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LAPPEENRANTA UNIVERSITY OF TECHNOLOGY

LUT School of Industrial Engineering and Management  
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7

Lea Hannola (Ed.)

### GUIDEBOOK TO FINANCING INFRASTRUCTURE FOR TRANSPORT AND LOGISTICS WITHIN THE NORTHERN DIMENSION (FIND)

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Lappeenranta  
University of Technology

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**GUIDEBOOK TO FINANCING INFRASTRUCTURE  
FOR TRANSPORT AND LOGISTICS  
WITHIN THE NORTHERN DIMENSION (*FIND*)**

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Olga Novikova, Olga A. Patokina, Raivo Portsmuth, Victor Sergeev, Peter Sytsko,  
Riitta Turkia, Andrey Vinogradov, Alena Volskaya and Regina Vostrova.**

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## Foreword

The main objective of this guidebook is to examine the financial instruments **available within the Northern Dimension area for financing projects of cross-border transport and logistics infrastructure and to develop guidelines for a co-financing mechanism**. The guidelines assist the members, project managers and project promoters of the Northern Dimension Partnership on Transport and Logistics (NDPTL) in applying the financial instruments that pull together the EU and national public and private funding, and to increase the successful implementation of the projects.

The guidelines have been developed with the objective of enhancing the planning of cross-border projects and improving the implementation of transport infrastructure policies, as well as increasing knowledge concerning fund raising. Special attention is paid to:

- 1) instruments available for **cross-border cooperation** projects,
- 2) **public-private partnerships** (PPP), and
- 3) financial models applicable in **Russia and Belarus**.

The research has been conducted in cooperation between the Northern Dimension Institute (NDI) and the Northern Dimension Partnership on Transport and Logistics (NDPTL). The research has been financed with resources from the Norwegian Ministry of Foreign Affairs. The main contributions for this Guidebook have been made by six partners from Belarus, Estonia, Finland, Germany and Russia. Thus, the authors of the Guidebook are:

- Belarus: Regina Vostrova, Peter Sytsko, Olga Novikova and Alena Volskaya from the Belarusian State University of Transport (BelSUT)
- Estonia: Raivo Portsmouth and Kaidi Nõmmela from the Estonian Maritime Academy
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Lappeenranta, April 22, 2013

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## Executive summary

The main traditional sources to financing infrastructure for transport and logistics include allocations from national and EU budgets, domestic and foreign loans, and official development assistance. International funding is of a particular interest and can play an important developmental and dynamic role. In recent years, governments have found it very difficult to meet the funding needs of transport and logistics infrastructure and have tried to diversify the sources of finance. The public-private partnerships (PPP) have played an important role in this process, as well as the financial instruments of the capital markets. This particular guidebook concentrates on transport and logistics infrastructure projects within the Northern Dimension Area, especially on financing instruments available in Estonia, Finland, Germany, the Republic of Belarus and Russia.

*In Estonia*, there are a number of funds in use to finance infrastructure projects. National funds contain Central Government and local government funds from the state budget and money received from local taxes. Regional funds include cross-border programs, the Trans-European Transport Network program (TEN-T) and other programs which are co-financed by the European Union with the aim of promoting and developing regional cooperation. The funds of the European Union are the Cohesion Fund and European Regional Development Fund. International Financial Institutions are the European Investment Bank, the European Bank for Reconstruction and Development, and the Nordic Investment Bank. In addition, there are also private investors who invest their private money in infrastructure projects.

The models of financing infrastructure projects are complex systems including different actors and financial flow patterns. *In Estonia*, the main models of financing infrastructure projects are the financing model of EU finances, the direct public funding model, Public-Private Partnership (PPP) models, and the private investment model. The use of PPP in transport and logistics infrastructure projects is relatively low. Estonia does not have any policy and guidance documents in order to use PPP for project financing, either. The PPP projects can be seen as a co-operation between the public and private sector using a company owned by the state, a so-called state-owned joint-stock company. Such companies operate and manage independently, but 100% of the stocks are owned by the state.

*In Finland*, road maintenance is mainly financed from the state budget. National programs are significant financial sources, for which the public financing comes from the structural fund of the EU via the state and municipalities. The projects are partly financed by a national fund via the Centre for Economic Development, Transport and the Environment. The EU supports the Finnish route design and building with grants of the Trans-European Networks – Transport (TEN-T) for large projects and the European Regional Development Fund (ERDF) for smaller projects. The function of the TEN-T margins is to cover the transportation network in Europe, ensure the mobility of goods and offer high-quality infrastructures. Other EU-supported sources are the cross-border program European Neighbourhood and Partnership Instrument (ENPI), which is managed by Regional Councils in Finland and the European Neighbourhood program (ENI). In addition, the European Investment Bank (EIB) plays a significant role in financing highways, and offers loans for long-term capital investment projects and long-term loans up to 20 years. The Nordic Investment Bank (NIB) offers long-term loans and guarantees to clients in public and private sectors. Loans are released to municipalities, cities and the private sector.

The International Public-Private Partnership -model - the Finnish name for the model is “life-cycle model” – is also called a post financing model and a private financing model, such as the Private Finance Initiative (PFI). There are several infrastructure projects in Finland implemented with PPP or life-cycle principles. The PPP -model has been developed for the implementation of large infrastructure projects. The public sector procures infrastructure for use through service contracts. The private sector implements the designing and building with the financing they have obtained. There is also a responsibility to take care of maintenance for even tens of years, when in conventional projects this is normally two years. The private service provider will receive payment from the public participant as service payment during the contract period. In addition, the Alliance model is suitable for large infrastructure projects, and the first project in Europe implemented by the Alliance model is the Lielähti-Kokemäki rail reconstruction initiative in Finland.

*In Germany*, there is a "hierarchy" in the responsibility for financing and maintenance of all public infrastructures (without airports): Federal Republic, Federal States, Regions, and Municipalities. The amount of direct public funding depends on the size of the annual federal budget. The German Federal Government is, in accordance to the national

constitution, responsible for the construction and maintenance of the federal transport routes (road, rail and waterways). The Government has assigned a part of these responsibilities to the Transport Infrastructure Financing Company (VIFG). The basis for the development and expansion of the transport infrastructure is the Federal Transport Plan (Bundesverkehrswegeplan – BVWP). It contains all envisaged road, rail and waterway projects and provides priorities. The BVWP is merely a frame program and planning instrument, which is neither a financing plan nor a legislative act. In contrast to other countries, the potentials of PPP are mainly unused in Germany.

Funding under the European Fund for Regional Development (EFRD) and respectively the European Cohesion Fund for road infrastructure is possible in Germany for economically less developed regions. In addition, co-financing of the construction of railway infrastructure by TEN-projects, EFRD and the European Cohesion Fund is possible.

*In the Republic of Belarus*, the main sources of finance are the own funds of organizations (41 %), the Belarusian bank credits (27 %), and the state funds (16 %). Belarus attracts investors to finance investment projects in the development of logistics infrastructure, providing significant benefits, which are supported by the legal framework of the Republic of Belarus (The Investment Code of the Republic of Belarus; Presidential Decree of August 7, 2012 № 357). However, these financial instruments are currently developing. The development projects of the transportation systems, including railway transport are financed by the national budget and the state debt.

*In Russia*, there is a variety of sources for financing infrastructure development projects. The Federal budget is a regular and main source for the maintenance and development of transport and logistics infrastructure. Federal budget financing of large-scale projects that are significant for national economy is handled by the Federal Investment Fund, which also co-finances the projects initiated by regional governments and arranged as Public Private Partnerships.

Another source for financing infrastructure development projects is Russian development financial institutions, such as the Bank for Development “Vnesheconombank” (VEB) and “Vneshtorgbank” (VTB). These institutions carry out multiple functions in the implementation of the large-scale infrastructure projects. In addition to providing loan financing for projects, they often initiate founding of consortiums that are designed to take the role of a strategic investor in large-scale



infrastructure projects. These consortiums are built up in partnership with leading construction and service companies. Within such consortiums, the development financial institutions are responsible for attracting money from domestic and foreign financial markets, finding sources of expertise for elaboration of the investment projects, and provision of consulting services needed through the full life cycle of the project. International financial institutions like the European Bank of Reconstruction and Development (EBRD), the World Bank and its International Financial Corporation (IFC) also increase funds available for large-scale infrastructure projects.

The Russian Direct Investment Fund created by the Russian Government to attract foreign capital for investments in Russian economy, as well as other direct investment foundations constitute a third source for financing infrastructure development projects.

The traditional model of direct budget financing associated with non-efficient procedures for public procurement does not enable effective and efficient implementation of infrastructural projects. Therefore, PPP is considered in Russia as a much more appropriate financing and implementation model that has strong potential to accelerate the investment process, to increase its efficiency, and ultimately improve the quality of service provided by the constructed objects of infrastructure. PPP is a relatively new instrument of implementing investment projects in Russia. The existing experience of using PPP has already revealed the advantages and pitfalls in the elaboration and implementation of PPP projects. Currently, a lack of sound legislation and shortage of competences needed to structure investment projects in a manner attractive for private investors seem to be the main obstacles to further expansion of practicing PPP in the development of transport and logistics infrastructure.

The Transport Strategy of the Russian Federation for the Period of 2030 assumes that by 2030 the non-budget sources will cover 60% of total investments into infrastructure development. However, only a limited number of private companies invest in transport infrastructure at the moment because of the extremely long payback time (very low return on investment). The investing companies are mostly state-owned or state-controlled monopolies (Russian Railways, Gazprom, Transneft), large companies in raw-material industries (Lukoil), and leading container and oil product terminal operators (Global Ports).

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## ABBREVIATIONS

ASI	Agency for Strategic Investments
BeISUT	Belarusian State University of Transport
BMVBS	German Federal Ministry of Transport, Building and Urban Affairs
BR	Belarusian Railways
BSTDB	Black Sea Trade & Development Bank
BVWP	Bundesverkehrswegeplan (Federal Transport Plan)
CIB	Corporate Investment Banking
CIS	Commonwealth of Independent States, including the Russian Federation
CEF	Connecting Europe Facility
CF	Cohesion Fund
DCM	Debt Capital Market
ECM	Equity Capital Market
EBRD	European Bank for Reconstruction and Development
EDB	Eurasian Development Bank
EIA	Environmental Impacts Assessment
EIB	European Investment Bank
EVB	Eisenbahnen und Verkehrsbetriebe Elbe-Weser (railway company)
ENI	European Neighbourhood Instrument
ENPI	European Neighbourhood and Partnership Instrument
ENPI CBC	European Neighbourhood and Partnership Instrument Cross-Border Cooperation
ERDF	European Regional Development Fund
EU	European Union
FCPF	Federal Center for Project Finance
FIND	Financing Infrastructure for Transport and Logistics within the Northern Dimension
GDP	Gross Domestic Product
GDR	Global Depositary Receipts
GNI	Gross National Income
GSOM	Graduate School of Management, St. Petersburg University

IB	Infrastructure Bonds
IFC	International Finance Corporation
IFI	International Financial Institution
IPO	Initial Public Offering
ISL	Institute of Shipping Economics and Logistics (Bremen)
JASPERS	Joint Assistance to Support Projects in European Regions
LSE	London Stock Exchange
MICEX	Moscow International Currency Exchange
MICEX –RTS	Moscow Stock Exchange
MRIF	Macquary Renaissance Infrastructure Fund
NCG	Northern Capital Gateway Ltd - private partner in PPP for reconstruction, building, financing and operating «Pulkovo Airport» in St. Petersburg
NCHW	Northern Capital Highway Ltd – private partner in PPP for building, financing and operating «Pulkovo Airport» in St. Petersburg
NDI	Northern Dimension Institute
NDPTL	Northern Dimension Partnership on Transport and Logistics
NIB	Nordic Investment Bank
NORDI	Northern Dimension Research Centre
NPV	Net Present Value
NRU HSE	National Research University Higher School of Economics (Moscow)
NWCC	Northern-West Concession Company Ltd - private partner in PPP for building, financing and operating the toll highway Moscow-St. Petersburg
PFI	Private Finance Initiative
PPP	Public-Private Partnerships
RDIF	Russian Direct Investment Fund created by the Government of the Russian Federation to attract foreign capital on the principle of co-financing, operates as a 100% subsidiary of VEB
RFID	Radio Frequency Identification
RTS	Russian Trading System

SPV (SPC)	Special Purpose Vehicle (Special Purpose Company) - company established by investors for the implementation and financing an investment project
TEN-T	Trans-European Networks – Transport
TEU	Twenty-foot Equivalent Unit
UAE	United Arab Emirates
UN	United Nations
VAT	Value added tax
VEB	State Corporation “Bank for Development and Foreign Economic Affairs (Vnesheconombank)”
VIFG	Transport Infrastructure Financing Company
VTB	Joint stock company, one of the biggest commercial banks in the Russian Federation
VTBC	VTB Capital S.A. - a subsidiary of JSC VTB, joining the investment business of the VTB Group
VTB Group	Financial group under the guidance of «Vneshtorgbank»
WHSD	West High-Speed Diameter





## **1 Financial instruments for infrastructure projects in the Northern Dimension Area**

Joachimsen [1] defines that infrastructure is the sum of the physical, institutional and personnel installations and conditions, which are available for economical units to make possible the equalization of the remuneration for equal contributions of economical factors at appropriate allocation of the resources, i.e. total integration and economic activity on the highest possible level.

The physical infrastructure can be divided into energy supply, telecommunication, water supply and saving the environment, transport (roads and bridges, railways, waterways and ports), social infrastructure such as schools and hospitals, administration buildings, residential buildings, and other infrastructure, e.g. defense [2]. This guidebook concentrates on transport and logistics infrastructure projects within the Northern Dimension Area.

According to UNECE [3], there are many different sources of finance, but it is important to differentiate between national and international funds. The funding procedures can become considerably complicated if high levels of inflation and problems of convertibility prevail in a particular country.

International funding is of a particular interest and can play an important developmental and dynamic role. The sources can be very different, but the most commonly used ones can be grouped into the following categories [3]:

- Loans from consortium of banks
- International capital markets (shares, bonds, etc.)
- Assistance and (soft) loans from other governments
- Loans, grants and guarantees from international institutions (European Investment Bank, European Bank for Reconstruction and Development, etc.)
- Assistance provided by international organisations (various United Nations and European Union funds)

In many countries, there is a gap between the demand of necessary financial means needed for the construction, reconstruction and maintenance of transport infrastructure, and the budgets of the public bodies established for these purposes. Thus, a number of countries use non-public sources for financing their transport infrastructure. Asian countries have developed additional sources for financing their infrastructure projects [4]:

- Domestic Banking System: a number of Asian countries, esp. China, finance larger infrastructure projects by borrowing the needed money from domestic banks.
- Use of Foreign Exchange Reserves: many countries in Asia use their foreign exchange reserves for financing infrastructure projects, at least partly.
- Foreign Direct Investment: in the Asian and Pacific region the share of foreign direct financed infrastructure projects in 1997 peaked at a share of 6.2% of the total gross formation. It fell to 4% during the economic crisis.
- Debt Markets: some countries in the region have developed bond markets in order to reduce their dependency on banks. The Asian Development Bank promotes bond markets.

### 1.1 International Financial Institutions

**The Black Sea Trade & Development Bank (BSTDB)** is an International Financial Institution established by Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Turkey, and Ukraine. The bank supports economic development and regional cooperation by providing trade and project financing, guarantees, and equity for development projects supporting both public and private enterprises in the member countries. (see Black Sea Trade & Development Bank, [www.bstdb.org](http://www.bstdb.org), 2013)

**The Eurasian Development Bank (EDB)** is an international financial organization established to promote economic growth in its member states, to extend trade and economic ties between them, and to support integration in Eurasia. The founding members of the bank are the Russian Federation and the Republic of Kazakhstan. The Republic of Armenia, the Republic of Tajikistan, the Republic of Belarus and the Kyrgyz Republic are also members of the bank. (see Eurasian Development Bank, [www.eabr.org/e/](http://www.eabr.org/e/), 2013)

**The European Investment Bank (EIB)** is the financing institution of the European Union, created by the Treaty of Rome in 1958 to provide long-term finance for projects promoting European integration [5]. EIB plays a crucial role in the development of the TEN-T by offering various instruments, such as loans, risk capital, guarantees, and facilitating instruments (see European Parliament, 2007; [www.eib.org](http://www.eib.org)).

**The European Bank of Reconstruction and Development (EBRD)** is a European public-policy bank established in 1991. It has a strong private-sector focus, primarily to assist transition of countries to open market economies. It operates from central Europe and the Western Balkans to central Asia. The bank is owned by 61 countries, the EU and the EIB. (see European Parliament, 2012; [www.ebrd.com](http://www.ebrd.com))

**The International Financial Corporation (IFC)** is a member of the World Bank Group, and it is the largest global development institution focused exclusively on the private sector in developing countries. IFC was established in 1956, and it is owned by 184 member countries, a group that collectively determines IFC's policies. IFC operates in more than a 100 developing countries, enabling companies and financial institutions in emerging markets to create jobs, generate tax revenues, improve corporate governance and environmental performance, and contribute to their local communities. (see [www1.ifc.org](http://www1.ifc.org), 2013)

**The Nordic Investment Bank (NIB)** finances projects that strengthen competitiveness and enhance the environment. The Bank offers long-term loans and guarantees on competitive market terms to its clients in the private and public sectors. NIB is an international financial institution owned by Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden (see Nordic Investment Bank, 2012; [www.nib.int](http://www.nib.int)).

**The World Bank** is a source of financial and technical assistance to developing countries around the world. The World Bank was established in 1944 and is headquartered in Washington, D.C. The World Bank comprises two institutions managed by 188 member countries: the **International Bank for Reconstruction and Development (IBRD)** and the **International Development Association (IDA)**. The aim of the IBRD is to reduce poverty in middle-income and creditworthy poorer countries, while IDA focuses exclusively on the poorest countries in the world. Both institutions are part of a larger body known as the World Bank Group. ([www.worldbank.org](http://www.worldbank.org), 2013)

## 1.2 Finance of transport infrastructure in the EU

According to the SPC Denmark [6], the main traditional sources of funding for transport infrastructure include allocations from national and EU budgets, domestic and foreign loans, and official development assistance, such as Structural and Cohesion Funds. In recent years, governments have found it very difficult to meet these funding

needs and have tried to diversify the sources of finance. The public-private partnerships have played an important role in this process, as well as the financial instruments of the capital markets.

All existing public and private capital for funding the infrastructure contains a variety of financial tools that can be applied for maintaining a competitive transport system, such as the Trans-European Networks - Transport (TEN-T) programme in cooperation with the financial instruments of the European Investment Bank, and financing and co-financing of the EU Structural and Cohesion funds of the EBRD [6].

Table 1 summarises the EU funds and investment needs in the area. The World Bank estimates that investment of about 7% of GDP annually is required for transport infrastructure in developing countries. In developed countries, the investment is less, about 4% of GDP per year<sup>1</sup>. In general, there is a significant shortfall in infrastructure investment in many countries [6].

**Table 1.** EU funds and investment needs in the EU area [6].

Available public funds and investment needs			
EU programme	Year	Budget (€)	Costs of completion (€)
TEN-T	2008	nearly 1 billion	-
TEN-T	2007 - 2013 2007 - 2020	-	300 billion 600 billion
Structural funds ( <i>not only for transport needs</i> )	2007 – 2013	277 billion	-
Cohesion funds ( <i>not only for transport needs</i> )	2007 – 2013	70 billion	-
Available resources from financial institutions and private investors			
Bank	Year	Budget (€)	Costs of completion (€)
EIB ( <i>already provided</i> )	2003-2007	45 billion of loans	-
EIB	2008-onwards	1 billion loan guarantee scheme	-
EBRD ( <i>already provided</i> )	1992-2004	3.5 billion	11.2 billion
Private investors	2008-onwards	expecting 130 billion	-

**The Cohesion Fund (CF)** finances strategic investments in transport, with the aim of developing and improving the accessibility and safety of public transport infrastructure [7]. The Cohesion Fund is aimed at member states whose Gross National Income (GNI) per inhabitant is less than 90% of the Community average. It serves to reduce their economic and social shortfall, as well as to stabilize their economy. It supports actions in the framework of the Convergence objective.

For the period 2007-2013, the Cohesion Fund concerns Bulgaria, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. The Cohesion Fund finances activities under the following categories:

- a. trans-European transport networks, notably priority projects of European interest as identified by the Union;
- b. environment; here, the Cohesion Fund can also support projects related to energy or transport, as long as they clearly present a benefit to the environment: energy efficiency, use of renewable energy, developing rail transport, supporting intermodality, strengthening public transport, etc. [8]

**The European Regional Development Fund (ERDF)** finances the development of regional transport infrastructure investments, designed to ensure access to the TEN-T network, ensure connections between the center and periphery, and to develop regional public transportation [7]. The European Regional Development Fund and the European Social Fund form the European Structural Funds.

The European Union finances several projects and programs. The EU funds are a significant source of financing infrastructural projects. For example in the current 2007-2013 budgetary period the EU offers 8 billion euros of **Trans-European Networks – Transport (TEN-T)** funding to develop the transport infrastructure. The fund is targeted at a special purpose and it may create financing for other opportunities. Some EU-support is paid by the regional authorities and some have to be applied for directly from the European Commission. The funding is provided for local projects in the European Union that will support the development of the transport infrastructure. [9]

The European commission accepted a proposal for a financial framework of many years - **the Connecting Europe Facility (CEF), on 29th June 2011**. The CEF for the period 2014-2020 will put European funding including transport infrastructure on a solid and coherent basis for a longer term [10].

More about “A pilot for the Europe 2020 Project Bond Initiative” is readable at: [http://ec.europa.eu/economy\\_finance/financial\\_operations/investment/europe\\_2020/documents/sec2011\\_1237\\_en.pdf](http://ec.europa.eu/economy_finance/financial_operations/investment/europe_2020/documents/sec2011_1237_en.pdf). More about EU-grants can be found on the web page [http://ec.europa.eu/transport/facts-fundings/grants/index\\_en.htm](http://ec.europa.eu/transport/facts-fundings/grants/index_en.htm).

### 1.3 Finance of transport infrastructure in Russia

The main sources for financing investment projects in Russia are the budgets of different levels (Federal, regional, i.e., subject of the Federation, and local, i.e. municipal), which are aimed at developing transport and logistics infrastructure. The Russian **Direct Investment Fund (RDIF)** was founded in 2011 to invest in leading companies of the fastest growing and the most prospective sectors of economy. In addition, there are two main suppliers of funds for large-scale infrastructure projects in Russia. They are the state corporation “**Bank for Development and Foreign Economic Affairs (Vnesheconombank)**” (**VEB**) and the financial holding **VTB Group**. The open joint-stock company VTB Bank (JSC VTB Bank, VTB is an abbreviation for Vneshtorgbank), one of the biggest in the country, is a strategic Russian bank which has built an international financial group (a unique international network among Russian banks, with over 30 banks and financial companies in 19 countries worldwide). Both banks are owned by the Government of the Russian Federation, and perform thus as agents of the Federal Government in different fields of the economy, particularly in infrastructure development.

