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Project of the E40 Water Route Arrangement
Investment Risks Study

The project on the arrangement of the water route E40 (hereinafter E40) is associated with increased investment risks, while its long-term influence on the Belarus' economy may be negative.

The E40 project on the creation of the water way joining the Baltic and the Black Sea on the route Gdańsk—Warsaw—Brest—Pinsk—Kyiv—Kherson has reached its final pre-investment stage. The governments of Poland, Belarus and Ukraine are looking into the possibility of investing significant funds into this project with Mobilisation of state resources as well the financing of international donors. The biggest part of the capital investments (around EUR 12 billion) is directed to the Polish section of the route Visla—Brest. The arrangement of the Belarusian section of the E40 has been preliminarily estimated up to EUR 150 million.

The mobilisation of investments in the Belarusian section will have a positive effect on the stage of their utilisation because it will provide construction work for organisations and will create a number of jobs. The flow of foreign capital will improve the country's payment balance.

Nevertheless, there are grounds to doubt that E40 will have a long-lasting positive effect on the development of the country's transport system and will foster the sustainable development of the Brest and Gomel regions that cover the water route, as well as the Belarusian economy on the whole.

We have to state that internal water transport is inferior to the automobile and railway transport by the key parameters of competitive power in terms of the delivery speed, the possibility to operate low-volume cargoes, the use of flexible logistic schemes, and also the seasonal restrictions. Moreover, the inland water route transportation, as a part of the delivery chain,

generally involves additional transhipment sections which decelerates the transporting and increase the cost of delivery.

The above said is one of the reasons why Belarus has been showing a sustainable decrease in the inland water transportation since 2011. According to Belstat, in 2016, the river-borne freight turnover was just 21 million tonnes-km, or 0.017% of the total freight turnover for all means of transport. The weight of the cargoes transported was 2.1 million tonnes (or 0.5% of the country's total figure).

We believe that Belarus cannot be guided by the average specific weight of the cargo inland water transportation in EU28 at the level of 6.7% which is referred to by the E40 project's feasibility study prepared by the Gdansk Maritime Institute. The common European statistics are influenced by the indices of such countries as the Netherlands (38.9%), Belgium (20.4%) and some others, having a ramified system of canals which are the coastal extension of marine water routes. Those canals are used for short advancement of cargoes inland towards large logistic hubs for further transhipment onto automobile and railway transport. This means that in this case there is a distortion of statistics as in fact because the marine cargo transportation is considered as part of inland water cargo transportation.

The conditions of cargo transportation by various means of transport defeat the inland water route E40.

According to the estimates of the Gdansk Maritime Institute, the fees on inland water cargo transportation become competitive as compared to the automobile and railway transportation if the volume of the transported cargoes is at least 1000 tonnes for over 500 km. But the possibility of saving money by transportation via inland water routes is zeroed by the fact that the route usually offers the longest distance in comparison with the automobile and railway transportation. For example, the length of E40 between its two ends, Gdansk and Kherson, is more than 2,000 km whereas the automobile roads between the two ones is shorter.

The E40 transportation will be at a material disadvantage in terms of time. For instance, according to the estimates made by the Gdansk Maritime Institute, the transportation of forty 40-feet containers by a barge from Gdansk to Kherson without stopping in the ports on the route will take around 14 days, or around 290 hours.

The same amount of cargoes can be delivered by the railway—for 66 hours, which is 4.4 times faster, and by automobile transport—for 31 hours (9.3 times faster).

In case of stops and operations in the inland ports of E40 (Warsaw, Brest, Kyiv, Mozyr, Dnepropetrovsk, etc.), the delivery term will increase to 18 days, and the difference against railway and automobile transportation will increase up to 6.5 times and 14 times respectively.

Such a long water delivery will lead to a 'freeze' of the freight owners' funds, since it will be impossible to involve the goods into the economical turnover (sales) for the duration of such a period. Modern business is extremely time-sensitive because it aims at accelerating the capital turnover; thus, significant time expenditure will strongly undermine the interest in E40.

Inland water transportation is suitable for a highly limited range of cargoes, mainly bulked and project ones. Moreover, such cargoes (goods) need to meet several criteria in order to be involved in international shipping operations:

- to be highly liquid;
- to be actively involved in transborder trade;
- to be produced in significant volumes (hundreds, thousands and even millions of tonnes a year).

