal allows connecting two different width tracks, has especially favourable geographical position being close to Kaunas international airport, Kaunas FEZ and highway Vilnius – Klaipėda. It can create good terms and conditions for the companies in Kaunas, the activities of which consist of transporting goods.
3. It was found, that Kaunas FEZ would benefit from railway connection with Palemonas intermodal terminal, which would help FEZ to attract new clients, reduce Klaipėda port load, and increase the speed of cargo routes through Kaunas.

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Kopsavilkums

Laikā, kad starpmodālie kravu pārvadājumi kļūst arvien populārāki, ir svarīgi veikt dzelzceļa sliežu ceļa starp Kauņas intermodālo termināli un Kauņas brīvo ekonomisko zonu nepieciešamības izpēti. Šā raksta mērķi ir izanalizēt tranzīta koridorus, kas šķērso Lietuvu, veikt diskusiju par Kauņas intermodālā termināļa vērtību Kauņas reģiona mērogā un novērtēt kravu pārvadājumu pa dzelzceļu nepieciešamību Kauņas brīvajā ekonomiskajā zonā. Literatūras analīze ir parādījusi, ka tranzīta koridori, kas šķērso Lietuvu, ir viena no galvenajām ekonomikas attīstības sastāvdaļām. Kauņas intermodālais terminālis ir ļoti labā ģeogrāfiskajā stāvoklī, un šāda sasaiste veidotu ļoti piemērotus apstākļus tādu jaunu uzņēmumu izveidei, kuriem nepieciešams autotransports vai dzelzceļa transports. Ar visām modernām tehnoloģijām un ierobežotiem resursiem Kauņas intermodālajam terminālim būtu jāizskata plānotā dzelzceļa, kas sasniedz Kauņas brīvo ekonomisko zonu, būvprojekta iespēja, kas būtu liels potenciāls Lietuvas ekonomikai.