The list of International Financial Institutions acting in Russia is expanding. Now they are represented not only by the **European Bank of Reconstruction and Development (EBRD)**, the **World Bank** and its **International Financial Corporation (IFC)**, but there are a number of newcomers, among which the most remarkable are the **Eurasian Development Bank (EDB)**, the **Nordic Investment Bank (NIB)** and the **Black Sea Trade & Development Bank (BSTDB)**. Various private investment funds have also started their operations in Russia in the last two years.

The funds of the European Union have not been widely used in the Russian Federation yet. Some large-scale projects of logistics infrastructure development are expected to be partly financed with loans provided by the EBRD.

#### 1.4 Public-Private Partnership

As the **Public-Private Partnership (PPP) model** can be interpreted in many ways, the current study focuses on previous studies of PPP in order to understand the nature of PPP better. Analyses of the Public-Private Partnership models in financing transport and logistics infrastructure have caused a lot of confusion. PPP is a complex scheme, which has its advantages, but the implementation may be quite complex. The PPP model has been studied repeatedly, with varying results. Some results of studies on the nature of the PPP in general are presented below.

According to the Canadian Council for Public-Private Partnerships [11], PPP is a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.

The European Commission [12] has identified four principal roles for the private sector in PPP schemes:

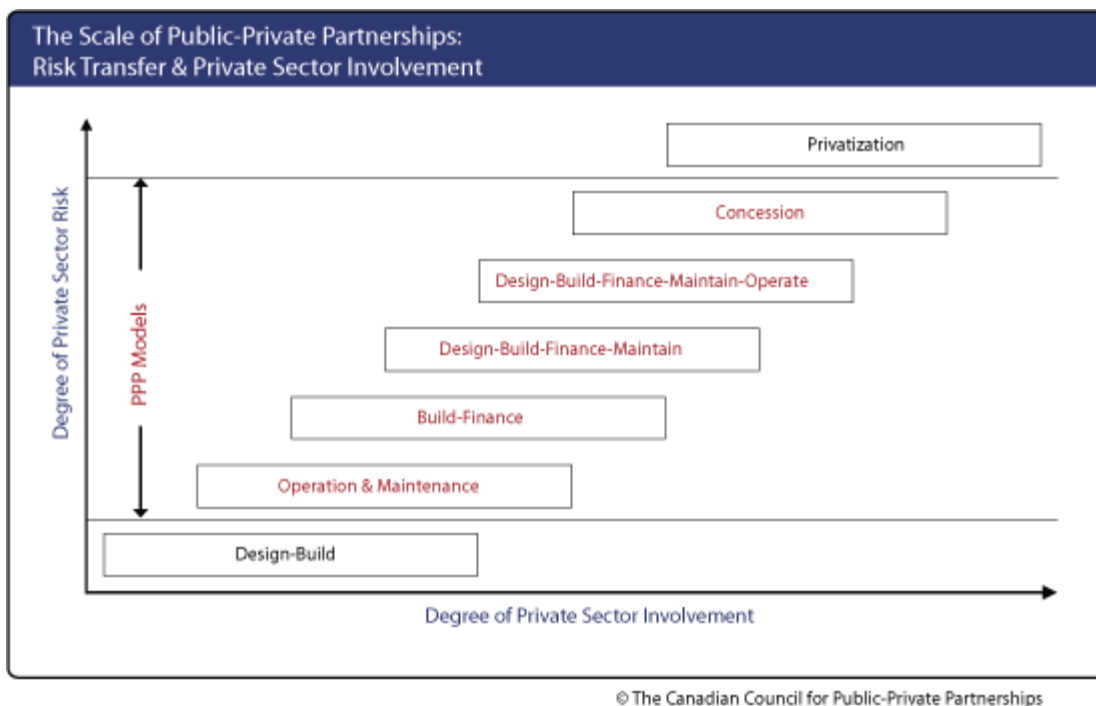
- to provide additional capital
- to provide alternative management and implementation skills
- to provide value added to the consumer and the public at large
- to provide better identification of needs and optimal use of resources

There are a number of different models of Public-Private Partnerships [11], see Figure 1:

- **Design-Build (DB):** the private sector designs and builds infrastructure to meet public sector performance specifications, often for a fixed price, and thus the risk of cost overruns is transferred to the private sector.
- **Finance Only:** a private entity, usually a financial services company, funds a project directly or uses various mechanisms, such as a long-term lease or bond issue.
- **Operation & Maintenance Contract (O&M):** a private operator, under contract, operates a publicly-owned asset for a specified term. Ownership of the asset remains with the public entity.
- **Build-Finance:** the private sector constructs an asset and finances the capital cost only during the construction period.



- Design-Build-Finance-Maintain (DBFM): the private sector designs, builds and finances an asset and provides hard facility management (hard fm) or maintenance services under a long-term agreement.
- Design-Build-Finance-Maintain-Operate (DBFMO): the private sector designs, builds and finances an asset, provides hard and/or soft facility management services as well as operations under a long-term agreement.
- Build-Own-Operate (BOO): the private sector finances, builds, owns and operates a facility or service in perpetuity. The public constraints are stated in the original agreement and through on-going regulatory authority.
- Concession: a private sector concessionaire undertakes investments and operates the facility for a fixed period of time, after which the ownership reverts back to the public sector.



**Figure 1.** Scale of Public-Private Partnerships. (Canadian Council for Public-Private Partnerships, [11])

The key benefits of PPP as presented in the European Commission 2003 Guidelines to Successful PPP [12] are:

- Acceleration of infrastructure provision
- Faster implementation
- Reduced whole-life costs
- Better risk allocation
- Better incentives to perform
- Improved quality of services
- Generation of additional revenues
- Enhanced public management

The models of PPP are complicated systems, and it takes time to learn how to use them. However, PPP has several advantages which make it useful, and therefore it should be used more in transport and logistics infrastructure projects.



## **2 Financing instruments in Estonia**

### **2.1 Introduction**

Estonia is located in northeastern Europe by the Baltic Sea. The transport and logistics sector has always been essential to the Estonian economy because there has been an important transit corridor for east-west cargo flows. The transport and logistics infrastructure has developed well in recent years, but there are still several bottlenecks and barriers in the development and financing of infrastructure projects.

The Estonian transport system comprises rail, road, sea, river and air transport as well as carriage by pipeline. The infrastructure of national transport has generally been well established. Due to high competition, the local logistics and transport companies have reached western standards in terms of service and quality and have great transport potential [1].

The operation services in Estonia are mostly provided by private enterprises. Sea transport, air traffic and most of the rail transport is provided by private enterprises. The major national transport enterprises include AS Tallinna Lennujaam (Tallinn Airport Ltd), AS Tallinna Sadam (Port of Tallinn Ltd), AS Elektriraudtee (Electrical Railways) and AS Eesti Raudtee (Estonian Railways) [1].

According to ECORYS Nederland BV [2], the aim of the national strategy of transport is to promote the competitiveness of a national transport service in the international market and to influence the development of the transport sector by considering the harmonious development of the state as a whole. The preconditions for implementing the tasks are a high quality infrastructure, combined use of all modes of transport, and the universality of all components.

In road transport it is important to ensure smooth transport connections inside the EU by organizing inland roads to have good access to the trans-European transport network, and improving the road safety. Reconstructing connections with regional infrastructure networks, reconstruction of existing roads and improvement of the traffic system will help to increase the traffic safety [2].

In Estonia, the financing infrastructure is regulated in a rather complex way. The main legislation regulating the financing and developing of transport infrastructure in Estonia includes:

- Energy Act
- Electricity Market Act

- Commercial Code
- Law of Obligations Act
- Law of Property Act
- Public Procurement Act
- Environmental Code
- Waste Act
- Railways Act
- Merchant Shipping Act
- Port Act
- Property Reform Act
- Privatization Act
- Land Reform Act
- Law of the General Part of the Civil Code
- Inheritance Act
- Securities Market Act
- Central Registry of Securities Act
- Law on Investment Funds
- Credit Institutions Act
- Development Fund Act
- Money Laundering and Terrorist Financing Prevention Act
- Insurance Activities Act
- Financial Supervision Authority Act

## **2.2 Estonia as a transit country**

The transit sector is one of the most important sectors in the Estonian economy, and in order to make it more efficient, it is important to develop a high quality transport and logistics infrastructure.

The Estonian transport and logistics companies are well-developed. According to the Estonian Development Fund [3], the Estonian transport infrastructure and transportation companies are able to cover far more than only their own country's transport demands. Tens of millions of tons of transit goods have been transported through Estonia for more than 700 years.

In Estonia, the goods are mostly delivered to the harbours of Muuga, Tallinn, Paldiski, Kunda or Pärnu, or taken by road transport to other European countries via Latvia, mostly by using the Tallinn-Ikla road, or delivered to Russia by the Tallinn-Luhamaa and Tallinn-Narva roads. The goods in transit are mainly (~90%) organized in a multi-modal transport chain (ship-train or train-ship) [1].

The location of Estonia is in the hub of several major transportation corridors. In Estonia, the main internal transport corridors are:

- Tallinn- Narva
- Tallinn- Pärnu
- Tallinn- Tartu
- Tartu-Jõhvi

The main international transport corridors through Estonia are (Ministry of Economic Affairs and Communications):

- Via Baltica (Helsinki- Tallinn- Pärnu- Riga- Warsaw)
- Via Hanseatica (St. Peterburg- Narva- Jõhvi- Tatra- Valga- Riga- Gdansk- Berlin- Hamburg)
- Via Vironia (Stockholm- Tallinn- St. Peterburg)
- Via Estica (Stockholm- Tallinn- Tartu- Moscow)
- Rail Baltica (Helsinki – Tallinn – Riga – Kaunas – Warsaw and continuing on to Berlin)

Figure 2 is an illustration of the main international transport corridors through Estonia. Almost all these corridors pass through the capital of Estonia.



**Figure 2.** The main international transport corridors through Estonia (modified by the authors).

Estonia has a number of border checkpoints that allow movements of international transport. Table 2 presents the international border checkpoints in Estonia. There are three checkpoints open to international road traffic. All these checkpoints are on the Russian-Estonian border. For international rail traffic, two checkpoints are in use - the Narva and Orava checkpoints.

The large share of international and transit trade confirms the good geopolitical position of Estonia, which favors goods and passenger traffic between east and west. Transit is a useful activity for a country, as it ensures employment of people and tax revenues, and the reputation of the state is enhanced [3].

**Table 2.** International border checkpoints in Estonia [4]

Checkpoints	
Open to road traffic: <ul style="list-style-type: none"> <li>• Koidula checkpoint</li> <li>• Luhamaa checkpoint</li> <li>• Narva-1 checkpoint</li> </ul>	Open to rail traffic: <ul style="list-style-type: none"> <li>• Narva railway checkpoint</li> <li>• Orava railway checkpoint</li> </ul>
Open to sea and internal water traffic: <ul style="list-style-type: none"> <li>• Dirham checkpoint</li> <li>• Heltermaa checkpoint</li> <li>• Kunda checkpoint</li> <li>• Lehtma checkpoint</li> <li>• Loksa checkpoint</li> <li>• Miiduranna checkpoint</li> <li>• Muuga checkpoint</li> <li>• Mõntu checkpoint</li> <li>• Narva-Jõesuu checkpoint</li> <li>• Paldiski-1 checkpoint</li> <li>• Paldiski-2 checkpoint</li> <li>• Praaga checkpoint</li> <li>• Pärnu-2 checkpoint</li> <li>• Rohuküla checkpoint</li> <li>• Roomassaare checkpoint</li> <li>• Saaremaa harbour checkpoint</li> <li>• Sillamäe harbour checkpoint</li> <li>• Tallinn-2 checkpoint</li> <li>• Tallinn-3 checkpoint</li> <li>• Tallinn-4 checkpoint</li> <li>• Tallinn-5 checkpoint</li> <li>• Tallinn-8 checkpoint</li> <li>• Tallinn-10 checkpoint</li> <li>• Tallinn-11 checkpoint</li> <li>• Tallinn-12 checkpoint</li> <li>• Veere checkpoint</li> <li>• Vergi checkpoint</li> <li>• Virtsu checkpoint</li> </ul>	
Open to air traffic: <ul style="list-style-type: none"> <li>• Kuressaare-2 checkpoint</li> <li>• Kärdla checkpoint</li> <li>• Pärnu-1 checkpoint</li> <li>• Tallinna-1 checkpoint</li> <li>• Tartu-1 checkpoint</li> <li>• Ämari checkpoint</li> </ul>	Open to only Estonian and Russian inhabitants: <ul style="list-style-type: none"> <li>• Narva-2 checkpoint</li> <li>• Saatse checkpoint</li> </ul>

### 2.3 Review of the existing financial sources

In Estonia, there are a number of funds to finance infrastructure projects in use. It is possible to finance projects from national funds, regional funds, European Union funds, funds from International Financial Institutions, as well as from private investors.

The national funds of Estonia contain central government and local government funds from the state budget and money received from local taxes. Regional funds include cross-border programmes, the Trans-European Transport Network programme (TEN-T), and other programmes which are co-financed by the European Union and whose aim is to promote and develop regional cooperation. The funds of the European Union are the Cohesion Fund and European Regional Development Fund. International Financial



Institutions are the European Investment Bank, European Bank for Reconstruction and Development and the Nordic Investment Bank. In addition, there are also private investors who invest their private money in infrastructure projects.

## 1. National funds

- a. **The Central Government** holds the state budget.
- b. **Local Governments** use part of the state budget and money received from local taxes.

## 2. Regional funds

- a. **Estonia - Latvia Programme** is implemented according to the principles of European Territorial Cooperation and it supports cross-border cooperation between Estonia and Latvia. It is funded by the European Regional Development Fund (ERDF), the Republic of Estonia, and the Republic of Latvia [5].
- b. **Estonia-Latvia-Russia cross-border cooperation program within the European Neighborhood and Partnership Instrument 2007-2013.** The overarching strategic objective of the program is to promote joint development activities for the improvement of the region's competitiveness by utilizing its potential and beneficial location in the crossroads between the EU and the Russian Federation [6].
- c. **The Trans-European Transport Network program (TEN-T)** consists of hundreds of projects – defined as studies or works – whose ultimate purpose is to ensure the cohesion, interconnection and interoperability of the trans-European transport network, as well as access to it. The TEN-T projects, which are located in every EU Member State, include all modes of transport, such as road, rail, sea, inland waterways, air, logistics, co-modality, and innovation [7].

TEN-T projects aim to [7]:

- establish and develop the key links and interconnections needed to eliminate existing bottlenecks to mobility,
- fill in missing sections and complete the main routes - especially their cross-border sections,
- cross natural barriers,
- improve interoperability on the major routes.

**d. Baltic Sea Region Programme 2007-2013** is a financing tool for co-operation in the Baltic Sea Region. The Programme co-finances projects in the fields of [8]:

- fostering innovations,
- internal and external accessibility,
- the Baltic Sea as a common resource,
- attractive and competitive cities and regions.

**e. Central Baltic INTERREG IV A Programme** funds cross-border cooperation projects in the central Baltic Sea area covering regions from Estonia, Finland, Åland, Latvia and Sweden. The program aims at allocating 96 MEUR of project financing from the European Regional Development Fund to the program area during the years 2007-2013 [9]. The Programme includes three parts related to the origin of the project partners:

- Central Baltic Programme
- Southern Finland–Estonia Sub-programme
- Archipelago and Islands Sub-programme

### 3. Funds of the European Union

**a. Cohesion Fund (CF)** – see section 1.2.

**b. European Regional Development Fund (ERDF)** – see section 1.2.

### 4. International Financial Institutions (IFIs)

**a. European Investment Bank (EIB).** EIB has been very active in individual small loans for the transport sector in Estonia and can continue this specific support [2].

**b. European Bank for Reconstruction and Development (EBRD)** has signed two loan contracts with Estonia for the development of the airport of Tallinn. In the strategy for Estonia, EBRD can support the infrastructure sector in areas such as air and seaports and public and urban transport [2].

**c. Nordic Investment Bank (NIB)** – see section 1.1.

### 5. Private investors

The private investors can be private companies or enterprise owners, who use their own finances to construct or build transport or logistics infrastructure that usually belongs to them.

Table 3 contains a summary of the different types of funds available in Estonia. The existing financial sources in Estonia are more specifically described below.

**Table 3.** Summary of different types of funds available in Estonia.

Type of fund	Fund
National funds	Central Government
	Local Governments
Regional funds	Estonia - Latvia Programme
	Estonia-Latvia-Russia cross border cooperation Programme within European Neighborhood and Partnership instrument 2007-2013.
	The Trans-European Transport Network program (TEN-T)
	Baltic Sea Region Programme 2007-2013
	Central Baltic INTERREG IV A Programme
Funds of the European Union	Cohesion Fund (CF)
	European Regional Development Fund (ERDF)
International Financial Institutions (IFIs)	European Investment Bank (EIB)
	European Bank for Reconstruction and Development (EBRD)
	Nordic Investment Bank (NIB)
Private investors	A number of private investors using their own finances.

## 2.4 Responsibilities for the construction and maintenance of infrastructure

### *Roads*

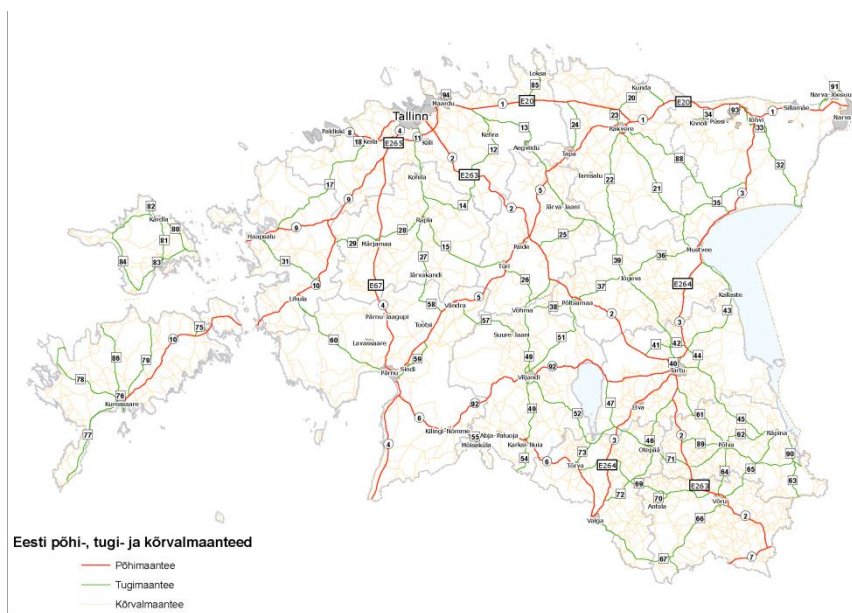
The total length of roads in Estonia was 56 800 km in 2004, of which 16 459 km were in the ownership of the Central Government, 37 188 km of the Local Governments, and 3153 km were streets and roads of cities. In recent years, the total length of roads has increased slightly. The Estonian road network covers the whole country, but its quality is weak. The motorways and highways are in a better condition because they are frequently maintained and reconstructed. The local roads need better maintaining and improving. The growth of domestic and international freight transport requires more motorways and highways and higher quality of local roads [2].

In Estonia, the owner of the road is responsible for construction and maintenance of the road. The Central Government is responsible for the main highways (motorways, long

and medium distance roads). The municipalities and Local Governments construct and maintain the local roads. In addition, there are private roads where the owner has the responsibility to maintain the road.

According to Bakanaite [10], the main issues related to road infrastructure in Estonia are the further modernization of Via Baltica, construction and modernization of cross-border connections, further construction of missing links between Via Baltica and the main Estonian ports, improvement of the accessibility of Tallinn, and improvement of road safety standards.

Figure 3 presents a map of the Estonian motorways, including the main roads (colour red), secondary roads (colour green) and local roads (colour yellow).



**Figure 3.** Map of the Estonian motorways [11].

### *Railways*

The total length of railway lines in Estonia is 1200 km. All bigger towns and centers are united by the railway network. The main part of the volume of goods transported on the railway is transit goods transported from Russia to the Western countries [12].

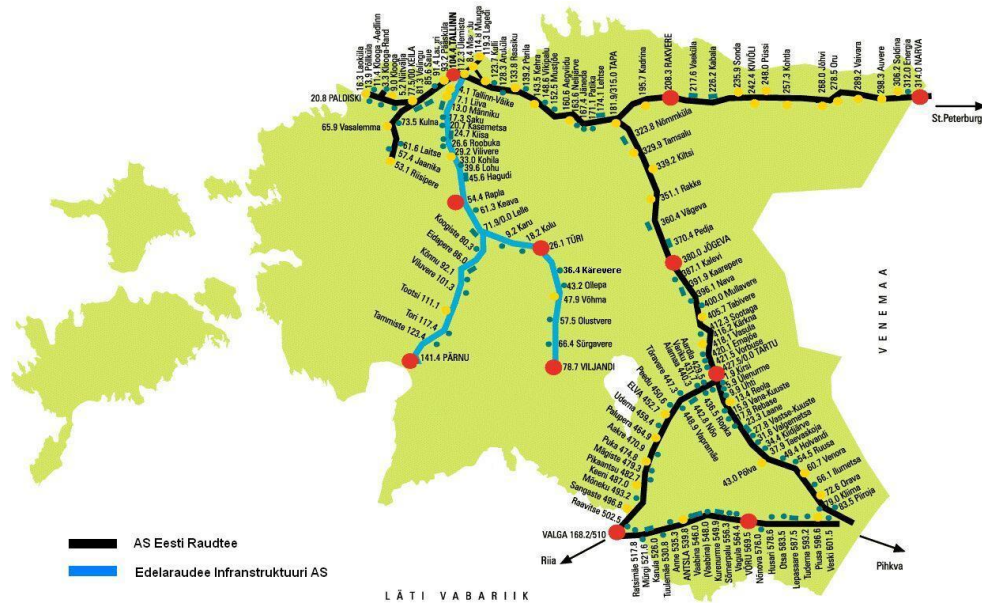
The railway infrastructure is privatized in Estonia, and there are two railway networks determined for public use, which belong to AS EVR Infra and Edelaraudtee Infrastruktuuri AS, both state-owned companies [12].

According to Bakanaite [10], the main issues related to railway infrastructure in Estonia contain modernization of the current rail network, development of rail connections with Estonian sea ports and Russia as well as with the neighbouring countries, improvement of rail accessibility within regions, and maintenance and development of the main railway connections and intermodal rail terminals.