In Belarus, only few companies produce such goods whose shipping via E40 may have economic sense. Some of them are such producers as OAO “Belaruskali” (over 10 million tonnes of fertilizers a year), OAO “Mozyr Oil Refinery” (around 10 million tonnes of petroleum products a year), OAO “Granit” (16 million tonnes of crushed stone a year). In the long term, additional cargo traffic worth several million tonnes may be generated by “Slavkali” which has announced the construction of an ore-dressing and processing facility with the capacity from 1.1 to 2 million tonnes of potassium chloride, and also Petrikov Ore-dressing and Processing Complex (around 1.5 million tonnes of potassium chloride a year).

Furthermore, the majority of the country’s industrial companies are either not interested in E40 at all as a way of delivery, or cannot be involved in this route systematically.

E40 does not create any definite and indisputable advantages even for the shipping of the limited range of products which are fit for shipping by inland waters routes by their technical and economic characteristics.

In particular, the major end markets for Belarusian potassium fertilisers are geographically remote regions: China, India, South America, South-East Asia, and Australia.

The delivery of fertilisers by “river-sea” ships directly from the river ports to the end consumers in remote markets will most probably be at a significant disadvantage in terms of the cost price per cargo unit against shipping by large maritime dry cargo ships from the Baltic ports as it happens now.

The shipping of petroleum products has established logistics and product markets. Thus, according to Belstat, out of 8.34 million tonnes petroleum products which were exported by Belarus far abroad in 2016, 8.24 million tonnes were shipped to the EU, including 3.92 million tonnes to the Netherlands, and 3.1 million tonnes to Great Britain.

Also, such location of the key consumers has determined the delivery logistics through the ports of the Baltic countries. Obviously, such scheme is the most economically reasonable. Even the repeated attempts by Russia having a significant leverage as an oil supplier to Belarus to shift the routes in favour of the Russian ports, including offers of significant shipping discounts, have not changed the traditional routes.

The modification of E40 does not give any guarantee that this route will offer a more perfect and economically profitable logistics of petroleum products supply as compared to the existing one.

Thus, **one of the key risks of the E40 Project is the lack of possibility to attract such cargo volumes which would be enough to ensure the recoupment of at least current expenses on the river fleet and the infrastructure maintenance.**

E40 does not have any obvious advantages for transporting transit cargoes, so the plans for their mobilisation run the risk of not being implemented.

The authors of the project's feasibility study rely on active mobilisation of international container cargoes to this route, but we consider such expectations overrated.

According to the Container Trades Statistics, the yearly flow of the container cargoes delivered by water from Asia to Europe is more than 15 million 20-feet TEU containers. Moreover, the tendency of the last years has been the increase in the volumes of single delivery. It is carried out by container ships transporting more than 10 thousand containers at a time. At present, the Suez Canal comprising the water routes between Asia and Europe is able to pass container ships carrying up to 19 thousand TEU containers.

The freight enlargement is due to the intention to decrease expenditures per unit of transported cargo as well as to provide a competitive edge to the water delivery routes in comparison with the dynamically developing railway transporting.

The operators of international container shipping between China, South-East Asia and Northern Europe will not be interested in E40 due to a number of reasons.

Large container ships will not be able to take E40 due to their dimensions and draught restrictions. The transhipment of the cargo on ships of the type "river-sea" or "river" for further transportation via the inland water route towards the Northern Europe ports will entail additional time and financial losses. In doing so, the transhipment of the cargoes from one large container ship transporting conventionally 10 thousand TEU containers will require up to 100 river ships which are able to deliver just around 100 TEU containers at a time.

The transhipment with the consequent transporting of the cargo along the whole of E40 (more than 2,000 km) towards the Northern Europe ports will take around 20 days. A large container ship can skirt Europe by sea in a shorter term and come to the final destination port without the unnecessary section in the chain of delivery.

In a similar way, the logistics of the container cargo delivery between the countries of Northern Europe and the Middle East is in favour of the bypass sea route.

The E40 authors expect that the inland water route could be included into the intermodal chain of the delivery of the container shipped by railway transport from China to Europe. But this variant also seems hardly attractive for consignors and logistics operators as it will create an additional section in the delivery chain and increase the transit time.

At present, the distance between the China-Kazakhstan border and the Belarus-EU border is covered by a liner train in 6 days, while the way from the loading point in the inner regions of China to the point of unloading at the destination station in Europe is covered by train in 10 to 14

days. Moreover, the railway shipping operators claim that in the following years they will be able to reduce the time of transit by 20%.

The transportation of cargoes to the Northern Europe (Norway, Sweden, Finland) may require the transhipping onto water transport. In theory, it can be carried out at the E40 inland ports terminals, for instance, in Brest. In this case, the movement of the ship via the inland water route towards the Baltic Sea will require additional 5-6 days, while a liner train can arrive directly at the Baltic Sea marine port terminal for the marine ship transhipment which will help to avoid additional time waste on the way.