Table 4 presents the Estonian Governmental institutions related to the railway, owners of the public railways, and undertakings performing transportation on public railways in Estonia. Figure 4 is the map of the main Estonian railways.

**Table 4.** Governmental institutions related to the railway, owners of the public railways and undertakings performing transportation on public railways in Estonia [12].

Organisation	Field of activity
Ministry of Economic Affairs and Communications	Planning the development of the field, elaboration of the legal framework
Technical Surveillance Authority	National surveillance, national regulator
AS Eesti Raudtee	Railway infrastructure manager and railway freight operator on the infrastructure of AS Eesti Raudtee
Edelaraudtee Infrastruktuuri AS	Railway infrastructure manager
AS Edelaraudtee	Railway freight operator on the infrastructure of Edelaraudtee Infrastruktuuri AS and passenger transport operator on the infrastructures of AS Eesti Raudtee and Edelaraudtee Infrastruktuuri AS
AS Elektriraudtee	Passenger transport operator on the infrastructure of AS Eesti Raudtee
AS GoRail	Passenger transport operator on the infrastructure of AS Eesti Raudtee
AS Spacecom	Freight operator on the infrastructure of AS Eesti Raudtee
Westgate Transport OÜ	Freight operator on the infrastructure of AS Eesti Raudtee
AS Coal Terminal Trans	Freight operator on the infrastructure of AS Eesti Raudtee

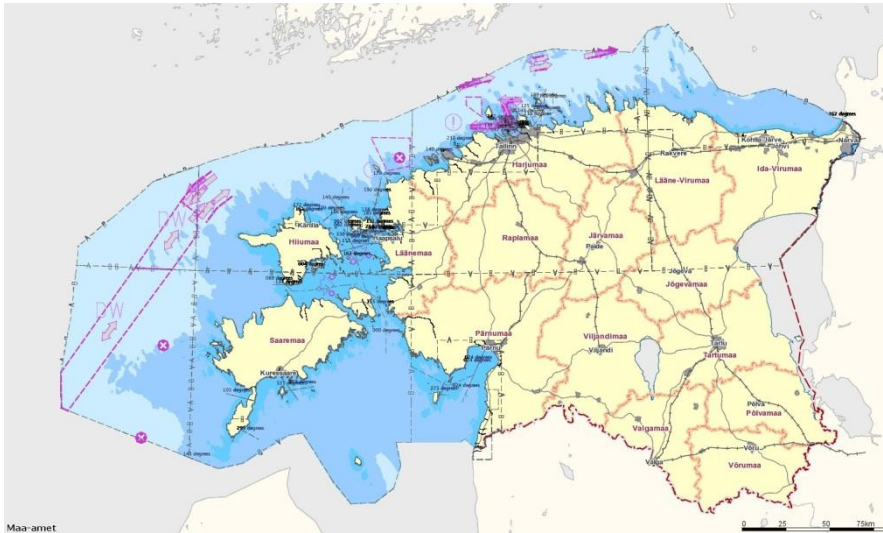


**Figure 4.** Map of the Estonian main railways [13].

### *Deep sea and inland waterways*

The Estonian Maritime Administration is responsible for the maintenance of the waterways in the Estonian territorial waters. It is a subdivision of the Ministry of Economic Affairs and Communications. Estonia has 930 nautical miles marked as navigable sea routes. Figure 5 presents the map of the Estonian waterways.

Inland waterways are also under the responsibility of the Estonian Maritime Administration. There are 320 km of navigable and marked inland waterways, but there is no significant cargo transport and passenger traffic in inland waterways. The inland waterway transport has only a very limited number of ships with gross weight of over 100 tons [12].



**Figure 5.** Map of the Estonian waterways [14].

### Ports

The largest ports in Estonia are *landlord*-type ports, meaning that the owner builds and maintains the infrastructure. The largest Estonian port, the Port of Tallinn, is 100% state-owned company. The other Estonian ports are mainly private ports (e.g. the Port of Sillamäe, Paldiski Northern Harbour), where private companies build and maintain the infrastructure.

The Port of Tallinn and most of the other North-Estonian harbours have significant intermodal transport links between railway and sea transport, the main cargo segments being dry bulk, liquid petroleum products and containers. Most of the cargo concerns liquid goods (specifically oil). The Port of Tallinn is one of the busiest ports in the Baltic area, with more than 8 million passengers in 2011. The main traffic in sea waterways takes place in the following routes: Tallinn-Helsinki, Tallinn-Stockholm, Virtsu-Kuivastu, and Paldiski-Kapellskär [12].

According to Bakanaitė [10], the main issues related to the port infrastructure in Estonia contain the development of the transport axis linking the TEN-T priority project motorways of the Baltic Sea, further development of the Port of Tallinn, the position of Muuga as a gateway to Russia, building port connections with other EU countries, and continuing investments within the port facilities, terminals and quays.

## *Airports*

Estonia has a number of airports and airfields, but their use is quite low. There are 6 airports with passenger services, 5 of which are categorized as international airports. The infrastructure of the main Estonian airports and airfields belongs mostly to state-owned companies or municipalities, the other airfields are privatized.

The main Estonian airport, Tallinn Airport, is owned and operated by the 100% state-owned company Tallinn Airport Ltd. The company manages airports that are located in Estonia, which besides Tallinn Airport include the airports of Tartu, Pärnu, Kuressaare, Kärdla, Kihnu and Ruhnu [15].

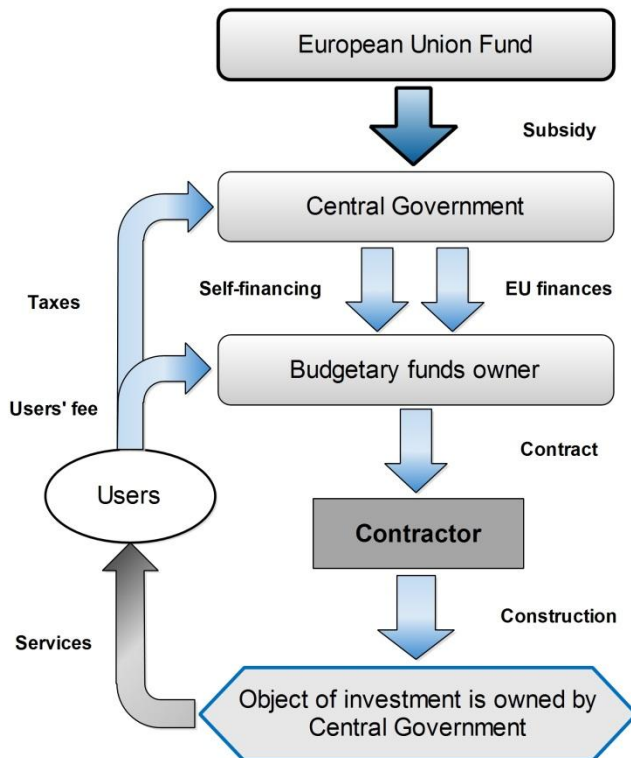
### **2.5 Models of financing infrastructure projects**

The models of financing infrastructure projects are complex systems, which include different actors and financial flow patterns. In Estonia, the main models of financing infrastructure projects contain the financing model of EU finances, direct public funding model, public-private partnership (PPP) models, and the private investment model. The different models of financing infrastructure projects in Estonia are described below. For the purposes of better clarity, all models are presented by illustrative figures.

#### ***2.5.1 Financing by the EU***

In recent years, the EU has co-financed a number of infrastructure projects in Estonia. The EU requires self-financing and finance projects through the Central Government. Figure 6 presents one possible model for an infrastructure project co-financed by the European Union. In this figure, the budgetary funds owners may be local governments, public organizations or other institutions which have requested the use of EU funds. Usually, the objects of investments are owned by the Central Government.





**Figure 6.** Model of an infrastructure project co-financed by the European Union.

The main projects co-financed by the European Union are:

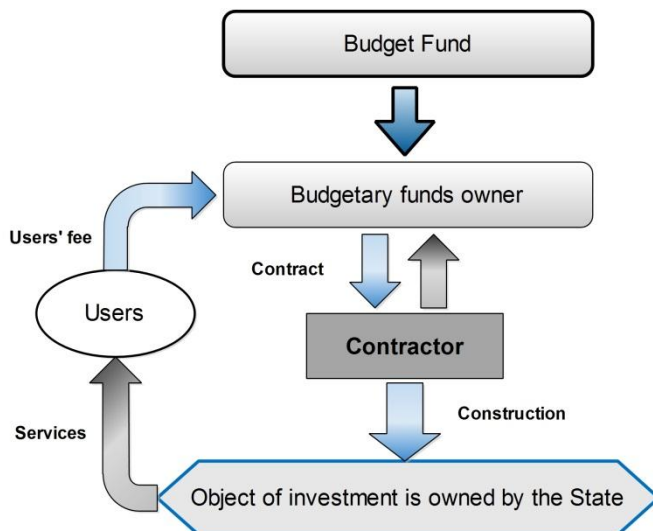
- **Roads:**
  - Reconstruction of the E20 Tallinn-Narva highway, Vão-Maardu section (more information in the Appendix III)
  - Construction of Pärnu bypass in E67 Tallinn-Pärnu-Ikla highway
  - Reconstruction of the E20 Tallinn-Narva highway, Valgejõe-Rõmeda section
  - Reconstruction of the Tallinn circle road
- **Railways:**
  - Reconstruction of the Rail Baltica railway route (Tartu- Valga) (more information in the Appendix V)
  - Transformation of passenger platforms to the EU standard height
  - Reconstruction of the Türi-Viljandi railway route
- **Ports:**
  - Extension to the Eastern part of Muuga Harbour, stage 1 (more information in the Appendix IV)
  - Reconstruction of the port of Hundipea

- **Airports:**

- Joint project of developing the airports of Kärđla, Kuressaare, Ruhnu and Tartu  
(more information in the Appendix VIII)
- Reconstruction of the air traffic area of Tallinn Airport  
(more information in the Appendix IX)
- Development of the Tallinn Airport passenger terminal  
(more information in the Appendix X)

### 2.5.2 Direct public funding

Direct public funding includes State budget money invested in transport and logistics infrastructure projects. The direct public funding model is presented in Figure 7. In this figure, the budgetary funds owners may be local governments, subdivisions of ministries, public organizations, or other institutions. The Central Government gives finances according to the state budget to the budgetary funds owner, who uses it to finance transport and logistics infrastructure projects. Usually, the objects of investments are owned by the State.



**Figure 7.** Model of an infrastructure project financed by public funding.

### ***2.5.3 Public-Private Partnership***

According to Murula [16], in Estonia the public and private sector cooperation projects (PPP) have insofar not been often based on public procurements, as these projects are of a complicated structure and the law has not provided a suitable resolution.

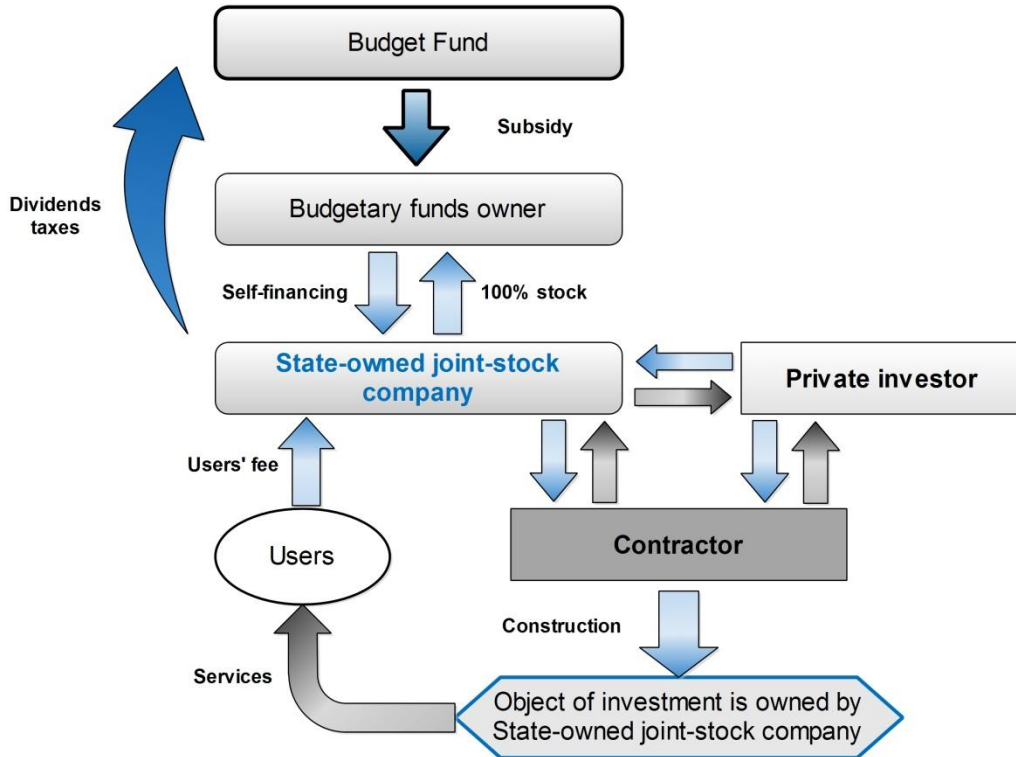
Several PPP projects are based on the following principle: a private sector representative obtains a building title and constructs the necessary infrastructure (e.g. a school, municipal residential building, or physical training facility) by his own finances, and the public sector grants investment profitability by means of future user fees. An example of this is the Tallinn municipal residential buildings, which were constructed and are maintained by the private sector within 30 years according to the building title. The city pays the private sector for these investments by lease out of municipal residential building areas [16].

The use of public-private partnership in transport and logistics infrastructure projects is relatively low in Estonia. Also, Estonia does not have any policy and guidance documents in order to use PPP for project financing. However, there are some PPP projects also in transport and logistics infrastructure in Estonia.

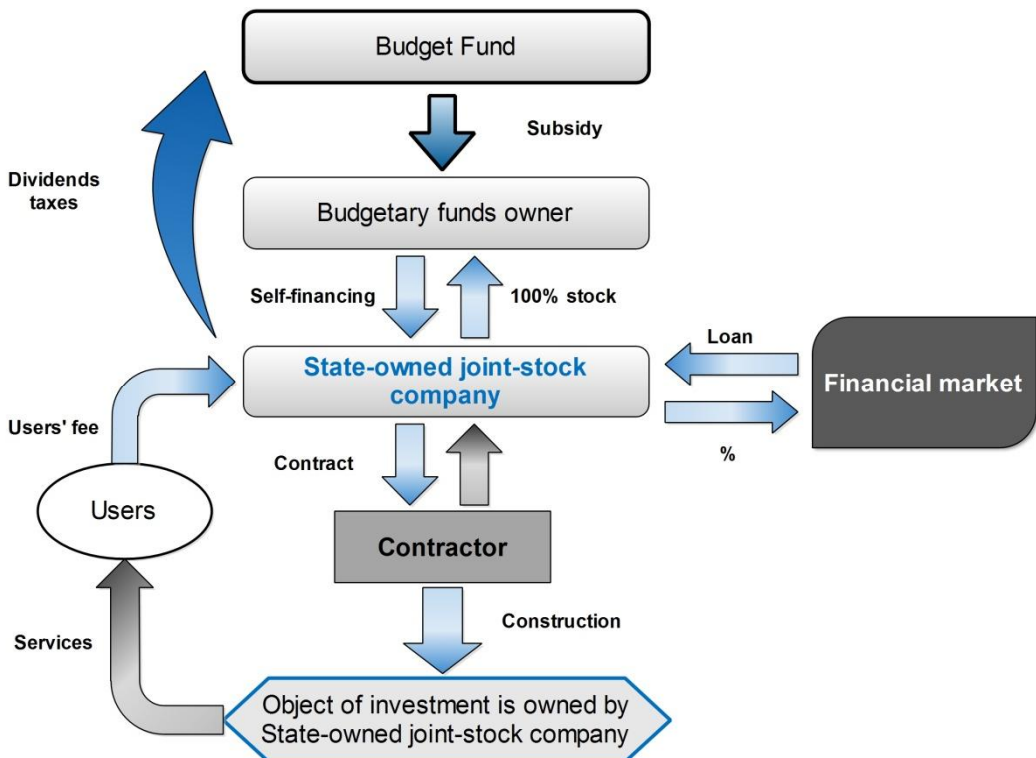
PPP can be seen as co-operation between public and private sector using a company owned by the State, a so-called state-owned joint-stock company. Such companies operate and manage independently, but 100% of the stocks are owned by the State.

There are many different ways to finance infrastructure projects by using the Public-Private Partnership model. Figure 8 presents one possible model of an infrastructure project financed by public-private partnership with a state-owned joint-stock company and the involvement of a private investor. In this model, the owner of budgetary funds may be a ministry.

Figure 9 presents another possible model for an infrastructure project financed by public-private partnership with a state-owned joint-stock company, including the financial market. According to this model, the state-owned joint-stock company borrows additional money from the financial market in order to construct infrastructure objects, and is obliged to repay the loan with interests. The owner of the budgetary funds may also be a ministry.



**Figure 8.** Model of an infrastructure project financed by public-private partnership with a state-owned joint-stock company and the involvement of a private investor.



**Figure 9.** Model of an infrastructure project financed by public-private partnership with a state-owned joint-stock company, including the financial market.

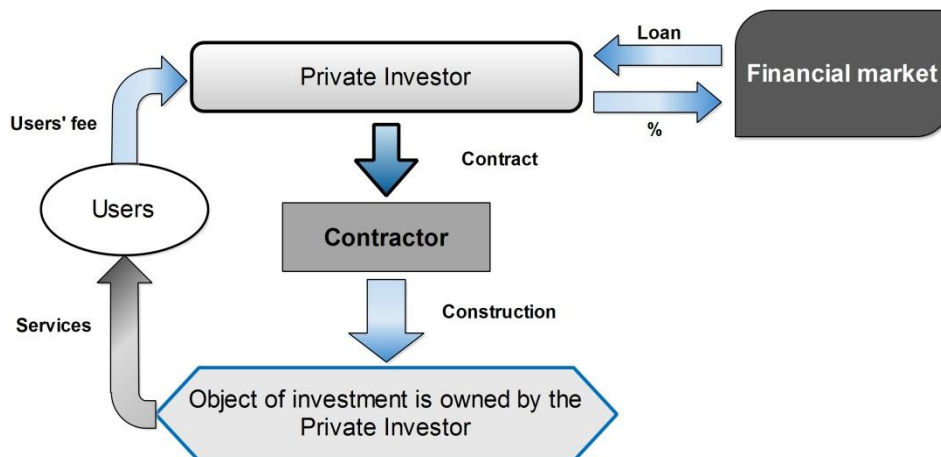
The main infrastructure projects of public-private partnership with a state-owned joint-stock company which are included in this study are projects carried out in the Port of Tallinn. An infrastructure project with public-private partnership is also the construction of the Sillamäe Truck Parking and Rest Area, where the Port of Sillamäe and the Estonian Ministry of Economic Affairs and Communications work together. More information about the Sillamäe project is provided in the Appendix VII.

#### 2.5.4 *Private investment*

Private investment is a financial model where a private investor finances transport or logistics infrastructure objects which usually belong to him/herself. Such private investors may be private companies and enterprises or individuals.

Figure 10 presents one possible model of an infrastructure project financed by private investment. In this model, the private investor uses his/her own money or borrows it from the financial market and invests it in his/her own infrastructure objects. When using financial market finances, the private investor is obliged to repay the loan with interests.

The main infrastructure project of private investment included in this study is the construction of a container terminal in the Port of Sillamäe. More information about the container terminal project is provided in the Appendix VI.



**Figure 10.** Model of infrastructure project financed by private investment.

## **2.6 Environmental impact of transport and logistics infrastructure projects**

The construction of transport or logistics infrastructure may cause significant environmental impacts. In order to avoid this, several laws and requirements are established. In Estonia, environmental impact assessment is regulated by the “Act of environmental impact assessment and environmental management system”.

According to the “Act of environmental impact assessment and environmental management system”, all applicants who apply for a construction permit are required to carry out an environmental impact assessment, if the construction can lead to significant environmental impacts. Under this Act, § 6 names all activities that have significant environmental impacts. These include for example construction of motorways and airport runways 2100 meters or longer, construction of a new railway line or a new railway station, construction of quays that are connected to a port or mainland etc. All these activities are presented in the current study. In addition, all compliers of environmental impact assessment are required to be published and open to citizens.

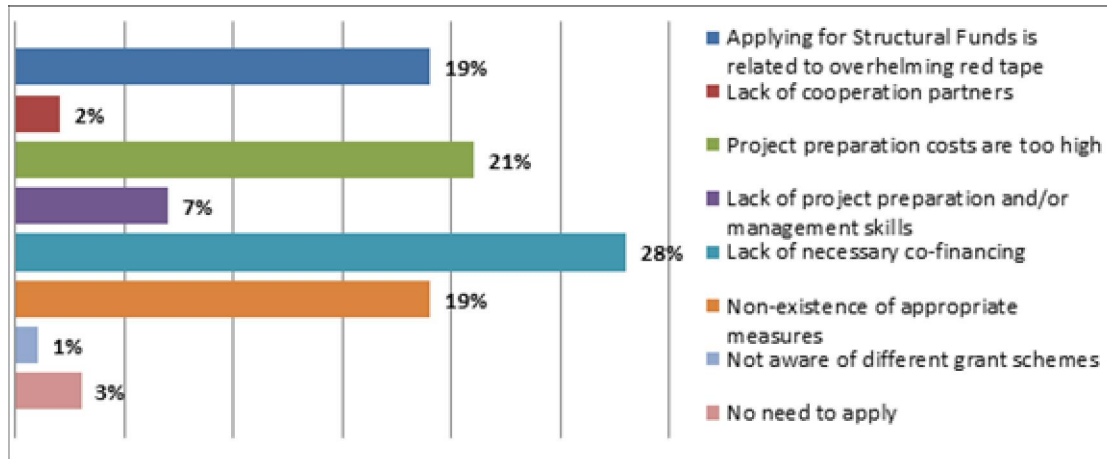
Not all cases analyzed in the current study require environmental impact assessment, but those that do require it, have made this according to the law. For example, the environmental impact assessment of the extension to the Eastern part of Muuga Harbour stage1 was carried out in 2005-2006, and the final report was published in March 2006. This report includes analysis of different environmental impacts, brings out findings and gives proposals for the expansion of the Eastern part of Muuga Harbour [17].

## **2.7 Critical bottlenecks and problems in financing infrastructure projects**

Financing transport and logistics infrastructure projects is a complicated procedure which requires knowledge of the legislation and experience. Most of the infrastructure projects in Estonia have been carried out with the help of EU subsidies. There are a few projects that have been funded directly by public funding or a private investor. However, the EU funds cause a lot of confusion among local institutions.

The Estonian local authorities do not usually apply for EU funds. According to Tatar [18], in 19% of the cases, the reason has been the high administrative burden in the applying for funds. This is related to the lack of competent officials in the municipalities. Rigid rules need to be followed, and a lot of preparation work has to be done when applying for funding. In addition, there are problems with human resources: who would have sufficient time and skills to deal with EU affairs, the overwhelming red tape

surrounding the bidding process, and project management from the state side hinders the process even more. Figure 11 shows the main reasons for not applying for Structural Funds grants.



**Figure 11.** Reasons for not applying for Structural Funds grants [18].

There are a number of different problems with financing infrastructural projects. According to Bakanaite [10], the main problems related to financing Estonian infrastructure projects are:

- **Limited PPP involvement in the infrastructure.** Public Private Partnership has been limited, though Estonia has not had any state policy and guidance documents for using PPP for project financing. The only thing that the country has had was accounting regulations to account for transactions of PPP for state institutions. There are no significant projects within the transportation field, although the conditions are comfortable to apply PPP in this section. [10]
- **Transport fees and charges go together with laws.** The transport operations within Estonia are mainly carried by private operators, meaning that the infrastructure is privatized and everyone using it should pay. In 1992 the country introduced fee prices which are applied for passenger and goods transport services, i.e. the transport sector is not subsidized by the State. The experienced expenses while constructing and maintaining a road network, and managing traffic in order to guarantee safety and environmental protection should be covered by the users of the infrastructure. There is a motor fuel excise tax, tax on railway usage, course navigation tax in aviation, heavy trucks law, waterway and

pilot fee on maritime transport, and partly road parking charge implemented locally within the country. [10]

- **Allocation of collected fees and charges referred to transport infrastructure.** Tax revenue from collected recourses goes to the budget, depending on which level it was drafted. For example, money collected according to the Law on Heavy Trucks Tax goes to the State budget and charges collected from road-parking go to local budgets. All these charges and fees collected from transport are not allocated to transport-related purposes like further road maintenance etc. [10]
- **Strengthening cohesion within the country.** More attention should be paid to satisfying regional and local needs inside the country while planning and forming objectives for future periods. [10]

## 2.8 Preparation funds for infrastructure projects

In general, there is no special funding available for the preparation phase of infrastructure projects. Usually, according to the funding rules, the funded activities of a project do not include the preparation of projects, pre-project studies and surveying. These activities must be carried out before the project starts and are paid from self-financing. These expenditures make the total cost of the project much higher.

The EU has created an organization called JASPERS (Joint Assistance to Support Projects in European Regions) which provides advice to the 12 Central and Eastern EU Member States and Croatia during project preparation, to help improve the quality of the major projects to be submitted for grant financing under the Structural and Cohesion Funds. JASPERS' beneficiary Member States are Bulgaria, Croatia, the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia [19].

JASPERS focuses on large projects with total costs exceeding EUR 25 million for environmental projects and EUR 50 million for transport or other sectors. However, there is flexibility about these thresholds in the case of small countries or where projects serve as pilot actions to establish best practice. JASPERS' assistance is provided free of charge to the beneficiaries and there is no obligation on the Member States to use JASPERS [19].



There have been projects that have had a major impact on large-scale areas, and therefore those projects have contained preliminary studies and research. For example, in the period November 2005 to December 2006, a feasibility study was carried out on Rail Baltica railways. This strategic study of the Rail Baltica railways was conducted on the request of the European Commission, Directorate-General Regional Policy. The objective of the pre-feasibility study was to assess strategically the overall need and potential for developing Rail Baltica and to provide recommendations for project implementation of the most suitable development option in terms of alignment, technical standards and organisation [20].

### **3 Financing instruments in Finland**

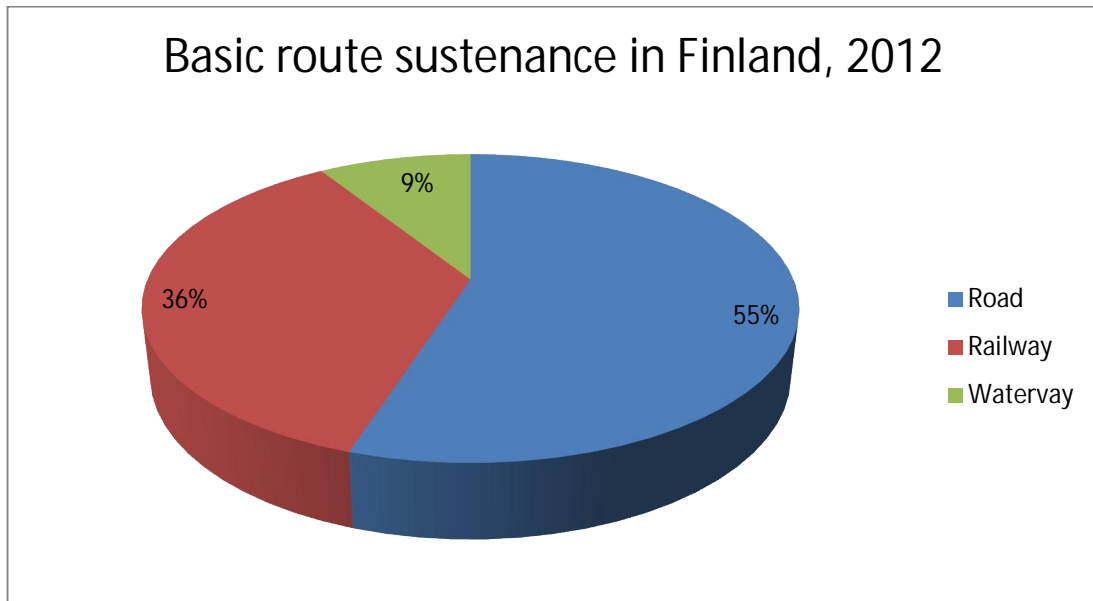
#### **3.1 Introduction**

Europe, especially Northern parts of it, needs to invest heavily in transport infrastructure to remain and enhance its competitiveness. This is a big challenge, considering the difficult economic situation in Europe. There are many bottlenecks cramping the fluent cargo and trade flow. The main objectives are to get rid of or minimize the bottlenecks, to create a competitive environment and make long-term financing decisions for transport infrastructure projects. One of the problems is that the possibilities of the public sector to fund everything are limited. Private sector funding is needed. The private sector may offer viable and reliable long-term sources of investment.

From the point of view of Finland, the Russian economy is strengthening, which means that transportation - transit, export and import - is growing. Finland has to be able to offer a good and competitive alternative for Russian transport. Finland's strategic location offers a good route to Russia, mainly by road and rail transportation from the harbors. Large markets are situated near the borders, safety and efficiency have to be guaranteed in all circumstances and pricing has to be competitive. To protect logistic competitiveness, it is important to develop and maintain the transportation routes. The most important traffic routes are road E18 from Turku to Vaalimaa and the railway from Turku to Vainikkala and Imatra. In the South-West part of Finland road number 8 between Turku-Rauma-Pori has a significant role in transportation of industrial goods to the ports. Nationwide, the most important are the roads and railways to the harbors. [1]

The knowledge in the field of logistics is on a high level in Finland. This guarantees good and competitive quality regarding the infrastructure, payments and taxes. According to the Transport Policy report (Figure 12), 55 % of basic route sustenance is allocated to roads, 36 % to railways, and 9 % to waterways. [2]

The Baltic Sea will be in a dominant position in the future, as it is now. The Trans-European Transport Network (TEN-T) covers in Finland the Nordic Triangle, highways of the sea, Rail Baltica and the Bothnian corridor. Road E67, Via Baltica, is also an important route through the Baltic countries to Europe. For the whole Europe and the Northern Dimension, the arctic region is very significant because of natural resources of the Barents region. The melting sea route may change the logistics systems in the world, and Finland will be in a strategic position. [3]



**Figure 12.** Basic route sustenance in Finland in 2012 (Adapted from [2])

### 3.2 Aim of the study and limitations

This section of the Guidebook covers examples of the Public-Private Partnership (PPP) -model implemented in large infrastructure funding, and it is limited to the road transportation infrastructure projects in Finland. The PPP-infrastructure projects have gained good experiences especially in road transportation in Europe. Considering Finland's strategic location near Russia, the main roads and railways from the harbors have to be in good condition. This study concerns three parts of the E18-growthway project. One of them is finished, one is still going on, and one project will be started in nearest years. In addition, the first Finnish road implemented by PPP-application is described - part of road E4. In addition, a new alliance model and an example of an existing project are presented.

### 3.3 Key findings from interviews

The key findings concerning infrastructure financing from the point of view of PPP are described below. The results of the conducted interviews are categorized into infrastructure financing and its benefits, challenges and risks. The interview questions are presented in the Appendix I and the interviewees in the Appendix II. The research process is described in detail in the study of Turkia [4].

A general conception of the interviewees was that public money is of low cost – in other words public entities can get loans at more favorable terms than non-public investors. The benefits for the public sector were considered to be the possibility to implement a project faster and the possibility to distribute the invested money to a long period. The PPP -model was perceived as one of the most complicated financing models. It is useful, but also a challenge at the same time. From the point of view of a public orderer, financing was seen undemanding in the PPP-model when the service provider organizes the financing. Private financing with a high amount of loan was seen quite risky. Long-term commitment was seen as a positive point of the PPP-model. The importance of strong commitment during a long period was considered to have a great role. The PPP-model was seen as a beneficial solution for the society and the orderer. In long-term contracts it is vital to have incentive for good quality and long-term commitment. The more financiers there are, the more work there will be with the contracts. The financing application process is very long and the availability of funds is limited, which were seen as negative issues. The interest level and economic crisis were seen as challenges. High interest rates were seen as a big risk in long-term financing. The process of financing large infrastructure projects was generally seen as challenging, but with different financing models there is a possibility to innovate. The more financial sources are available, the more value for money will be offered.

The aim is that both sectors, public and private, will profit from the results. Though the financing costs were seen to be much higher in private funding, there will be savings for example in quality control, risk transferring, and efficiency. The main benefits for the public sector are that the funding is not bound to the state budget, not tied in annual financing, and not in the municipality's balance. There were also some arguments against private funding; the model of private funding was not seen to be productive for the private sector, and also very long maintenance periods were mentioned.

The risk of interest, liquidity and availability were commonly seen as considerable. The main concern was whether there would be money available for a project of several million euros. The situation is uncertain from the global perspective. In addition, the interest for a long term is more expensive. The contract period is long and the government may change for example the tax legislation. From the service provider's point of view, a first-case scenario was mentioned, if they cannot pay the loan back, the shareholders' equity will be the first to disappear. Protection against risks was considered

to commit the private partners to the project. Ways of protecting against risks were for example keeping up with the payment schedule, transferring the risks to the parties who are able to avoid them best, following the interest of global markets, using special consultants, taking an insurance, involving the financiers at an early stage of planning the project, and including risk assessment in economical assessments at an early stage. An exact schedule is extremely important for project financiers.

The PPP-model with private funding was seen as a possibility to innovate in the project. The challenge was to find foreign bidders in Finnish markets, and international competition was mainly seen as a challenge. Private financing is only one of the alternatives. Analyzing the different financing models was seen essential in large infrastructure projects. Also a very significant point was that the more financiers, the more work with contracts there is in large PPP-projects. All options should be kept open when considering each project.

The financing sector is changing – there may probably be some other alternatives to choose from in the future. The common conception was that the financing of transport infrastructure projects comes from the state, multilaterals, commercial banks and EU grants. The more financial sources are available, the more value will be accrued for money. Partnerships, both public and private, were seen as very important in large infrastructure projects. The usability of routes which could be added to an intelligent traffic system in the future was considered a part of a solution for financing large infrastructure projects. Another opinion was that the Finnish monetary funds, banks and insurance companies could play a larger role as financiers in transport infrastructure projects.

There are also many challenges for the future; there are and there have to be some competitive financing models – the alliance model was seen as a possible one. Also the state-owned Infra Ltd, a foundation owned by the state, was seen as a good opportunity. Many interviewees saw that the Finnish markets are too far away from global competition – how to motivate them to take part in Finnish projects. One step toward this would be to do all research and publications in English. At the moment there is plenty of material in the Finnish language. Also the rules of the “PPP-game” are not known well enough, and there is no special PPP-expert in the ministry. Some interviewees mentioned the possibility of connecting the PPP-application to the state-owned Infra Ltd.

The use of the PPP-model was regarded possible also on railways, harbors and airports, if the experiences with it are positive. At the moment the PPP-model has been used only in road projects in Finland. One experience of a rail project has shown that the model is suitable only for totally new rail construction projects, not for reconstruction. Finland was seen as a stable market area, however. In general the South-East area of Finland was seen as an enormous possibility for Russian and Asian markets. For example road E18 is under construction on both sides of the border; in Finland and in Russia. Internationalization was seen as priority number one in cross-border projects. The European Neighborhood and Partnership Instrument (ENPI) grants in cross-border financing are familiar in Finland, where the European Union pays 50 %, Finland 25 % and Russia 25 % of the costs. The northern situation of Finland was seen as a challenge.

### **3.4 Environmental impact of transport and logistics infrastructure projects**

The Environmental Impacts Assessment (EIA) has a big role in designing the transport infrastructure in Finland. Harmful environmental impacts are meant to be decreased or totally prevented by the EIA procedure. The national legislation (713/2006 6 § 9 subsection) defines the projects where the EIA has to be done. According to the case examples presented in the Appendixes XI-XIV, the impacts have diminished. Permission for environmental issues has to be acquired before the decision of financing. Road E18 is as an international pilot project called the *Green Motorway*. The project supports sustainable development around road traffic requirements. Safety on a heavily trafficked road is very important [5, g].

The purpose of the environmental impact assessment is to clarify and estimate environmental impacts before starting the project. The project is estimated from the point of view of environmental assessments, traffic composition and economic impacts. The main principles of the environmental impacts assessment are [6]:

- there have to be alternatives around planning the project,
- during the designing of the project, all information on environmental impacts has to be available,
- avoiding harmful impacts or reducing them,
- citizens have to be able to participate in the assessment, and they have a right to react to the alternatives, and

- the results will be signed in a special report for decision making

### **3.5 Review of existing financial sources**

Road maintenance is mainly financed from the state budget. The European Union supports the Finnish route designing and building with grants of Trans-European Networks – Transport (TEN-T) for large project, and the European Regional Development Fund (ERDF) for small projects. This study concentrates on the large projects.

#### ***3.5.1 National funds***

According to the state budget proposal for the year 2013, appropriation for basic national routes, traffic network development, traffic authorities, purchasing of public transport, and financial support for shipping, air traffic and road maintenance will be granted. The budget has been settled by the Finnish government. The financing of road maintenance is in charge of the Finnish parliament. The Ministry of Transport and Communications allocates the financing for transportation routes to the Finnish Transport Agency. The financing of traffic routes is in charge of the Finnish Transport Agency, which will give financing for the designing and maintenance to the Centre for Economic Development, Transport and the Environment by a revenue contract. [7]

National programs are significant financial sources, where public financing comes from the structural fund of the EU via the state and municipalities. The projects are partly financed by a national fund via the Centre for Economic Development, Transport and the Environment, Finland. [8]

**Table 5.** Available national funding sources in Finland

<b>National funds</b>	
<b>Funding source:</b>	Direct funding from the <i>government or municipalities</i> ( grants, guarantee schemes)
More information:	<a href="http://www.suomi.fi/suomifi/english/state_and_municipalities/state_administration_and_central_government/central_government_agencies_and_public_bodies/index.html">http://www.suomi.fi/suomifi/english/state_and_municipalities/state_administration_and_central_government/central_government_agencies_and_public_bodies/index.html</a>
<b>Funding source:</b>	<i>National programs</i> are significant financial sources, where the public financing comes from a <i>structural fund of the European Union (EU) via the state and municipalities</i> . The projects are partly financed by a national fund via the Centre for Economic Development, Transport and the Environment, Finland.
More information:	<a href="http://www.ely-keskus.fi/en/frontpage/Sivut/default.aspx">http://www.ely-keskus.fi/en/frontpage/Sivut/default.aspx</a>

### 3.5.2 Funds of the European Union

EU-programs are administered by a local public authority, the Centre for Economic Development, Transport and the Environment, Finland (for more information see the web page:

<http://www.ely-keskus.fi/en/frontpage/Sivut/default.aspx>

In Table 6 below, some examples of EU-supported funds for transport in Finland are listed. More information is available in the web-pages in parentheses. There is also funding from the European Regional Development Fund (ERDF) program in Finland, but the financing is for smaller projects and it is not presented in this context.

**Table 6.** EU-supported sources in large transport financing projects in Finland

<b>EU-support</b>	
<b>TEN-T</b> , the sectoral EU fund is the Trans-European Transport Networks fund <a href="http://ec.europa.eu/transport/themes/infrastructure/ten-t-funding-and-financing/index_en.htm">http://ec.europa.eu/transport/themes/infrastructure/ten-t-funding-and-financing/index_en.htm</a>	
<b>ENPI</b> , cross border program European Neighbourhood and Partnership Instrument is managed by Regional Councils in Finland. <a href="http://www.southeastfinrusnpi.fi/">http://www.southeastfinrusnpi.fi/</a> See more in the chapter 3.6.2	
<b>ENI</b> 2014-2020 (European Neighbourhood programme) <a href="http://ec.europa.eu/europeaid/how/finance/mff/financial_framework_news_en.htm">http://ec.europa.eu/europeaid/how/finance/mff/financial_framework_news_en.htm</a> See more in the chapter 3.6.2	



The TEN-T program is one of the most important financing tools of the European Union. The European Union grants financial support for the designing and building of traffic routes. The state of Finland has received financial support of more than 250 million euros during its membership period. For the railways, Finland has received 161 million euros, for roads 72 million euros, and 17 million euros for waterways. The function of the TEN-T margins is to cover the transportation network in Europe, ensure the mobility of goods and offer high-quality infrastructures. The TEN-T projects aim to establish and develop the key links and inter-connections needed to eliminate existing bottlenecks to mobility, fill in missing sections and complete the main routes – especially their cross-border sections, cross natural barriers, remove bottlenecks, and improve interoperability on major routes. The applicant bodies must have a registered legal seat in one of the EU countries [5, b]. More information can be found in <http://www.ec.europa.eu/tentea>. Figure 13, road E18 shows a direct connection from Russia to Europe via Finland, Sweden, Norway and Denmark.



**Figure 13.** TEN-T route to Europe. [2]

Previous pilot projects are the Nordic Triangle, the Motorways of Seas, Rail Baltica and the new project the Bothnian Corridor (Figure 14). The figure contains also the Northern Arctic (Northern Arc) route, which will be a future strategic project in Finland with links to Narvik, Murmansk and Barents. The important Northern sea route and the Baltic Sea route to Finland are depicted in blue. In Finland the Nordic Triangle means road E18 from Turku to Vaalimaa and the railway connection to Vainikkala. Road E18

belongs to the TEN-T project. The selected TEN-T projects in Finland are presented in the Appendixes XII-XIV. The concepts “Green highway” and “intelligent transport” are closely connected with this context. The Via Baltica and Rail Baltica create a traffic route from Helsinki to Tallinn (Estonia) and further to Warsaw (Poland). The new Bothnian Corridor (Bothnian Arc) is the rail connection from Helsinki to Tornio and further along the east coast of Sweden to Stockholm. The main road E4 from Helsinki to Kemi is a part of the Bothnian corridor and the Motorways of Seas offer a complete sea network between the countries in the area. The E4 road project from Helsinki to Lahti is presented in the Appendix XI.



**Figure 14.** Finland’s international traffic routes [9]

More information about TEN-T successes can be found in [http://tentea.ec.europa.eu/en/ten-t\\_implementation\\_successes/](http://tentea.ec.europa.eu/en/ten-t_implementation_successes/)

Calls for proposals can be found in [http://tentea.ec.europa.eu/en/apply\\_for\\_funding/follow\\_the\\_funding\\_process/calls\\_for\\_proposals\\_2012.htm](http://tentea.ec.europa.eu/en/apply_for_funding/follow_the_funding_process/calls_for_proposals_2012.htm)

### ***3.5.3 International Financial Institutions***

**The European Investment Bank (EIB)** plays a significant role in financing highways and gives loans for long-term capital investment projects and long-term loans up to 20 years. The EIB is a body of the EU and it has a long period of experience of financing infrastructure projects in the EU. The equity capital is under the control of 27 member states of the EU. The function of the EIB is to support the EU's political targets by offering long-period funding. The EIB lends money to public and private sectors in transport. The EIB finances a maximum of 50 % of the total costs of any project. In 2008, the European Commission and the EIB signed a Cooperation Agreement establishing the Loan Guarantee Instrument for Trans-European Transport Network projects (LGTT). The EIB has been involved in Muurla-Lohja and Koskenkylä-Kotka projects in Finland. [10]

**The Nordic Investment Bank (NIB)** offers long-term loans and guarantees to clients in public and private sectors. Loans are released to municipalities, cities and the private sector. The NIB has the highest possible credit rating AAA/Aaa with the leading rating agencies Standard & Poor's and Moody's. The NIB is involved PPP-projects in Finland. It has provided a 14-year-maturity loan for financing the E18 Koskenkylä-Kotka motorway, presented in the appendix. The NIB has also been a financier in the Muurla-Lohja and Helsinki-Lahti projects. [11, a]

### ***3.5.4 Private investors***

According to Leviäkangas [12], investors have to have long-term preferences and low preferences for the time value of money to be able to commit their funds to the project. Financing of the private sector is one of the most significant financial activities. The capital may come from

- shareholder's equity (private investors),
- national or international banks (financial markets),
- pension funds, or
- insurance companies.

Private companies or individuals invest in a project by themselves. Loans are applied for in the financial markets. The private investors make a contract with the project contractor and are the owners of their investments. [13]

The financing for the project of Koskenkylä-Kotka comes from national and international banks, shareholder's equity and for the first time in Finland, an insurance

company is involved in the financing. In Finland the model is known as private funding or post funding, and currently it is called life-cycle funding. [2, a]

The private sector also takes part in building, operating and designing. There is a lot of criticism against financing with private funding; the social benefit is not good. The social cost-benefit ratio is one of the most important prerequisites for a successful infrastructure project. In the interviews for the research [4], the common opinion was that private money is suitable for some road projects. The working capital demanded is so huge that a special project consortium has to be established, where the cash-flow is divided between the investors, subcontractors and users.

### **3.6 Models of financing infrastructure**

A variety of models of financing infrastructure projects in Finland are described in this section. There are many other models which have not been used in Finland, but have been under discussion lately - for example earmarking of road transportation taxes and road user charges. [6, a]

#### ***3.6.1 Direct public funding***

The state budgetary funding is the principal funding method. The new methods demand a lot of preparation work and a transition period. The authority will be granted to the project and the costs will be budgeted according to fulfillment of the initiative into the state budget. The costs will be posted in bookkeeping at the same year and the investment is for state balance. Public financing is based on taxes and payments. The state or municipalities collect taxes from different economical transactions [2, g]. The public funding models in Finland are listed below.