The risk of drawing cargoes from railway and automobile transport.

Given the limited possibilities to attract transit traffic, E40 will be filled by the cargoes which are now transported in the region by railway and automobile transport. According to the estimates of the first intermediate report "E40 Reconstruction" prepared by the Gdansk Maritime Institute, such an "interception" may be up to 20% of cargoes from railway transport and 10% from automobile transport.

According to the report by the Belarusian Railway, in 2015, its revenues from its primary activity were 1.65 million dollars, including cargo transportation which made up 77.6% of this amount, or 1.28 million dollars. This means that **if the cargo "interception" plans are implemented, the Belarusian Railway may lose 250 million dollars a year.**

The data on the automobile transportation proceeds are difficult to collect in view of a significant number of businesses and the absence of integrated statistics. Nevertheless, the approximate calculations can be made based on the data, according to which in 2015 cargo the automobile transportation turnover was 60.1% of the railway cargo turnover, or 24,522.7 million tonnes-km. On the basis of these numbers and also the fact that the fares on these two means of transport are similar, it is possible to conclude that the **automobile carriers may lose up to 80 million dollars a year.**

Given this scenario, the economic effect from creating jobs on the water transport and in its infrastructure will be zeroed by a possible decrease in jobs in the railway and automobile transportations and the deterioration of the economic indices of the transportation companies. We would like to note that today in Belarus, the railway and automobile transport, as well as the logistic processing of such cargoes, have engaged hundred thousands of people. Even small percentage staff reduction can well exceed the jobs created on the water transport.

The Belarusian Government is planning to have carried out a large-scale electrification of railways by 2030 so as to use the energy from the Belarusian Nuclear Plant at its most to use the electric motive power for the cargo delivery. Such plans are in sharp conflict with the perspective of drawing significant cargo traffic from the railway in favour of the water routes.

There is a risk of issuing compulsory directive decisions to use E40 in order to carry the goods made by certain major state-owned enterprises. Moreover, there is a high probability that the regulatory authorities striving to attract cargo onto E40 may give fare benefits on the inland

water delivery (a corresponding idea is in the project feasibility study). In this case, the transport-logistics branch will face the problem of the distorted competitive conditions, while the state budget will have to deal with significant additional expenses.

The recoupment of capital expenditures can hardly be seen whereas the multiplying effect of investments raises doubts.

As noted in the project feasibility study, in the foreseeable future there is no recoupment of capital expenditure of the arrangement of E40. One can only rely on the payback of the current costs on fleet operations and the infrastructure maintenance.

Within such conditions, the significant investments in this infrastructural project can only be justified if an explicit multiplying effect is achieved. At the same time, according to our estimates, the influence of E40 on the economy of the Brest and Gomel regions, and also Belarus as a whole will be insignificant due to several reasons:

- as a delivery channel, E40 has potential interest to a very limited number of businesses;

- even modernisation would not bring obvious advantages for consigners in terms of speed and transportation costs, and therefore will not be able to strengthen the competitiveness of the Belarusian products or significantly improve the economic performance of the enterprises that will take advantage of this delivery channel;

- goods carried by internal water routes (bulk and project ones) are least suitable to develop the supporting logistics and related services in terms of consolidation, warehousing, packaging, finalisation of goods, etc.;

- creation of new jobs in the water transportation industry under the conditions of goods “interception” will be offset by reduced jobs in road and rail transport.

It should be said about additional risks in the event of possible accidents on the E40 which can cause significant environmental and economic damage, especially in the case of the petroleum products transportation.

The factors of investment risk should also include the fact that the E40 prospects were sharply rejected by environmental organisations that declare their readiness to resist the project in every possible way, up to seeking to dismantle the infrastructure regulating the water level. This circumstance complements other economic risks of the E40 project making them unacceptably high.

Taking into account the aggregation of the factors, one can only guarantee a short-term economic effect for the period of the investments development and the infrastructure arrangement. In the medium and long term, the result from the implementation of this investment project can be zero or even negative. Such prospects do not correspond to the principles of sustainable development that should underlie the infrastructure projects.

Today, the section “Brest to Kherson” (Dnieper-Bug Canal, Pripyat, Dnieper) is completely navigable and can pass the barges of the 775 and 775A projects with a load capacity of up to 1,100 tonnes. By this indicator, barges are equal to trains and can transport various bulk cargoes: construction materials, rolled metal, timber, etc., and also project cargoes. Theoretically, one can even arrange the barge delivery of any general cargoes in containers.