- State financing – direct from the state budget
- State-owned Infra Ltd or an internal loan model (future)
- Post-financing – the government pays according to traffic accrual
- Municipal or city financing – total or part of the project. [14]

The positive feature of financing from the state budget is that it is balanced, explicit and transparent, and it is well known. There are also problems, such as how to include grants of the projects into the state budget, and the timing and costs of projects. Also the risks, pricing and management are the responsibility of the government/taxpayer. [14]

According to the Finnish Transport Agency [2], the state-owned Infra Ltd could be the most effective way to decrease the financing costs in the future. The company has not been established yet, but it will be a state-owned company whose aim is to organize financing for the development of the traffic system. The benefit is that a state-owned company is able to get financing with lower expenses. The basic idea of the model is that the company would procure the financing for large projects from the financing markets. Another possibility is that appropriation would be granted to outputs (incomes), not expenses. The model is almost similar to the Infra Ltd one, but appropriations would be granted to the Finnish Transport Agency, for example compensation based on kilometers. Thus the appropriations would be income for the agency. The agencies could take a loan for example from the internal bank of state's concern. The agencies could set the price based on expense, when the investments could be allocated for annual depreciation for the whole period. The possibility for the agency is to amortize and pay the interest by the granted appropriations. [2, g]

In the above case, post-financing means an initiative of the government, the costs of which during the construction period are paid by an external quarter and the government will repay them when the project is ready. The repayment will be done during a couple of years in one or two parts. Interest is not included in the repayment. The model enables the implementation of the project earlier than it would have been done according to financing frames [2, g]. In the post-financing model, the project costs are first charged from the project consortium and the government compensates for the costs afterwards. Also the municipalities can finance smaller projects and apply for the money from the government afterwards. For example the city of Kotka has been partly financing the project of Koskenkylä-Kotka E18. The positive feature of the model is that there is a possibility for more quick realization. The negative features are that the municipalities are in a non-democratic position, the availability of financing may become a selective factor, and there may be misunderstanding in consensus and value-added tax problems [14].

There exist traffic fee systems that are used almost in all countries of the European Union. There is no such fee system in Finland yet, but it is under investigation, and the decision will be made during the year 2013. A possible way to collect fees is to use the satellite location system. [7]

### ***3.6.2 Public-Private Partnership***

The international Public-Private Partnership (PPP) -model, (the Finnish name for the model a “life-cycle model”) also called a post financing model and private financing model - Private Finance Initiative (PFI). In the PPP-model the service provider is in charge of the comprehensive service. It includes the designing, building, financing, and long-term maintenance. After a long concession period, the road or railway will be released to the orderer without any compensation. In the life-cycle model there are not e.g. any limits of state budget in the existing year and the service provider is able to sign long and wide contracts with sub-contractors. At present the basis of payment is the users of the roads or railways, not according to the amount of traffic. The PPP-model is one of the alternatives to implementing a transport infrastructure project. In the model the private participant is largely responsible for designing, financing, building and maintenance, and takes care of the project during the whole concession period. The financing will be procured by the private partner and the government will pay the private investments made by private partner back as a service fee. The model is called Design-Build-Finance-Operate (DBFO), which is almost similar to the model of Build-Transfer-Operate (BTO). In the BTO-model the actions are the same; designing, building, and financing, but the ownership will be transferred to the public participant immediately when the project is ready. [2]

In the article of Lehtikankare and Nygård [15], Public-Private Partnership (PPP) is presented as a model developed for the implementation of large infrastructure projects. The public sector procures the infrastructure for use via a service contract. The private sector implements the designing and building with financing they have obtained. They also have the responsibility of taking care of maintenance even for dozens of years, when in conventional projects it is normally two years. The private service provider will receive payment from the public participant as a service payment during the contract period.

According to a report of labor policy, the decision should be made according to a real comparison calculation – not only decision making of the policy. The special financing group has analyzed that the life-cycle model is possible only when its procurement is totally economic for the state. [16]

For a PPP-project, a special project company has to be established. The company will provide the financing, which can be investments of the owners and loans from

commercial or multilateral banks or both. External guarantees are not needed, because the cash flow received from the “life-cycle” contract is a guarantee. [15]

The financing in the PPP-model is based on the so called model of economy, where the cash flow is counted for each contract month beforehand. At the beginning, the cash flow is loan and investment, but after the road project has been opened, the orderer will make payments to the project company. The legislation has been changed regarding PPP-application in Finland. The in- and outcomes are irregular, but now they can be divided in a righteous manner. [15]

Based on an assignment founded in the Government Programme, the Ministry of Finance reviews the positive features of "life-cycle" projects. The projects implemented by the PPP -model can be carried out more quickly and effectively, and the quality is better. Negative features are the high costs of financing, long commitment, the difficulty of applying technically demanding projects, such as the repairing of old railways, where the definition of risks is complex, and the costs of consultants and the bidder costs are high. [14]

According to interviews [4], there has also been a lot of criticism around the PPP-model. The paperwork is complicated and takes a lot of time. There have also been too many years between the earlier projects, which is a challenge for the management. The lifecycle project should be done in 2-3 years and all necessary information should be standardized in documents for future purposes. Special expertise is needed in PPP-projects.

A brief presentation of selected projects is offered below. More information for each project is available in the appendixes XI-XIV.

### **Road E4, Helsinki-Lahti**

The Helsinki-Lahti E4 -motorway is the first PPP -implemented project in Northern European countries. The road was released from the private stakeholders to the public actor Finnish Transport Agency on 30<sup>th</sup> August 2012. The 15-year-old contract is finished. The road was built with a very fast schedule during the years 1997-1999. Even 80 meters of road was built per day. [17]

The Special Purpose Vehicle (SPV), in this case the Tiejhtiö Nelostie Oy, was first in charge of the project costs and the government compensated for the costs afterwards. The model is also called also a post-financing model. Figure 15 presents the Finnish Road

Administration as the service orderer. The service provider Tieyhtiö Nelostie Oy was specially established for the purpose of implementing the project according to the “life-cycle” model. The service provider Tieyhtiö Nelostie Oy organized the money invested in the project. When the road started to be used, the considerations released from the Finnish Transport Agency according to traffic volume. The loan came from the Nordic Investment Bank (NIB) and commercial Sampo Bank. Skanska and Laing Investment were the owners and Skanska Infra with subcontractors was in charge of building, maintenance and sustenance. The own equity financiers were Skanska Oy, Skanska BOT Ab, Laing Investment, Teollisuusvakuutus, Eläke-Varma, and Espoon Sähkö Oyj. [2, c]

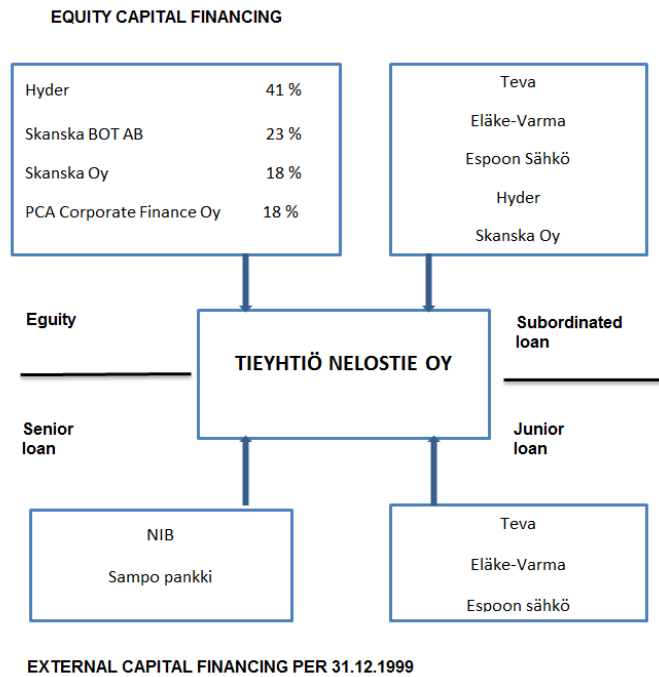


**Figure 15.** The contract model of Helsinki (Järvenpää) – Lahti

The motorway from Helsinki to Lahti carries the heaviest traffic in Finland. The motorway allows savings for the society of about 20-30 million euros, due to faster movement and decrease of accidents. The project was successful for all partners. According to information from the service provider, the fluent building was possible because of the experts involved and the flexible financing model. There were no limits by using the PPP-model. The money was available when it was needed. The benefits against the costs were higher than expected. Today there are about 25 000 users a day, when in 1998 the traffic amount was 14 000 users a day. At present there are almost 40 000 users on the best days. The benefits of the Helsinki – Lahti road are also the fast, efficient and high quality implementation and good level of maintenance. The PPP model encourages the service provider to keep the road in good condition. [2]



Figure 16 below describes the owner and financiers of the SPV Tieyhtiö Nelostie Oy. The figure shows the flow of the equity and external capital financing of Tieyhtiö Nelostie Oy. More information of the project figures is given in the Appendix XV.



**Figure 16.** The owners and financiers of Tieyhtiö Nelostie Oy (Adapted from [2, 18]).

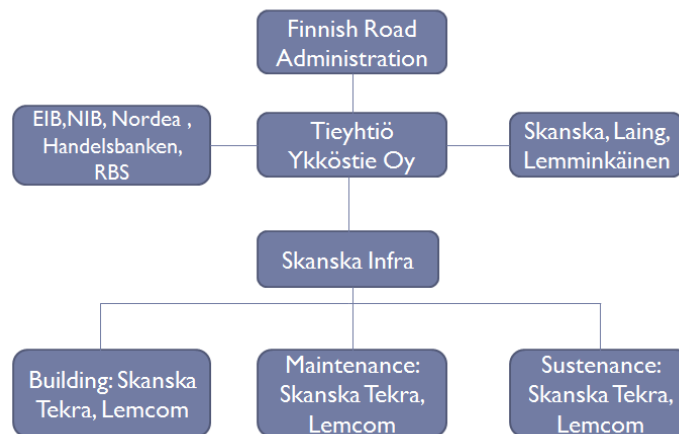
### Road E18, Muurla-Lohja

The Muurla-Lohja highway E18, the second PPP-project in Finland, is a central part of the TEN (Trans-European Networks), a priority project of the Nordic Triangle, defined by the European Union. The project was implemented by the PPP-model. Then contract of building and maintenance is valid till 2029. [19]

In this “life-cycle” project the service fee is based on the use of the road. This differs from the Helsinki –Lahti project, which it is based only on the amount of traffic. The project has received TEN-funding from the European Union for the period of general plan. [5, d]

The SPV established the company Tieyhtiö Ykköstie Oy (Figure 17). After international competition, Tieyhtiö Ykköstie Oy was selected as the realizer. The Finnish Road Administration was the orderer of the project. Tieyhtiö Ykköstie Oy is a service provider that organized the designing, building, maintenance and financing of the project.

The shareholders are Skanska, Lain Investment and Lemminkäinen. The primary loans came from EIB, NIB, Handelsbanken and the Royal Bank of Scotland (RBS). All in all, the financing came from a multilateral and commercial bank, shareholder's equity and other investors. The Skanska Infra labor consortium with sub-contractors was in charge of operating the work. [2, b]



**Figure 17.** The contract model of Muurla – Lohja

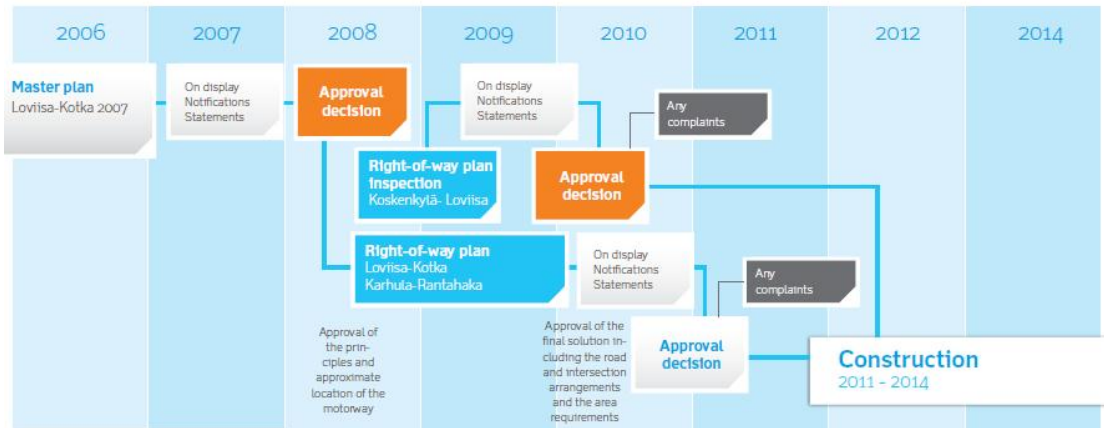
The motorway from Muurla to Lohja is ready and the service fee will be paid for a total of 21 years from the state budget. The road is not dependent on the state budget, because the maintenance is the responsibility of Tieyhtiö Ykköstie according to the quality requirement. [2, b]

The EIA has been done and an exceptional permit admitted to the project. For example, there was a living area of the flying squirrel (*Pteromys Volans*) on the site. There was also a ground water area and traffic noise was perceived. [20, b] More information is given in the Appendix XII.

### **Road E18, Koskenkylä-Kotka**

The third PPP-project in Finland is a part of road E18 from Koskenkylä to Kotka. It is the busiest and most significant motorway in southern Finland. At the moment it is the largest infrastructure project in Finland. “The core benefit from the society’s point of view is the fact that a large road can be built very fast and taken into use quickly. The project would take significantly longer, if financed through budget funding” says Jaakko Kouvalainen, CEO of Tieyhtiö Valtatie 7 Oy [11]. Figure 18 shows the main points of the

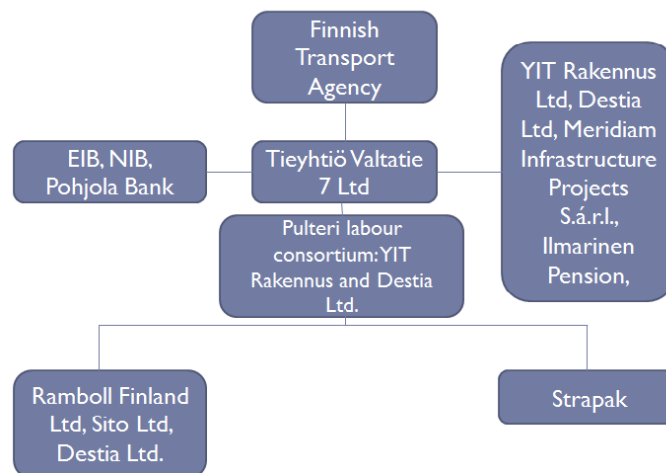
project. As can be seen in the figure, the preliminary work will take a relatively long time from the master plan to starting the construction.



**Figure 18.** Schedule of the Koskenkylä-Kotka project. [2]

In this project the service fee is based on the use of the road. The project of Koskenkylä-Kotka is the first large infrastructure project where a pension fund is involved. The project has received TEN-funding from the European Union in the period of the general plan. [11, a]

The SPV has established the service provider Tieyhtiö Valtatie 7 Ltd. As shown in Figure 19, the Finnish Transport Agency is the orderer of the project. Tieyhtiö Valtatie 7 Ltd is a service provider that organizes the designing, building, maintenance and financing of the project. The road is meant to be ready in 2014. When the road is in use, the service provider is in charge of the road maintenance and financing until the year 2026. The shareholders are YIT Rakennus Ltd, Destia Ltd, Meridiam Infrastructure Projects S.á.r.l., Ilmarinen Pension, and the primary loans are from the EIB, NIB, and Pohjola Bank. The financing is formed in the same style as in the previous project of Lohja-Muurla from a multilateral and commercial bank, shareholder's equity and other investors. The Pulteri labor consortium with sub-contractors is in charge of operating the work. [10, c]



**Figure 19.** The contract model of Koskenkylä - Kotka

The Finnish Transport Agency has made an Environmental Management Plan for the Koskenkylä – Kotka project. The plan consists of issues around traffic noise, construction noise, groundwater, surface water and endangered species. [2, d] More information is given in the Appendix XIII.

### **Road E18, Hamina-Vaalimaa**

The last part of road E18 from Turku to Vaalimaa is a highway, the construction of which should be implemented during the years 2014-2015. The route is very significant for the economic life, for the transportation need of Finland internally and also for international transport. The project has received TEN-funding from the European Union for the period of the general plan. The project is planned to be implemented with the PPP-model. [2, e]

The main problem of the current road is that the condition of the road is weak compared to the traffic flow and growth scenarios. Especially the long queues of heavy trucks waiting for border crossing from Vaalimaa (FIN) to Torfjanovka (RUS) are a problem. The queues have been more than 50 kilometers long. The standing queues are harmful for the traffic and also for the roadside inhabitation. 240 million euros has been reserved from the state budget for the construction of the road Hamina-Vaalimaa. [2] The more information of the future project is given in the Appendix XIV.

The EIA was done for the PPP-project E18 from Hamina to Vaalimaa before the road design. The document contains information of the project, its alternatives, and assessment of the environmental impacts. The noise and other environmental damages will decrease.

The road will be constructed mainly outside population areas. The schedule of the whole project is described below. [2, e]

EIA (2007) > EIA statement (2008)> General plan, statements, changes (10/2009 – 2010)>Approval, possible complaints, plan (2011-2013)> Preparation of procurement (2014)> PPP-tendering (2015) >construction (2016-2018)

According to research interviews [4], the PPP-model is suitable for large infrastructure projects and total new projects. The good experiences are from road projects, and the model is not suitable for the reconstruction of railway projects, but for totally new railway projects the model is suitable. There are no existing harbor or airport projects in Finland at the moment, but the PPP-model is a suitable application for them as well.

The PPP-model has enabled the implementation of projects which the government was not able to realize in their framework in Finland. The special information about PPP-projects is readable at <http://www.eib.org/epec/>. There have been good experiences of using the PPP-model in Finland, and the model should be developed to meet the Finnish circumstances. It is possible to start with two to three projects during each term of government. [21]

### ***3.6.3 Private investment***

The financing of the private sector is one of the most significant financial activities. Capital may come from:

- shareholder's equity (private investors),
- national or international banks (financial markets),
- pension funds, or
- insurance companies.

The private companies or individuals invest in the projects by themselves. The loans are applied from the financial markets. The private investors make a contract with the project contractor and they are the owners of their investments. [2]

In the PPP-project cases the project financing has come from national and international banks, and shareholders' equity, and in the project of Koskenkylä-Kotka an insurance company is involved in the financing. In Finland the model is known as private funding, or post funding, and currently it is called life-cycle funding. [2, g]

### ***3.6.4 Alliance***

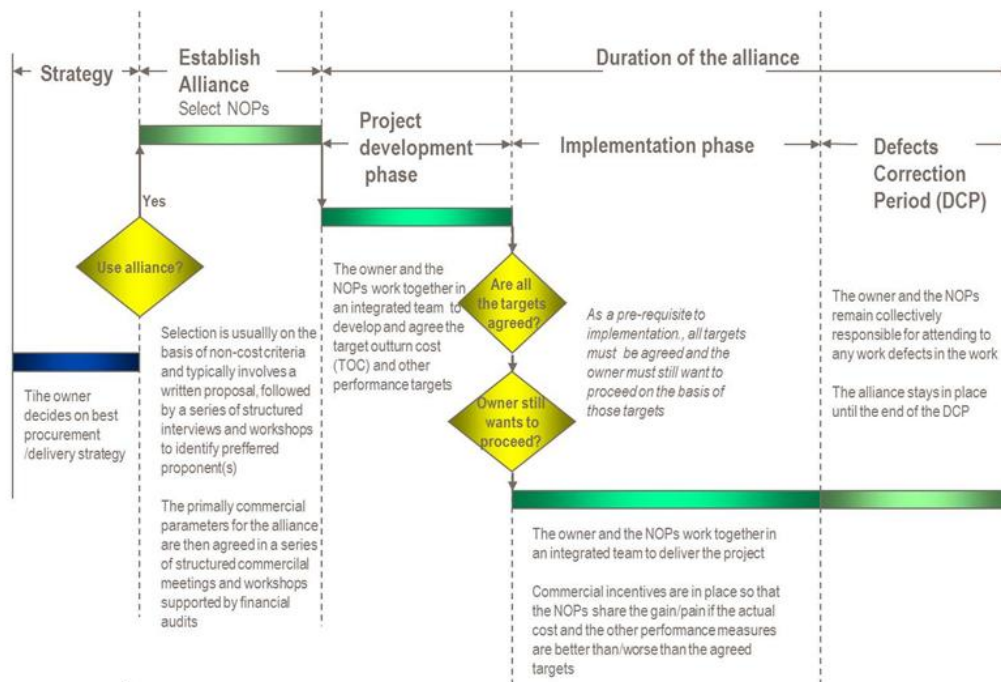
The first project in Europe implemented by the alliance model is the Lielähti-Kokemäki rail reconstruction initiative in Finland. The project is described in the Appendix XV. The alliance model comes from Australia and so far it has gained only good experiences. Savings in project costs have been reported when using the alliance model. [22]

The alliance model is an implementation where the participants of the project have concluded the contract together and thus create an alliance. The economic model is based on the open book -procedure where the contractors and designers will pay the actual costs incurred and are covered according to the contract. The funding comes from the state budget. The participants are the project orderer, designers, contractors and possible suppliers. The risks and benefits are shared as agreed beforehand. [22]

According to Yli-Villamo and Petäjaniemi [22], the strategic goal is to improve the productivity of building, to change the building culture closer to an open and innovative one, and to build more quickly with a low-priced and qualitative result. The rail project of Kokemäki-Lielähti is a pilot initiative, which is financed by the state budget. The quotation for the basic maintenance of the rail is 91 million euros and it is provided from the state budget during the years 2010-2015. The alliance model is expected to be a solution for railway construction in Finland [2, g]. The goal and the value for money in the Kokemäki-Lielähti project are that it is in use in the agreed time, the quality is excellent, the other railway traffic can operate undisturbed and the project is being executed cost efficiently with innovative solutions and working methods. [2, g]

The alliance model is suitable for large infrastructure projects and demanding projects, but it includes risks. The risks can be encountered with co-operation. The control of the costs is effective with the alliance model. Significant results can be reached by effective co-operation. The principles of alliance are described in Figure 20. The duration of the alliance has been divided into three parts; the project development phase, the implementation phase and the defect correction period [22].

## Phases of an Alliance



8

Lähde: Jim Ross, Alliance Contracting, lessons from the Australian experience, LIPS-conference in Karlsruhe 9.-11.12.2009

**Figure 20.** The main phases in an alliance [Jim Ross; 2].

The alliance model offers challenges and possibilities for all partners involved. The model will be developed by a pilot project in Finland. At the moment there is no documented assessment yet in Finland, but the alliance model is expected to be the most competitive model in large infrastructure projects. The earlier results from Australia show that with the alliance model it is possible to implement projects fast, they are cost effective, and close co-operation of the participants helps create innovations. [22]

More information of the alliance rail project Kokemäki-Lielähti can be found in [http://portal.liikennevirasto.fi/sivu/www/e/projects/under\\_construction/lielahti\\_kokemaki](http://portal.liikennevirasto.fi/sivu/www/e/projects/under_construction/lielahti_kokemaki)

### 3.6.5 Financing cross-border projects

Finland is seen as a strategic Northern gate from the European Union to Russia. The meaning of Russia is very important for Finland. Russia accounted for 18.7 % of Finland's import and 9.4 % of export in 2011. The total amount of cargo flow between Russia and Finland was about 35.9 million tons in 2011. It is obvious that the cross-border infrastructure has to be in a good condition. The aim of the Finnish Transport

Agency is to guarantee the traffic safety and fluency in cross-border routes in road, railway and sea traffic. The road co-operation takes care of the development and maintenance of the condition of the roads and the connection to Russia. The railway co-operation concerns the building and maintenance of the rail network, and developing fluent information exchange between railway operators at both sides of the border. The sea route co-operation focuses on winter maritime conditions and the course the traffic flow. [2, f]

In the border crossing case the financing program is one of European Union and national state financing. The European Neighbourhood and Partnership Instrument (ENPI) has been approximately 87.6 million in Finland in 2007-2013. During this period Finland has been involved in the implementation of three projects - examples are described in Table 7. In this connection the Regional Council of South Karelia has administered the project financing [23]. The indicative allocation for ENPI CBC (cross-border cooperation) for Finland has been about 36.2 million euros during 2007-2013. The Karelian area in Russia has received about 23.2 million euros for land-border programs [24].

**Table 7.** ENPI CBC projects in Finland during 2007-2013 [25].

<b>ENPI CBC - program</b>	<b>EU-financing million €</b>	<b>Financing from Russia million €</b>	<b>Financing from Finland/Sweden million €</b>	<b>Financing from Norway million €</b>	<b>Total financing million €</b>
Kolarctic	28.2	14.1	14.1	14	70.4
Karelia	23.2	11.6	11.6		46.4
<b><i>South-East Finland - Russia</i></b>	36.2	18.1	18		72.3
<b>Total</b>	<b>87.6</b>	<b>43.8</b>	<b>43.7</b>	<b>14</b>	<b>189.1</b>

For the period of the next seven years (2014-2020) the ENPI program will be simply a European Neighbourhood Programme (ENI) [5, f]. More information on ENPI and ENI - projects is available in:



ENPI, cross-border program European Neighbourhood and Partnership Instrument is managed by Regional Councils in Finland.

<http://www.southeastfinrusnpi.fi/>

ENI 2014-2020 (European Neighbourhood programme)

[http://ec.europa.eu/europeaid/how/finance/mff/financial\\_framework\\_news\\_en.htm](http://ec.europa.eu/europeaid/how/finance/mff/financial_framework_news_en.htm)

The main border crossing points are situated in the south-eastern part of Finland (Figure 21). The railway connections are from Vainikkala to Buslovskaja and from Imatra to Svetogorsk. According to information from the Finnish Transport Agency [2], the settlement of need for ENPI financing is going on in the Imatra-Svetogorsk area. There is a double-track rail under construction in Kamennogorsk, Russia. The objective is to open international railway traffic via Imatra in the future. At the moment the Vainikkala border crossing station has been a busy rail station in Finland. There are two new plans for double-track building in Finland as well; from Luumäki to Imatra and from Luumäki to Vainikkala. The projects are planned to be implemented by the PPP-model, but they are still an open question. [2, b]



**Figure 21.** The border crossing points between Finland and Russia [2].

The main road border crossing points are in the area Vaalimaa-Torfjanovka, Nuijamaa-Bushitshnoje, and Imatra-Svetogorsk. Road E18 from Turku to Vaalimaa goes near the Gulf of Finland and has significant connection to the harbors. There are fluent connections via Finland not only to Russia, but to Europe as well. In this term of office, the government has allocated money for planning the border-crossing area in Imatra-Svetogorsk. [2, b]

### ***3.6.6 Internal lending model of the state***

The so called “Swedish model” is the government's internal lending model, which could be a solution for the problematic Finnish budgetary procedure. The model has been in use in Sweden and has gained good experiences. The main parts of route investing are implemented from the state budget in Sweden. Already one fifth of projects are implemented by the internal lending model of the state. A positive feature of the model is that the investment of large transport infrastructure projects can be allocated for several years, even for ten years. The concessions could only be of interest during the time of construction. New projects could be implemented at a faster pace by this model. [2, g]

In Finland the problem has been the following; it has not been possible to fit the large transport infrastructure investments of the state to the cost frame based on operating costs, because the investments are not scheduled in state budget for economical holding time. The solution according to the “Swedish model” could be allocating the investments to coming years by the internal lending model of the state. Hereby, the proceeding could be by a cost-based budget, when the investment could be implemented outside the frame as the state’s internal lending and only after that the amortization and interests of the loan would be lifted into the budget subsection and frame. The benefit for the state is that the normal budget-financed and PPP and other post-financed projects in the state’s financial plan could be in an equal position. [2, g]

There is no internal lending model of the state in Finland at the moment, but if the “Swedish model” is considered workable, the applicability should be studied. The implementation of the model requires refreshing of the frame procedure in Finland. The idea of the model is that the agencies of the model are economically independent and they are able to finance the investments by a state-internal loan with interest. The Parliament is in charge of the common debt limit. When the agency cashes the loan, the payback starts when the project is finished. In practice the amortization of the loan bears a write-off of

the annual investment. The allowances for the agencies are scaled as cost-based according to the amount of payback and interest. [2, g]

The main benefits of the “Swedish model” are separation of significant investments from the projects of the government agency, awareness of the costs will be higher, and there would be guaranteed financing for profitable investments during impaired state economy. There are also some disadvantages: increase of state debt and the budgeted total amount because of increasing internal interests and repayment. The model of internal lending by the state could be a solution for interim financing. [2, g]

More information can be found in Swedish from

<http://www.esv.se/PageFiles/2177/alternativ-finansiering.pdf>

### **3.7 Critical bottlenecks and problems in financing infrastructure projects**

According to interviews [4], the worldwide economic crisis may complicate the obtaining of a loan. A remarkable note was that the banks and other lenders have become more careful, and obtaining loans may become more difficult. For example the bank interest rate is quite high – nobody wants to take loan with a 10% per cent interest. The problem is that the private sector has got into considerable debt.

The management of the EU fund was also seen challenging. The regulations and directives in the EU may differ from national rules. An engaged supranational agency is needed to promote the flow of project financing. The national interests of an individual EU member state may differ in defining the priority of projects.

On the basis of research interviews [4], some general bottlenecks are listed below:

- building railways is very expensive in Finland,
- the effects of an economic crisis,
- trade always contains a risk,
- the application process for financing is very long,
- financing is challenging in Europe,
- the problem is analyzing the rising of costs,
- private financing is a risk,
- interest risk,
- availability of funds,
- motivating foreign partners for markets in Finland,

- challenges in finding foreign bidders,
- large projects are expensive, and
- long-term commitment in PPP's.

The challenge is that the demand for transport infrastructure has been rising, and thus funding is needed. The government has not budgeted enough money for transport infrastructure in the period of administration, and projects cannot get enough financing anywhere. The maintenance and repairing of existing traffic connections is the most important traffic politic issue despite of the weak economic situation, says Satonen [26]. According to Satonen, the Finnish road network really needs extra funding, and developing the road network in Finland has to continue despite the financing problems. Satonen says that it is possible to get help from top technology. There are different solutions for intelligent traffic systems to limit traffic investments.



## 4 Financing instruments in Germany

### 4.1 Review of the existing financial sources

#### *Roads*

- **National funds:** The Federal Republic is responsible for financing the construction and maintenance of all motorways in Germany, as well as roads of national importance (Federal Roads). The motorways are partly refinanced by a truck toll. The toll rate per kilometer depends on the number of axles of the trucks and the euro-class of the engine. A truck toll has to be paid also on some federal roads, and there is plan to increase the number of feed-based federal roads. A motorway toll for passenger cars as well is actually under discussion, but the decision will not be made before the next election of the Federal Parliament in 2013.
- **Regional funds:** The Federal States, regions and townships are responsible for financing the construction and maintenance of roads of less than national and more than local importance. The municipalities are responsible for the financing and maintenance of local roads. In some major cities, a city tax for the use of the roads in the city centers is under discussion. Under specific circumstances, municipalities receive financial aid for the construction of inner-city roads from the Federal Republic according to the Municipality Transport Infrastructure Financing act.
- **Funds of the European Union:** For economically less developed regions, funding is possible under the European Fund for Regional Development (EFRD) and the European Cohesion Fund for road infrastructure.
- **International Financial Institutions (IFIs):** Co-financing with the European Development Bank is possible.
- **Private investors:** PPP is in a beginning stage in Germany. The first projects were the Warnow Tunnel in Rostock (see case description below) and the Herrentunnel in Lübeck. The first major project was the reconstruction and extension of motorway A 1 (see case description below). For these projects, consortia of road construction companies were formed to share the work and the financial risk. The consortia are not only responsible for the construction of the infrastructure but also for the maintenance for a defined time period, including safety and security. It is planned to refinance the investments of the consortia by user-tolls.
- **Other funds:** Not applicable.

## Railways

- **General:** Investments in the railway infrastructure are partly refinanced by fees which are paid for the use of the infrastructure. A railway company which uses the infrastructure of another railway company has to open its own network for all railway companies having a safety license for Germany and has to publish its prices and conditions for the use of its infrastructure. The prices and conditions must be authorized by the Federal Railway Office. The Federal Republic pays for the costs of the Federal Police, which is responsible for the safety and security of the railways. Crossings, including bridges and tunnels are financed by the body responsible for the road and the owner of the railway infrastructure.
- **National funds:** The Federal Republic is responsible for financing the construction and maintenance of railways in its ownership and for subsidies for the construction of intermodal terminals in private ownership. From 2013 on, also part-financing of the railway infrastructure in private ownership with non-discriminating access will be possible, as it will be necessary to bypass bottlenecks in the federal infrastructure in railway hinterland transport.<sup>1</sup>
- **Regional funds:** The Federal States, townships and municipalities are responsible for financing the construction and maintenance of railways in their ownership, e.g. port railways (deep sea and inland ports).
- **Funds of the European Union:** For less developed regions, co-financing of the construction of the railway infrastructure by TEN-projects, EFRD and the European Cohesion Fund is possible.
- **International Financial Institutions (IFIs):** Not applicable.
- **Private investors:** Private investors are responsible for financing the construction and maintenance for their own, in most cases non-public, infrastructure. Examples are the chemical, steel producing and mining industry.
- **Other funds:** Not applicable.

## Waterways

- **National funds:** The Federal Republic is responsible for financing the maintenance of deep-sea waterways, including the Kiel Canal, and of bridges, tunnels and ferries crossing artificial deep sea waterways. It co-finances the

investments for the construction and maintenance of inland waterways (without ports).

- **Regional funds:** It is the responsibility of the Federal States to co-finance the construction and maintenance of inland waterways. The Federal States and municipalities finance the infrastructure of public ports, inland ports and deep sea ports (landlord model).
- **Funds of European Union:** Not applicable.
- **International Financial Institutions (IFIs):** Not applicable.
- **Private investors:** Private investors finance their own, non-public ports. The supra-structure in public ports is also financed by private investors (operators).
- **Other funds:** Not applicable.

### *Airports*

- **National Funds:** The Federal Republic co-finances only the Airport “Willy Brandt” Berlin-Brandenburg as it will be the airport of the German capital.
- **Regional funds:** The Federal States and municipalities finance the construction and maintenance of the airports. They are re-financed by the airlines which have to pay for each arrival and departure of a plane, for passenger handling as well as for freight handling.
- **Funds of European Union:** Not applicable.
- **International Financing Institutions (IFIs):** Not applicable.
- **Private investors:** Private investors finance the construction and maintenance of their own, mostly non-public airports, e.g. Airbus Industries.
- **Other Funds:** Not applicable.

## **4.2 Review of financial models**

### *4.2.1 Financing cross-border projects*

The peculiarity of cross-border projects resides in the fact that one project is implemented under two different conditions. This includes a different application of the legislation, different prices of land plots, different dialing numbers, different waste water systems, and also different possibilities of funding measures. This can be a special advantage if it succeeds to filter out only the more preferred options, but it can be also a



problem which requires special attention in the following negotiations and individual agreements between the local communities on one hand and the possible operator on the other hand. Under these circumstances, a lot of time may go by and there exists the risk of disagreement and a total collapse.

#### ***4.2.2 Direct public funding***

The amount of direct public funding depends on the amount of the annual federal budget. The German Federal Government is, in accordance with the national constitution, responsible for the construction and maintenance of the federal transport routes (road, rail and waterway). The Government has assigned a part of these responsibilities to the Transport Infrastructure Financing Company (VIFG). The basis for the development and expansion of the transport infrastructure is the Federal Transport Plan (Bundesverkehrswegeplan – BVWP). It contains all envisaged road, rail and waterway projects and provides priorities. The BVWP is merely a frame program and planning instrument which is neither a financing plan nor a legislative act.

#### ***4.2.3 Public-Private Partnership***

In contrast to other countries, the potentials of public-private-partnerships are mainly unused in Germany. A distinction is made between A- and F-models.

- **A-model:** The private contractor is responsible for the planning, construction, financing and operating of a defined motorway section. The owner of this section is always the public client. The refinancing of the investment and operating costs are based on the “Autobahnmautgesetz” (German law for charging a motorway toll). The public client charges the toll for heavy vehicles and transmits them to the private contractor.
- **F-model:** The private contractor is responsible for the planning, construction, financing and operating of a special project (e.g. road, tunnel, bridge). The owner is always the public client. The F-model is based on the “Fernstraßenbauprivatfinanzierungsgesetz” (German law for financing infrastructure by private entities). The private contractor receives in return to his rendered services the right to charge a toll to refinance the investment and operating costs.

The total length of motorways of realized F-models in Germany is about 6.1 km and the length of realized A-models is about 230 km. This represents about 2 % of all German motorways.

### **A critical view**

In Germany, the governments of the Federal Republic und the Federal States are pushing the sale of public properties. They do this under the flag of PPP because “partnership” sounds better than “sale”. Privatization and PPP are destroying the public room, and democratic institutions, parliaments, as well as the rule of law and the welfare state, have become a farce. [2]

“The private sector is profit-oriented and will only participate in infrastructure works when it expects that the revenues will exceed the costs. This implies that it wants to reduce uncertainties about the costs and incomes of operations. Because of the higher uncertainties in low and middle-income countries, private investors tend to demand shorter payback periods than they would require in high-income countries.

Like any investor, it seeks guarantees about future expenditures and incomes. Governments have to feed private investors with information like audited financial statements about the utilities operations and commercial viability.”<sup>3</sup>

## **4.3 Examples of infrastructure projects**

### *4.3.1 National projects*

#### *4.3.1.1 Warnow Tunnel<sup>4</sup>*

The Warnow tunnel was the first privately financed project in Germany (type: F-model<sup>5</sup>). It was also the first infrastructure project where a toll was charged (6). The first planning of the Warnow Tunnel started already in the 1960s. In the early 1990s the traffic volume increased very strongly, which caused considerable economic and traffic problems. The consequences were absolute standstills on the main roads in the Hanseatic city of Rostock, environmental and noise pollution and delays, and thus a solution was needed.

On December 1st 1999 the first cut of spade for this complex and constructionally demanding project was turned. About 220 million EUR were invested by the shareholders of the “Warnowquerungsgesellschaft” (Owner) Bouygues Travaux Publics<sup>7</sup> and Macquarie Infrastructure<sup>8</sup> together with an international bank consortium under the

leadership of the Deutsche Bank<sup>9</sup>, the kfw<sup>10</sup>, and the EIB<sup>11</sup>. In the frame of the TEN-funding, the EU has made a grant of 8 % to facilitate the financing of the Warnow Tunnel.

The implementation of the plans for the tunnel was made possible by the “Fernstraßenbau-Finanzierungsgesetz (FStrPrivFinG)”<sup>12</sup> which came into force in 1994. This law provides the legal basis for private investments in road construction. For refinancing the project, the Warnowquerung GmbH & Co KG has concluded a concession contract with the Hanseatic city of Rostock.<sup>13</sup> The duration of the contract is 30 years with an expected number of daily users of 20,000-25,000.<sup>14</sup> According to Articles 2 and 5 of the FStrPrivFinG, the federal state governments are authorized to enact a regulation<sup>15</sup> which gives the private investor the right to levy a toll.

The Warnow Tunnel, which connects the two banks of the river Warnow, is made of six waterproof concrete elements, which were positioned with the immersion and lowering method into the river bed of the Warnow. Together with the portal buildings at the entrance and exit the tunnel has a total length of 790 m. The width of the tunnel is 22.5 m and the height is 8.5 m with a clearance height of 4.5 m. There are four lanes available for the tunnel users with a width of 3.50 m and 1.5 m wide emergency walkways. The speed limit is 70 km/h. Cyclists and pedestrians and the transport of dangerous goods are not allowed in the tunnel. There is a possibility of bus transport through the tunnel for cyclists and pedestrians. The construction time was 45 months.



**Figure 22.** Building dock and eastern tunnel portal with dredger<sup>16</sup>

The toll can be paid in many ways, e.g. with a special tunnel card (OSCARD), to personnel in the cash lane, at coin-operated-machines, with TAG or RFID and also with a credit card. The toll is 2 EUR (cash pay/1.50 EUR by subscription) per passage and per car through the tunnel. For trucks the toll amounts to 10 EUR (cash pay/7.50 by subscription). During the summer months the truck toll is raised up to 2.50 EUR for cars and up to 12.50 EUR for trucks.<sup>17</sup>

On September 12th 2003 the Warnow Tunnel was ceremonially opened by the Minister of Transport Dr Manfred Stolpe. More information about the Warnow Tunnel project is provided in the Appendix XVI.



**Figure 23.** Aerial view of the entrance of the Warnow tunnel<sup>18</sup>

#### **4.3.1.2 BAB 1<sup>19</sup>**

The expansion of BAB<sup>20</sup> 1 is one of the biggest private public partnership projects in the Federal Republic of Germany. It is one of four pilot projects of the Federal Government for the expansion of motorways and was initiated by the Federal Ministry of Transport, Building and Urban Affairs<sup>21</sup>. All the four pilot projects are A-model projects.

BAB 1 (a.k.a. the “Hansa route”) is one of the important road connections within the Federal Republic of Germany, which links the German seaports and Scandinavian countries with south and southwest European economic areas, especially France and the Benelux countries. A1 is a part of the trans-European network. The traffic volume between Hamburg and Bremen amounts currently to around 70.000-80.000 motor vehicles per day.<sup>22</sup> The share of freight traffic is around 25 %. The previous motorway was insufficient for this traffic volume, and thus a solution for this problem was necessary and urgent. For this reason, BAB 1 between Hamburg and Bremen was upgraded to six lanes in 26 construction sections (13 sections in each direction). During

the construction time the traffic flowed over another lane. The aim of the project was to increase efficiency and traffic safety on this section of the motorway.<sup>23</sup>

The client of the concession project was the Federal Republic of Germany, represented by the State of Lower Saxony. The contractor of the expansion and operation for the 72.5 km long distance between Hamburg and Bremen was the private project company “A1 Mobil”. Behind this company were the shareholders “Bilfinger Berger AG”<sup>24</sup> with a share of 42.5 %, “Laing Roads Ltd.”<sup>25</sup> with 42.5 % and “Johann Bunte”<sup>26</sup> with 15 %.<sup>27</sup> The project comprised among other things 74 bridges, 18 parking areas and service stations, 8 junctions, 1 interchange, 38 underpasses, 36 overpasses and 68 rainwater retention basins and sedimentation tanks. Furthermore, “A1 Mobil” is responsible for the maintenance of the lanes, buildings, road equipment and carrying out repair measures. “A1 Mobil” also organizes the operation service, e.g. winter service, protection at accident sites, waste disposal and outdoor facilities.



**Figure 24.** Aerial view of construction of BAB 1<sup>28</sup>

The Lower Saxony Federal State Authority for Road Engineering and Traffic Development accompanied the expansion project since its beginning. Also the planning documentation was made under their authority. This planning documentation provided

the regulatory basis for the construction and commissioning by "A1 Mobil". It also defined exactly for example where to build noise protection or which demolished bridges had to be replaced by temporary bridges. "A1 Mobil" was responsible for the negotiations to acquire the land needed for the expansion of BAB 1. The new owner of these land plots is the Federal Republic of Germany.



**Figure 25.** Construction of BAB 1 during traffic flow<sup>29</sup>

The expansion during traffic flow set special requirements to the construction procedure, logistics and traffic management. In order to ensure the traffic flow, the road works could only be carried out at every second construction section.<sup>30</sup> Also the users and the neighbouring communities had to accept numerous restrictions because of roadwork, blocking of traffic lanes and detouring.

The costs for the project amounted to approximately 650 million EUR until the end of 2012. The necessary financial resources were provided by "A1 Mobil" in collaboration with several banks. For refinancing the project, "A1 Mobil" receives a part of the truck toll during the 30-year contract period for this section of the motorway. The truck toll is levied by the Federal Republic of Germany. As the revenues depend on truck traffic, "A1 Mobil" receives a variable partial amount from the Federal Republic of Germany.

The official start of construction was on November 21<sup>st</sup> 2008. Until 2010, 14 construction sections were completed on schedule and the building site could be shortened by 12 of the total 72.5 km. The expansion of the remaining sections was carried out in the years 2011 and 2012. The official release for traffic was on October 11<sup>th</sup> 2012. More information about the BAB 1 project is provided in the Appendix XVII.

#### ***4.3.1.3 Investment of a medium-sized railway company in its infrastructure for hinterland transport<sup>31</sup>***

Globalized economy is not possible without seaborne trade. These trade volumes increased in the time period 2006 to 2010 from 7,534 million to 8,392 million tons, and an annual growth of 5 % is estimated<sup>32</sup>. Seaborne trade needs not only suitable capacities for transport by ships and transshipment in ports, but also suitable infrastructure capacities for hinterland transport.