According to the Belarusian River Shipping Company, as of January 1, 2017, this organisation runs 107 barges (775 and 775A projects), 16 units of the non-self-propelled fleet (barges) (187G project) with a load capacity of 350 tonnes, 51 towing boats 300 horse powers. However, the current fleet capabilities are not fully used since the majority of consigners do not show any

interest in the inland water delivery. Moreover, the section of E40 served a predominantly one industrial enterprise—the Republican Unitary Industrial Enterprise “Granit” producing the construction crushed stone.

So, today the Belarusian consigners prefer road and rail transport to internal water routes for various reasons which leads to a pretty reasonably question. Who can guarantee the E40 modernisation will make the majority of enterprises switch to river carriers? After all, such a modernisation will not fundamentally change the delivery conditions since it is basically aimed just at raising the water level to pass the vessels of higher load capacity.

Such a switch can only be guaranteed if use public administration leverages or through significant subsidisation of tariffs, which will contradict the market principles. The former may increase the costs and deteriorate the economic situation of consigners (industrial enterprises), the latter may increase the State treasury costs.

Comparison of turnover and State support volumes and for different modes of transport

Years	**Transport**	**Turnover (million tonnes per km)**	**State support amount (million USD)**
2013	rail	43,818	5.3
	road	25,603	2.9
	inland waters	84	4.3
2014	rail	44,997	5.4
	road	26,587	4.0
	inland waters	49	4.4
2015	rail	40,785	4.2
	road	24,523	2.7
	inland waters	21	3.1

Due to its lower competitiveness, water transport is the most subsidised industry per unit of cargo. According to the report on the execution of the State budget for 2015, the water transport was subsidised in the amount of 50.9 billion Belarusian roubles (5.09 million Belarusian roubles after the redenomination (BYN)), or USD 3.1 million under the National Bank’s average annual rate, which is more than the State support of the road transport (44.2 billion, or BYN 4.42 million), and is comparable to the same of the railway transport (68.5 billion, or BYN 6.85 million)).

In 2015, the specific budget subsidies for river shippers amounted to 2.5 billion Belarusian roubles (BYN 0.25 million) per 1 million tonnes-km turnover, which is almost 1.5 thousand times more (!) than the same for the road or rail transport that was subsidised 1.8 million Belarusian roubles (BYN 180) and 1.7 million Belarusian roubles (BYN 170) per 1 million tonnes-km turnover.

Given such a huge subsidisation, the redistribution of goods flows in favour of the E40 may entail merely one “multiplying effect” for the country—a significant increase in the annual budget expenditures.

The governments and institutional investors have the opportunity to focus on other, more efficient transport projects.

In our opinion, the inland water goods transportation has faced systemic non-competitiveness against railway and road transportation. Whereas roads and railways were developing, rivers and canals have lost their historical transportation importance, which should be regarded as a natural course of the industry transformation.

Significant capital expenditure, high investment risks and negative environmental consequences raise doubts about the feasibility of the E40 modification and modernisation.

We think that the Government and investors should accept the dying role of inland water routes, and focus primarily on further improving the road and rail logistics that has already created hundred thousands of jobs and whose importance for sustainable economic development cannot be overestimated.

The most promising projects that are of high importance for the development of cross-border trade include:

- The project to modernise the State border crossings and customs terminals. This is the key challenge to create barrier-free conditions in the movement of goods between the EU and the EEA, as well as the EU and the Asian countries. Unfortunately, the borderline is still crammed with queues of cars and trucks, and all the customs procedures, including customs clearance, can take up to two days. The transportation can be accelerated using the modern customs and logistics terminals;

- To modernise the existing and to construct new highways, and to increase their speed limits;

- To modernise the railways in order to increase the trains capacity and speed, as well as to electrify the railways and to develop the rail transportation of goods, including container trains, in the direction “China—Western Europe—China” within the ‘New Silk Road’ project.

- To improve the logistics infrastructure adapted for the processing of goods involved in the cross-border trade.

Since the goals of sustainable development can be only achieved by actively involving small and medium businesses, one should pay special attention to the development of regions and the support of private initiatives there.

Belarus and institutional investors have already accumulated positive experience in the development of transport and logistics infrastructure.

The EU investments helped to have modernised the border infrastructure. The World Bank financed the reconstruction of the M5 highway from Minsk to Gomel. Furthermore, they assisted to commence the modernisation of the M6 highway from Minsk to Grodno. The European Bank for Reconstruction and Development announced its readiness to invest in the modernisation of the M-10 highway (the border of the Russian Federation—Gomel—Kobrin).

The Asian Development Bank and the Chinese Silk Road Fund are ready to act as financial donors within the New Silk Road project.

The total budget of the projects listed above is estimated at several billion dollars. It is their implementation that should be necessarily focused on by the Government in order to achieve a positive and lasting effect for the country’s economy.