For the economy of Germany and the neighboring countries, seaborne transport, and especially containerized foreign trade, is essential. E.g. in 2008, the year before the crisis reached the German seaports, in Hamburg, Germany's largest container port at the River Elbe, 9.7 million TEU were handled. In Bremerhaven, Germany's second-largest port at the mouth of the River Weser, 5.5 million TEU were transshipped. The share of the railways in hinterland transport of containers is about 30 % in Hamburg and nearly 50 % in Bremerhaven, and an annual growth of 6.8 % for Hamburg and 6.2 % for Bremerhaven is forecast by 2025. In addition, the JadeWeserPort in Wilhelmshaven with the capacity of 2.7 million TEU came into operation in 2012, and the share of the railways for this port is estimated to be 20 % (truck 20 %, transit 60 %).

The existing railway infrastructure of DB-Netz, the infrastructure company of the former State Railways Deutsche Bahn, is not suitable for managing these growing container flows. Although it is possible to increase the existing capacity by some technical and organizational measures, these measures will not be sufficient to meet the forecast growing of railway container hinterland transport. The railway nodes in Bremen and Hamburg were bottlenecks also before the crisis. Also constructing new railway connections is not a real alternative, as planning and approval of new transport infrastructure – rail as well as road – may need decades due to the relevant German legislation.



In this situation, the management of the medium-sized railway company EVB (Eisenbahnen und Verkehrsbetriebe Elbe-Weser) has decided to toughen up a part of their own railway network for container trains as a bypass for the existing overstrained hinterland connections. EVB operates a railway network of 235 km between the Rivers Elbe and Weser and passenger rail transport on its own network, as well as rail freight in hinterland transport on their own and external tracks nation-wide. The main commodities transported on the own network of EVB are timber, fertilizers, military equipment, liquids, dangerous goods, and building materials.

EVB has used the national reflation program for the absorption of the economic crisis and applied subsidies for the reconstruction of 74 of the 85 km railway section between Bremerhaven and Bremervoerde and ongoing via Zeven to Rotenburg in order to be able to operate container trains with axle pressure of 22.5 tons and maximum speed of 80 km/h on these sections. For these purposes, not only roadbeds and tracks had to be exchanged, but also a number of bridges and water channels had to be constructed anew. Some of them were about 100 years old. Simultaneously, some new crossing stations were built to increase the capacity of the connection. For safety reasons, new signals were installed, including new software for a railway control center. To avoid acoustic signals of the trains at level crossings to warn car-drivers and pedestrians (noise protection), a number of level crossings were equipped with technical installations to protect street users (24 red lights, 6 half-barriers), 14 crossings were closed and 7 locked.

Some new crossing stations were constructed to increase the capacity of the connection. Actually, one container train per hour can pass the line.

From the beginning of the planning up to the finishing of the realization of the reconstructions, only twenty months were needed. This short time period for the realization was possible due to close cooperation between the involved companies and bureaus.

In total, 50 million Euros were invested for these measures. The subsidies of the national reflation program of the Federal Government were complemented by subsidies from the European Union and the Federal State of Lower Saxony.

The lesson that can be learned by this example is that not only the main railway lines of the (former) State Railways should be viewed when preparing railway infrastructure for the growing hinterland transport. Also smaller infrastructure operators can contribute to the bypassing of bottlenecks, and because of their small hierarchy, in a relatively short

time period. More information about this project example is provided in the Appendix XVIII.

#### ***4.3.1.4 Funding programs for railway infrastructure***

The extension and maintenance of railway infrastructure is encouraged at the national and community level. The programs primarily support combined transport, but also the whole siding track system. Combined transport is used to exploit the full potential and the strength of the different modes of transport. Rail, inland waterway vessels and ocean-going vessels are only profitable at long distances and high transport capacities. They are suitable for combination with the more flexible truck transport, which carries out short range distribution.

Because the change of mode from the road to more environmentally friendly modes of transport is an important goal for environmental protection, combined transport is encouraged at the political level. The following sections review the most important funding programs and political efforts to support combined transport.

The first funding program is a **national program** of the German Federal Ministry of Transport, Building and Urban Affairs (BMVBS), which supports the **handling facilities of combined transport**.<sup>33</sup> Eligible investments are the acquisition of land, building construction and civil engineering, earthwork, quay facilities, track systems and road installations, handling facilities, equipment, and accompanying measures. Support can be granted for the expansion of areas and the development of handling facilities of combined transport. The aim of the program is to support the transfer of freight from road to rail and waterway. In addition, the benefits of the different types of transport will be more closely linked. Eligible are exclusively private companies. The railway infrastructure companies of the Federal Government are excluded. The economic efficiency of the installation by private capital must be excluded and the terminal must be owned by the applicant. The applicant must also have the right of a connection to the public transportation system. There should not be any competitive distortion because of the funding. The funding measure must not have been already started. The economic efficiency of the terminal, the expected relocation effect and the competitive situation must be described in detail. The funding will take the form of a grant and amount up to 80 % of the eligible costs. The applications must be made to the relevant authorization

authorities before the commencement of the funding measure. Project proposals in the field of installations of combined transport rail/road have to be submitted to the German Federal Railway Office<sup>34</sup>. Project proposals in the area of installations of combined transport waterway/road have to be submitted to the Directorate for Waterways and Shipping<sup>35</sup>. The directive is valid until the 31st December 2015.

On the basis of the **private siding funding program**, the **Federal Government of Germany** grants funding for new construction, expansion and reactivation of private siding tracks.<sup>36</sup> Eligible are exclusively privately-owned business enterprises. The aim is to shift the freight traffic from road to rail. The granting authority is the German Federal Railway Office. The amount of support must be at least 15.000 EUR (de minimis criteria), but the total financing of the measure has to be secured. The measure for which the application is made must not have already started when the application is submitted. The use of the siding track should not compete with existing transshipment facilities of the combined transport.

The last relevant railway infrastructure, the **national funding program** grants funding **for measures for noise abatement of existing railway lines on German Federal Railways**.<sup>37</sup> Support can be granted for active noise protection, e.g. installation of noise-reduction barriers, measures for noise reduction on bridges, or passive noise protection, e.g. installations of sound-insulated windows and ventilation equipment. Eligible are exclusively German Federal rail infrastructure companies. The granting authority is the German Federal Railway Office. The funding takes the form of non-repayable grants of the Federal Government.

Especially in **Germany**, combined transport is supported in additional ways. These are exclusively **statutory measures** to transport companies. In the following, some representative examples are described:

- Vehicles which are used in pre- and end-haulage to the closest suitable terminal of combined transport are allowed to have a maximum weight of up to 44 tons instead of 40 tons.<sup>38</sup>
- Vehicles are exempted from motor vehicle tax, if they are exclusively used in the pre- and end-haulage of combined transport.<sup>39</sup>
- Combined transport is partially exempted from the driving ban on Saturdays, statutory holidays and regular holiday times, if it does not exceed a distance of 200 km in pre- and end-haulage.<sup>40</sup>

On the basis of the **Marco Polo II** program<sup>41</sup>, the **European Union** encourages measures to **reduce congestion and to improve the environmental performance of the transport system** and to enhance intermodal transport. The aim is to make a contribution to an efficient and sustainable transport system. The following measures are co-financed:

- innovative actions to overcome the existing structural impediments in freight transport,
- motorway of the sea -actions,
- modal shift actions,
- traffic avoidance actions and
- common learning actions.

Eligible are projects which involve the territory of at least of two member states of the European Union or at least one member state and one close third country. Eligible are companies and consortia with branches in EU member states. The program is also open for applicant countries, the EFTA- and EEA-states, and optionally for close third countries. The funding will take the form of a grant. The amount of the subvention is limited to 35 % of the total expenditure. The costs for ancillary infrastructure should not be more than 20 % of the total cost. Regarding common learning, the subvention amounts to a maximum of 50 % of the total expenditure. The budget for the implementation of the program amounts to 450 million EUR for the period of January 1<sup>st</sup> 2007 until December 31<sup>st</sup> 2013. The commission shall issue detailed rules for the procedure for submission, selection and execution of the actions and publishing calls for proposals.<sup>42</sup> The programme is valid until December 31st 2013.

### ***4.3.2 Cross-border projects***

#### ***4.3.2.1 The Fehmarnbelt Fixed Link<sup>43</sup>***

The Fehmarnbelt Fixed Link should realize a direct, close and fixed link between Scandinavia and Europe. The aim of this link is a higher level of cross-border integration in the fields of science, business, labor market and culture. An additional benefit is shortened travel time and an increase in the level of employment during the construction phase and after opening.

Already before the concrete planning started, there was a wide debate about the preferred construction of the link: a tunnel or a bridge? At the beginning the preferred

solution was a bridge. The primary advantages of a bridge were lower investments and safety risks. Arguments against a bridge were especially environmental factors, such as invaluable consequences for the animal and plant world. Also the risk of collision of for example oil tankers with one of the bridge piers was an essential aspect against a bridge.<sup>44</sup> The calculations of risks and costs also showed that a tunnel<sup>45</sup> would be more favourable than a bridge.<sup>46</sup>

The Fehmarnbelt Fixed Link will be, with a length of up to 18 kilometers from tunnel portal to tunnel portal, the longest immersed tunnel for combined rail and road traffic in the world. Its height will be 8.9 meters within the cross-section and its width 42.2 meters with emergency exits at every 108 meters<sup>47</sup>. The tunnel will consist of a four-lane motorway and a twin-track railway, each in a separate tube. For the passenger rail transport the maximum speed is limited to 200 km/h, for the rail freight transport to 140 km/h and for road traffic to 110 km/h.<sup>48</sup>



**Figure 26.** Cross section and entrance of the tunnel<sup>49</sup>

The tunnel project started in 2007 with a declaration of intent by the German and Danish Ministers of Transport. This was followed by the signing of the State Treaty for the construction of the Fehmarnbelt Fixed Link in 2008, and its ratification in both countries in 2009.

In 2008 the total gross costs for the Fehmarnbelt Fixed Link were estimated to be 5.5 billion EUR. The general operating and maintenance costs (including reinvestments) would amount to 73.7 million EUR annually. The State of Denmark is responsible for the financing of the section from coast to coast and the Danish hinterland connection. The Link will be financed by tolls. To achieve this, Femern A/S (part of the Sund & Bælt Holding A/S which is 100 % owned by the Danish Transport Ministry) will take loans from the international financial market. The State of Denmark will acquire the ownership of the Link and provide State guarantees. For this reason, Femern A/S will get loans under the same conditions as the Government. The repayment of the loans will be occurred by the tunnel users in the form of a toll. The amortization period for the Fixed

Link and the hinterland connection should be 39 years. In addition, the European Commission has granted funds amounting to 267 million EUR for the time period 2007-2013.

For an efficient use of the Fixed Link, the expansion of the German and Danish road and rail network is essential. These connections are planned and financed by each state. In Germany this project includes the expansion of B 207 (E 47) between Heiligenhafen and Puttgarden to four lanes, the electrification of the railway line between Lübeck and Puttgarden, and securing a sufficient capacity of the single-track-section between Bad Schwartau and Puttgarden. The construction costs in Germany are estimated to be 840 million EUR. These costs are borne by the Federal Government. The Federal State of Schleswig-Holstein will take part in the costs with the amount of 60 million EUR. The hinterland connection needs to be developed also in Denmark. The following measures are planned: electrification of the railway line between Ringsted and Rødbyhavn, double-track expansion of the railway line between Ringsted and Masnedø and between Orehoved and Rødbyhavn, and the expansion and optimization of motorway E 47 between Rødbyhavn and Sakskøbing. These costs are estimated to be 1.2 billion EUR and will be financed in the same way as the Fehmarn Fixed Link.

The start of construction work is scheduled for 2014 and (after multiple corrections of the timetable) the opening is planned for 2020.<sup>50</sup> According to a traffic forecast, the tunnel will be crossed on average by 8,000 motor vehicles daily after the opening. In the following 5 years, an increase of on average 10,800 motor vehicles daily is expected. In a prognosis for the railway traffic for the year 2025, it is expected that 78 freight trains and 40 passenger trains will use the Fixed Link daily. However, the prognosis requires that the ferry traffic is closed after the opening of the tunnel. This decision has to be made by the owners, however. More information about the Fehmarn Fixed Link project is provided in the Appendix XIX.

#### ***4.3.2.2 Europark Coevorden-Emlichheim***

The Europark is an industrial park up to 350 ha at the German/Dutch border between the municipalities of Coevorden and Emlichheim. The project started in 1997 and is still in process. It is realized by the Europark Coevorden – Emlichheim Entwicklungsgesellschaft mbH, a cooperation between the Dutch municipality Coevorden and the German municipality Emlichheim.



**Figure 27.** Aerial view of the Freight Village Europark Coevorden-Emlichheim<sup>51</sup>

The Europark is developed step by step in four separate phases. The first phase was completed in 2004. In the Netherlands 83 ha and in Germany 20 ha were exploited, including the industrial port and the main access road. In the second phase (2005 – 2007), additional 90 ha were developed on the German side, including infrastructure measures such as the access road from the port and the new construction of the railway container terminal. The third and fourth phases are in process. These phases include further 130 ha in the Germany. The development of this area is dependent on demand. The legal prerequisites for step three are finished. The road infrastructure was financed by the municipalities Coevorden and Emlichheim with subsidies from the Province of Drente, the Federal State of Lower Saxony and the European Fund for Regional Development. The railway to the intermodal terminal (EuroTerminal) was constructed by Bentheimer Eisenbahn (BE), a private railway company, and paid by the Federal Republic of Germany (6.5 million EUR), the Kingdom of The Netherlands (3.7 million EUR), and BE (2.3 million EUR). The canal and port were financed by the municipality of Coevorden and the Dutch Region (Samenwerkingsverband Noord Nederland).





**Figure 28.** Building constructed on the border Germany/Netherlands<sup>52</sup>

The terminal was developed to one third on German territory and to two thirds in the Netherlands. The EuroTerminal has an important hinterland function for nearly all European countries, combining rail and road transport and providing a direct connection to the German railway network. In addition the EuroTerminal is linked to the biggest West European ports by the inland port of Emlichheim Coevorden. Because of an existing state treaty between the former Kingdom of Hannover and the Kingdom of the Netherlands the operation of the cross-boarder terminal can be operated without any legal problems. The technical expertise and also the possibility of funding end at the border. In contrast, the German railway law<sup>53</sup> and also the German regulation for the transportation of dangerous goods are applicable for the whole of the terminal. At the moment of the departure of trucks the law of the Netherlands is applicable. The terminal is operated in the legal form of a BV (stands for “Besloten vennootschap met beperkte aansprakelijkheid” and means a limited liability company). The owner of the terminal is the Bentheimer Eisenbahn, and ETC BV is the operator.



**Figure 29.** EuroTerminal<sup>54</sup>

The road infrastructure crosses the border several times. The responsibility for road cleaning, winter road maintenance etc. is governed by an agreement. Because of different laws, some aspects have to be considered. According to the German law the visual appearance of industrial buildings is subordinative. According to the law of the Netherlands an industrial building has to be designed in an esthetic way. Despite of the legal complications, the cross-border location offers also legal benefits. For example a waste incineration plant was built on the German side and the corresponding chimney in the Netherlands. This is due to the fact that the ridge height exceeds the maximum allowed height in the Netherlands and that in Germany flue gas scrubbing would be necessary. This way a restriction on one side of border can be a possibility for the other side. More information about the Europark project is provided in the Appendix XX.



**Figure 30.** Different law – different appearance<sup>55</sup>

#### **4.4 Critical bottlenecks and problems in financing infrastructure projects**

According to a case study of the “Warnow Tunnel”, a relevant problem is the refinancing of the project. Since the official opening, the tunnel has been used by millions of car drivers. In May 2010 the number of users reached the 23-million mark. This means on average 11,500 users daily, but the expected number of daily users was 20,000. So the Hanseatic City of Rostock extended the concession from 30 years to 50 years to avoid insolvency of the operator.<sup>56</sup> The reasons for the Warnow Tunnel project were to create a quick, safe, convenient and cheap alternative which reduces congestions and environmental pollution at the same time. The results of the study revealed, however, that the tunnel is not as economic as planned. In fact the traffic through the tunnel is merely half of the expected traffic. The reasons for this are obvious: on one hand the truck toll is too high, and on the other hand, the traffic is not directly routed into the tunnel. Also the alternative free-of-charge traffic routes are not conducive. The same problem exists at another German PPP-project “Herrentunnel”. The original expected number of users was 37,000 on average, but the real number was 19,000 on average in 2009 and 17,000 in 2010.<sup>57</sup> It remains to be seen if the tunnel can be operated in an economically sustainable way in the near future.

Also the purchase of the needed areas could be a problem. An expropriation is permitted only for the public good, Article 14 GG (German constitution). In addition, a special law has to regulate the detailed conditions about the compensation for the original owner (Junktin-clause of Article 14 (3) GG. The expropriation has to be the last resort to realize the project. In general the owner of the preferred land plot is not in agreement with the offer to buy of the responsible authority or contracting company. In this case an expropriation procedure has to be conducted, which could block the project additionally for a long time.

#### **4.5 Environmental assessment**

Further critical points are the legal requirements for the protection of nature and species. Because as soon as threatened animal species live in the preferred project area, the project will be blocked. Species protection is an important interest of nature protection and can conflict, as a public policy issue, with the building project. In this case the project depends on a consideration between the special need for protection of the species and the interest of the realization of the project. In Germany one of the basic requirements of certain public and private building projects (e.g. infrastructure projects such as roads, railways or airports<sup>58</sup>) is an environmental impact assessment on the basis of the “Umweltverträglichkeitsprüfungsgesetz” (UVPG)<sup>59</sup>. Without this assessment, the project will not be approved. The act is intended to ensure that the environmental effects are determined, described and assessed early and comprehensively to ensure effective environmental provisions. The consequence of this procedure is that it could take a long time and lead to risks and uncertainties about the future of the project. According to the need of environmental protection also the “Bundesnaturschutzgesetz” (BNatSchG) prohibits the implementation of specific projects in case of risks for nature and landscape, § 34 I BNatSchG.

#### **2.6 Preparation funds for infrastructure projects**

The costs for the preparation of infrastructure projects such as feasibility study, environmental impact assessment, economic analysis etc. are paid out of the budgets of the bodies which will be responsible for financing the construction of the planned infrastructure.



## **5 Financing instruments in the Republic of Belarus**

### **5.1 Introduction**

The Republic of Belarus tries to make full use of the advantage of its unique geographic location. The Program of the Logistics System Development for the Period up till 2015, whose important components are the measures of the creation and development of transport logistics, was approved by resolution N1249 of the Council of Ministers of the Republic of Belarus on August 29, 2008.

The goals, tasks and ways of the development of the logistics system of the Republic of Belarus for the present period were determined in the Program, classification of the logistics centers was presented, and the main approaches for their creation were developed. The land plots for the construction of logistics centers were determined, the mechanism of the preferential policy creation for potential investors and the system of criteria for their selection proposed, the methodological approaches to the management of the logistics system of the Republic of Belarus developed, and approaches to the information provision of the management and operation of the logistics system of the country defined, etc.

To improve the management of the transportation of foreign trade and transit goods traffic it is envisaged to locate regional transport logistics centers for common use, first of all in the free economic zones “Minsk”, “Brest”, Vitebsk”, “Gomel-Raton”, “Grodnoinvest” and “Mogilev”. The expediency of the location of regional transport logistics centers in the regional main cities of the Republic is stipulated by the location of the most developed transport junctions and also by the fact that they all are in places of international transport routes.

The investment activity in the Republic of Belarus is carried out on the basis of Investment Code N37-3 of the Republic of Belarus adopted on 22 June 2001 (adopted by the House of Representatives on 30 May 2001 in the wording from November 9, 2009).

The state has created appropriate conditions to attract investors and for the construction of logistic centers, including offering tax preferences. These are Decree N10 of the president of the Republic of Belarus from August 6, 2009 “About the creation of additional terms for the investment activity in the Republic of Belarus”, Decree N413 of the president of the Republic of Belarus from August 6, 2009 “About giving the physical and juridical persons the powers to represent the interests of the Republic of Belarus on issues of drawing investments into the Republic of Belarus”, Directive N4 of the

president of the Republic of Belarus from December 31, 2010 “About the development of the entrepreneur initiative and stimulation of business activity in the Republic of Belarus”, and certain articles of the Tax and Investment Code of the Republic of Belarus.

The Council of Ministers has approved the plan of measures on the increase of the positions of the public of Belarus in the logistics index rating.

## **5.2 Transport complex of the Republic of Belarus**

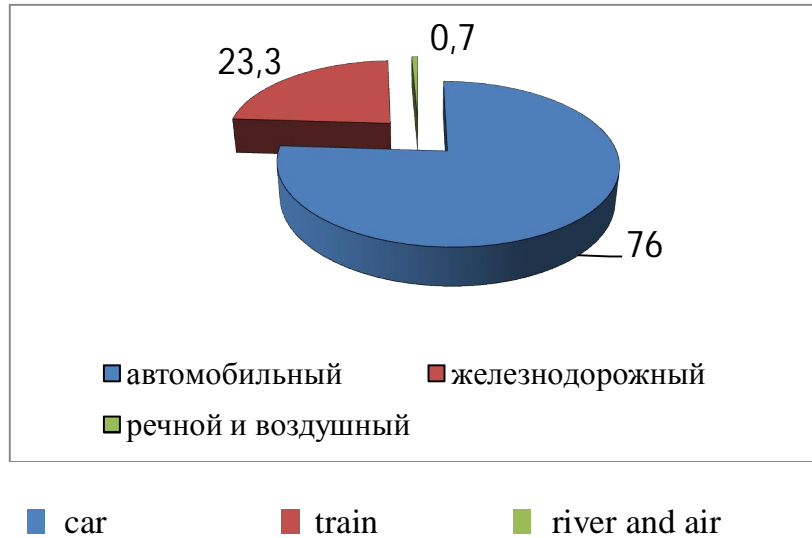
As the world practice shows, the most important factor of economic growth is the formation of a logistics system comprising various spheres of activity in the country.

The evolution of logistics systems proves that they become one of the most important strategic tools in the competition not only for separate companies but for the country on the whole. The situation in the Republic of Belarus is slightly different. Due to reasons of historical, political and economic character there is a certain technological lag in the sphere of logistics.

In the Republic of Belarus the transportation of goods and passengers is carried out by six types of transport: automobile, railroad, air, sea, city electrical transport (trolley-buses, trams, underground) and by pipelines. There are 381 transport companies.

The structure of goods and passenger transportation by different types of transport in the Republic of Belarus is presented in Figures 31 and 32.

The fleet of trucks in the Republic is around 220 thousand. There are more than 36 thousand and more than 1.2 million cars. The length of motor car roads is 85.7 thousand kilometers. 74 thousand km of these roads are ones with a hard surface.



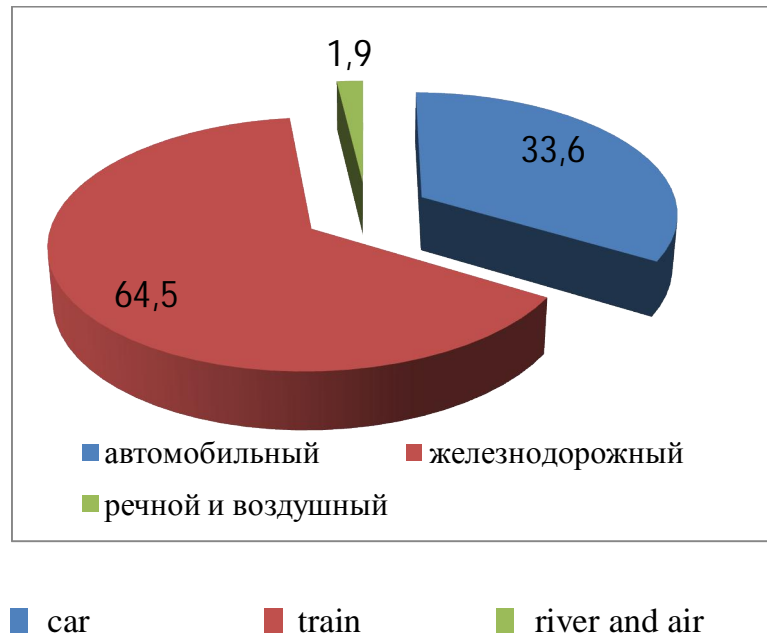
**Figure 31.** Structure of goods traffic by various types of transport in the Republic of Belarus

The length of railroads for common use is 5.5 thousand km, including 897 km of electric railways. To perform loading work at railway transport, 247 stations and 56 loading yards have been set up. At Belarusian railways there are 16 container terminals to process heavy-load 20-foot containers, at 7 of which it is possible to handle 40-foot containers.

Water transport provides transportation of goods and passengers on inland waterways, whose length is 2 thousand km. Processing of goods is possible in 10 river ports located in the basins of navigable rivers in the Republic.

The system “Bug – Dnieper – the Bug Canal” going out to the Black Sea is included in the structure of European inland waterways. The port management is equipped with floating and gantry cranes, with automatic loading lines of high-speed processing of vessels. The production potential of the ports make it possible to transport more than 8 million tons and to process 15 million tons of goods a year.





**Figure 32.** Structure of passenger transportation by various types of transport in the Republic of Belarus

The shortest air routes from Japan, Australia, and Singapore to Europe, and from America to the Middle East pass through the air space of the Republic. Every day up to 700 flights of airplanes that belong to more than 920 air companies from 96 countries get a safe passage here. There are 7 airports in the Republic. Regular flights by more than 20 international airlines are done from Belarus.

The national airport “Minsk” is the “air gate” of the capital of the Republic. Its capacity is 5.8 million passengers a year. The runway of the airport is 3.6 km long. It can house 34 airplanes at the same time. The loading complex occupying an area of 2.8 thousand square meters makes it possible to process over 400 ton of cargo per day.

Each of the regional airports located in Brest, Mogilev, Grodno, Vitebsk and Gomel has the status of an international port and has frontier, customs and other services at disposal that are necessary to manage international flights. The ways connecting the countries of the EU and Russia, Kazakhstan and other Asian counties go through the Republic of Belarus.

Two trans-European rail transport passages, defined as number “II” (West – East) and number “IX” with the branch “IXB” according to the international classification, cross the territory of Belarus. Owing to the development of rail transport passages going across

the Republic of Belarus, the technologies of transportation of goods by direct fast trains are constantly improved.

The following fast containers trains go along the Belarusian railways:

- “Mongolsky”, a combined transport train “Viking” (Klaipeda – Minsk – Odessa/Ilyichevsk);
- “Kazakhstan vector” (Brest – Minsk – Aktobe – Arys);
- “Vostochny veter” (Berlin – Brest – Minsk – Moscow);
- vector” (Brest – Minsk – Ulan-Ude – Ulan-Bator);
- “Volkswagen – RUSS” (Brest – Minsk – Kaluga).

### 5.3 Logistics System of the Republic of Belarus

The program of the logistics system development in the Republic of Belarus for the period up to 2015 determines 50 plots for the construction and setting up of logistics centers in the Republic. The scheme of the location of logistics centers in the Republic of Belarus is presented in Figure 33.

In 2010, there the transport – logistics center “Minsk – Beltamozhservice” (RUP “Belatamozhservice”) was set into operation 17 km from the Republican motor car road P- 1 Minsk – Dzerzhinsk (the Minsk region), very close to the two important European transport passways (31), the logistics center “Ozertso – Logistic” (OAO “Trade – Logistics center “Ozertso – logistic”) 1 km from Minsk circular motor car market “Malinovka” (43), the logistics center “Twenty Four” (OOO “Twenty Four) in the village of Tabory in the Minsk region, 9 km from Minsk circular motor car highway in the direction of Minsk – Grodno. In 2011, the first complex of the transport – logistics center “Brest – Beltamozhservice” (RUP “Beltamozhservice”) (1) started operating in the city of Brest, 0.6 km from highway M-1/E30, and the first part of the logistics center IP “BLT – Logistic” in the free economic zone “Minsk” was set up 1.5 km from the intersection of highways M-1/E30 and M-4 Minsk - Mogilev (36).

RUP “Beltamozhservice” is the largest operator on the market of logistics services in Belarus. It has three levels and consists of the main logistics center (republican), regional logistics centers (on the basis of branches in the regions) and a territorial center (on the basis of operated customs terminals).

Currently RUP “Beltamozhservice” carries out work on the creation of a net of logistics centers. Its main aim is the creation of an efficient multi-level system of

transport – logistics centers for rendering full complex of services in the sphere of customs, transport – expedition, warehousing and information logistics.

Currently, according to the program of the logistics system development of the Republic of Belarus for the period up to 2015, 23 investment projects on the construction of logistics centers on 22 plots of the 50 defined ones are being carried out. The largest investment projects on the construction of logistics centers in the Republic of Belarus are presented in Table 8. In addition, 17 investment projects on the construction of logistics centers not included in the program are carried out in the Republic. Investment agreements have been made for 16 of them.

The choice of the location of logistics centers is made after taking account of their vicinity to the largest motor car and railroad transport routes along the main good traffic ways going through the territory of Belarus. Consequently, the construction of logistics centers is carried out mainly in Minsk, which even today is the largest goods distribution center of international level that provides processing and trans-shipment of goods not only to the CIS countries, Baltic States and other foreign countries by using all possibilities of automobile, railway and air transport.

The largest projects in the construction of logistics centers in the Republic of Belarus are the transport-logistics center COOO “BelVinges-Logistics” in the Volozhin area (the settlement of Rakov) (34); the logistics center “Prilesye” which the famous Iran engineer-construction company “Keyson” takes part in (37); the transport-logistics center in the area of “Agrokombinat Dzerzhinskiy” in the village of Rubilki in the Dzerzhinsk area (OOO “Logopark Svisloch”) (39); and the international multimodal logistics park in the area of the National airport "Minsk" with the participation of “KMK-logistics” and the Belgian AOI NV (33).



**Figure 33.** Scheme of the location of logistics centers in Belarus

Altogether 16 logistics centers covering more than 400 ha will be set up in the territory of the capital area according to the program of logistics system development during the period up to 2015. According to specialists' calculations, putting them into operation will make it possible to create 10 thousand jobs.

The creation of logistics centers is planned to be carried out with two main approaches:

1. by modernization and re-equipment of existing industrial and warehouse property into modern logistics centers. The main part of the warehouses operating in Belarus can be categorized to warehouses of type "C" and "D" according to their technical state and equipment. The program determines the perspectives of development of modern warehouse complexes of type "A" and "B" which will operate according to the logistics technologies of goods traffic. There are 8947 warehouses of wholesale trade that occupy special premises in the Republic of Belarus. Their total area is 2 593.8 thousand sq. m. Actually, 8 758 warehouses are in use, which makes 97.7% of the total. Almost half of the warehouses (46%) are situated in the city of Minsk;
2. by creation of logistics centers from "zero" level with the choice of the plot and further construction of the complex. The regional executive committees have made

decisions concerning all the plots of withdrawing them for subsequent auctions to ensure the right to conclude the rent agreements. If the investment agreement is made on the basis of the Decree of the president of the Republic of Belarus N10 from 06.08.2009, the plot can be rented without an auction.

**Table 8.** Perspectives of logistics center construction in the Republic of Belarus for the period up to 2015

<b>Location (numbers according to the scheme of location)</b>	<b>Infrastructure characteristics</b>	<b>Investor</b>
1. Brest, Leit.Ryabtsev str.,44 (7)	Multimodal transport-logistics center of “A” type	ZAO “Belterminal”
2. Minsk, the area of National airport “Minsk” (FEZ Minsk) (33)	International multimodal transport-logistics park, including a customs-terminal complex, an information-logistics center, a business center	IOOO “AOI Logistick Park”
3. Minsk region, Volozhin area, 1 km from settl. Rakov (34)	Warehouses of type “A”, refrigerator – 10 thousand m <sup>2</sup> , offices of type “B” - 4 thousand m <sup>2</sup> .	COOO «BelVinges-Logistic»
4.Minsk region, 8 km from Minsk,at intersection of highways M1/E30 и M4 (FEZ “Minsk”), (37)	Warehouse complex of type “A” - 200 thousand m <sup>2</sup> , intermodal terminal - 80 thousand m <sup>2</sup> , offices – 13 thousand m <sup>2</sup> , trade – exposition zone - 12 thousand m <sup>2</sup> , customs terminal and objects of roadside service	IOOO «Logistics center «Prilesye»
5. Minsk region, industrial complex Kolyadichi, 4 km from Minsk circular motor car road (38)	Warehouses of type “A” - 150-170 thousand m <sup>2</sup> , office center - 0.65 thousand m <sup>2</sup> .	OOO «Sem vysot»
6. Minsk region, village Rubilki, very close to the highway M1/E30 (39)	Transport – logistics center of type “A”	IOOO «Logopark “Svisloch”
7. Minsk, in the area of OAO grokombinat “Zhdanovichi”, close to highway M6 (40)	Logistics center of type “A”. Total area of warehouses 20 thousand m <sup>2</sup> , of offices 1 thousand m <sup>2</sup> .	Company “Belgos pischeprom”
8.Minsk region, village Novaya Vyoska, 3 km from highway M6 (41)	Agrarian- foodstuffs logistics center with developed service and transport infrastructure.	COOO “Trade – Logistics center “Zhdanovichi”
9. Minsk region, settl. Privolny, close to highway M1 и M4 (42)	Transport – logistics center of type “A”	OOO «”Limo – Star”
10. Minsk region, village Dubovlyany (46)	Customs – warehouse complex of type “A”	ZAO “Lekt”

It is planned to construct and locate transport-logistics centers in the regional centers and other cities that are situated close to the main European transport passways going through the territory of the Republic:

- Number “II” (Berlin – Warsaw – Minsk – Moscow – Nizhni Novgorod);
- Number “IX” with the branch “IXB” (Kiev – Minsk – Vilnius – Kaunas – Klaipeda/Kaliningrad);
- Motor car highways of republican importance.

**Table 9.** Characteristics of logistics centers and plots for their construction according to the Program of Development of the Logistics System of the Republic of Belarus for the Period up to 2015

Location of logistics centers and the plots for their construction (their numbers according to the scheme of location)/investor	Area, distance from the main highways	Availability of access roads	Availability of engineering infrastructure/notes
1	2	3	4
<b>Brest region</b>			
<b>1. Logistics centers RUP “Beltamozhservice”:</b>			
1.1 Brest, Leit.Ryabtsev str, 45 (1)	3.2 ha; 0.6 km from highway M-1/E30	Motor car road is available, railroad is being designed	Available. Should be reconstructed
1.2 Service zone of motor car road admission point “Kozlovichi-2”, Brest (2)	13.2 ha; highway M-1/E30	Being designed	реконструкции Being designed
<b>2. Plots for construction of transport – logistics centers:</b>			
2.1 Transport-logistics center COOO “Brestvneshtrans” Brest, Dubrovskogo str, 36 (3)	20 ha; 1 km from the highway Kozlovichi – Moscow motor car cargo passway	Motor car and railway	Available / modernization up to 2015 of the sheltered loading warehouse, area 70 thousand m <sup>2</sup>
2.2 Baranovichi, industrial zone “Borovtsy” (4)	from 4 to 25 ha; adjoins highway P-2 Kobrin–Stolbtsy and railway Lida–Baranovuchi	Motor car and railway, to M-1 – 200 m	Artesian well and gas pipe-line of medium pressure (400 m), electricity transmission line 110 кВ (2.2 km)
<b>3. Plots for construction of logistics centers:</b>			
3.1 Brest, area of the former village of Kozlovichi (5)	5,8 ha; 0.5 km from highway M-1/E30	Nearest railway goods station Brest-Severny – 4 km, close to highway M-1/E30	Main communications planned by the construction project of the “Kozlovichi” area

3.2 Plot in the area of the village of Druzhba, the Brest region (6)	3 ha; 2 km from highway M-1/E30	Close to highway P-83, nearest railway goods station Brest-Severny – 7 km	LEP-110 (electricity transmission line, construction of everyday and rain canalization wells)
<b>4. Transport – logistics center ZAO “Belterminal”</b> Brest, Leit.Ryabtsev str., 44 (7) (ZAO “Belterminal”)	13 ha; 0.5 km from highway M-1/E30	Motor car and railway (narrow and wide track)	Available
<b>Vitebsk region</b>			
1	2	3	4
<b>1. Plots for construction of transport – logistics centers:</b> 1.1 Vitebsk region, KUSHP “Vorony” (2 km from Voronov ring in the direction of the airport) (11) 1.2 Vitebsk region, KUSHP “Vorony” (7 km from Voronov ring to village Baryshino in the direction of the airport) (12) <b>2. Plots for construction of logistics centers:</b> 2.1 Gorodokskiy area, settl. Yezerische, Leninskaya str., 143 A (16) (“Detskoselskiy Gorodok”)	138 ha; distance from the mains 0.1 km  95 ha; distance from mains 0.1 km  2.7 ha; adjoins highway E-95	Motor car, airport – 1.5 km  Motor car, railway, airport – 4 km  Motor car	Gas pipe-line available, possibility of electricity provision   Possibility of electricity provision (300 m from TP), boiler-house close. Gas pipe-line, no canalization
<b>Gomel region</b>			
1	2	3	4
<b>1. Logistics center RUP “Beltamozhservice”</b> <b>Gomel, Borisenko str., 3 (21)</b>  <b>2. Plots for construction of transport – logistics centers:</b> 2.1 The plot is near the settl. Zyabrovka, Gomel region, Gomel area (22)	2 ha; 1.5 km from highway M-10, border of the Russian Federation – Gomel–Kobrin, 6 km from the circular highway of Gomel  200 ha; 12 km from highway M-8 (E-95)	Motor car  Railway adjoins the plot, the local roads cross here	Available. Reconstruction necessary  Engineering infrastructure is not available, laying of communications is necessary, possibility of water, gas and electricity supply

2.2 Setting up of a transport – logistics center is planned in the area of the Lukskiy village, Zhlobin area (23)	20 ha; nearest railway branch Zhlobin – Rogachyov is at the distance of 300 m, highway M-5 Minsk–Gomel is at the distance of 200 m	Motor car, railway	(500 m), canalization (2 km)
<b>3. Multifunctional logistics center of regional importance on the basis of OOO “Dina” Mozyr, Privokzalny lane (24) (OOO “Dina”)</b>	1.5 ha; 1.,5 km from mains in directions Mozyr – Kiev, Mozyr 0-Zhitomir, Mozyr – Minsk, Mozyr – Gomel, Mozyr – Brest	900 m of railway branch is owned, access roads are in excellent condition	Available

#### Grodno region

1	2	3	4
<b>1. Logistics centers RUP “Beltamozhservice”:</b> Service zone of the motor car roadside point “Kanenny Log”, Grodno region, Ostrovetskiy area, village Muravyevka (26)	10 ha; adjoins highway M-7/E28 Minsk–Oshmyany–border of Lithuania	Being designed	Being designed
<b>2. Plots for construction of transport – logistics centers:</b>			
2.1 Plot is in the area of multiprofile area “Auls” (27)	106.7 ha; 3 km	Available	Available
2.2 Plot adjoins highway M-6 Grodno – Minsk – Moscow and is in the area of Grodno airport (28)	100 ha		Partly available
2.3 The plots is in the city of Lida, close to highway M-6 Grodno – Minsk - Moscow (29)	24.8 ha		Partly available

#### Minsk region

1	2	3	4
<b>1. Logistics centers RUP “Beltamozhservice”:</b>			
1.1 KMK “Inturist”, Minsk region, 17 km of highway P-1 Minsk - Dzerzhinsk (31).	8.89 ha; adjoins highway P-1 Minsk – Dzerzhinsk	Motor car	Available. Reconstruction needed
1.2 Minsk region, village Shchitomirichi, 3 km from Minsk circular road on highway P-23 Minsk - Mikashevichi (32)	10 ha; adjoins highway P-23 Minsk - Mikashevichi, 3 km from Minsk circular road and 9 km from M-1/E30 Brest–Minsk–border of Russian Federation	Motor car and railway being designed	Being designed



<b>2. Plots for construction of transport – logistics centers:</b>			
2.1 The location of the transport – logistics center (park) is supposed to be in sector 2 of plot 4 FEZ “Minsk”, on land bordering on the area of RUP “National airport Minsk”, Smolevichi area. There is all necessary communications and infrastructure here (33) (IOOO “AOI” Logistic Park”)	81 ha; on the border of the plot there is a highway going to highway P-69 and further on the highway M-1/E30 – 25 km	Available	Not available, connection with the engineering communications of the airport is possible (located at the distance of 500 m from the construction plot)
2.2 Volozhin area, the plot adjoins highway M-6 Grodno - Minsk (34) (COOO “BelVingesLogistic”)	10 ha with the possibility of expansion up to 20 ha;	Available	Partly available
<b>3. Plots for construction of logistics centers:</b>			
3.1 Territorial unit FEZ “Minsk” – “Obchak” – sector 1 of plot 2 FEZ “Minsk” (36) (IP “BLT Logistic”)	7 ha; the plot is at 1.5 km from the intersection of highways M-1/E30 and M-4 Minsk – Mogilev		Not available, it is possible to enter the engineering communications of SP ZAO “Unison” / 10 000 m <sup>2</sup> , warehouses of type “A”
3.2 Territorial unit of FEZ “Minsk” – “Prilesye” – sector 2 of plot 2 FEZ “Minsk” (37) (IOOO “Logistics center “Prilesye”)	55 ha; the plot is at the intersection of highways M-1/E30 and M-4 Minsk–Mogilev	Available	Not available / 200 000 m <sup>2</sup> of warehouses of type “A”
3.3 On lands of OAO “Agrokombinat Dzerzhinskiy” in the area of village Rubilki of Rubikovskiy village council (39) (OOO “Logopark” Svisloch”)	45 ha; close to highway M-1 Brest–Moscow	Motor car	Currently not available
3.4 On lands of RUP “Agrokombinat “Zhdanovichi” (40) (OOO “M Logistic - City)	15 ha; close to highway M-6 Minsk–Grodno		
3.5 On lands of settl. Privolny (42) (OOO “LimoStar)	5 ha; close to highways M-1 Brest–Moscow and highways M-4 Minsk–Mogilev	Motor car	Currently not available
3.6 Village Ozertso, 1 km from Minsk circular road (43) (OAO “Trade-logistics center “Ozertso-logistic”)	16 ha; distance from main highways 1 km	Motor car and railway	Available
3.7 Trade-logistics center on a plot within the area of Minsk region (in the area if village Shchomyslitsa) (44) (OOO “InterStroiPortalPlus”)	25-35 ha; at the exit from Minsk on highway M-2 in the area of village Shchomyslitsa		Not available

3.8 Trade wholesale –logistics center SP OAO “Spartak” on lands of RUSPP “1 <sup>st</sup> Minsk ptitsefabrika” (Minsk region) within the area of highways MKAD–Zaslavl–Kolodishchi–ZAO “VZ “Akvabel”–protected area “Kuropaty” (45) (SP OAO “Spartak”)	12 ha; within MKAD (area of protected zone “Kuropaty”)	Motor car	Architectural construction project is being developed
3.9 Transport-logistics center ZAO “LEKT” on lands of Minsk region (vil. Dubovlyany) (46) (ZAO “LEKT”)	9.3 ha; adjoining	Available	Available
4. <b>Transport – logistics center OAO “Belmagistralavtotrans”</b> Minsk, Babushkina str, 39, industrial complex “Kolyadichi” (30) (OAO “Belmagistralavtotrans”)	10.4 ha; 4 km from MKAD	Motor car	Available. Reconstruction is necessary / 10 000 m <sup>2</sup> of warehouses
5. <b>Transport – logistics center OOO “KraftTrans”</b> Minsk region, vil.B.Trostenets (35) (OOO “KraftTrans”)	1.2 ha with expansion of plot up to 3.5 ha; 1.2 km from MKAD	Motor car	Available. Reconstruction is necessary
6. <b>Logistics center OOO “Twenty four” on lands COOO “NTS” in the area of villages Tabory and Degtyarevka (41) (OOO “Twenty four”)</b>	6 ha; 3 km from M-6 Minsk–Grodno	Motor car	Available.
7. <b>Logistics center TCUP “SHATE-M PLUS”</b> Minsk region, settl. Privolny (two plots, 3 ha each) (38) (TCUP “SHATE – M Plus”)	6 ha; intersection of M-1 and M-4	Motor car	Available  Available on one plot
<b>Mogilev region</b>			
1	2	3	4
1. <b>Logistics center RUP “Beltamozhservice”</b> Warehouses of temporary storage, Mogilev, Krupskaya str, 230 (47)	4.9 ha; on highway 3-76 Orsha–Shklov–Mogilev, 15 km from highway M-8/E95 border of the Russian Federation–Vitebsk–Gomel–border of Ukraine	Motor car and railway	Available. Reconstruction is necessary
2. <b>Plots for construction of transport – logistics centers:</b> 2.1 Mogilev, the plot is within the circular motor car road of the city of Mogilev (48) 2.2 Bobruisk, the plot is 5 km of Minsk highway in the area of RUP “Mogilevenergo” (TEZ-2) and production base “Stroitelny trest № 13» (49)	96.7 ha; adjoins highway Mogilev–Shklov, railway Mogilev–Orsha		In the area of AZS RUP “PO “Belorusneft” there is a power station 110 x 10 (Transmash), water main from water reservoir “Polykovichi”

3. Plot for construction of trade – logistics center:  Vil. Novoselki, Mogilev region (50)	15 ha; situated at the distance of 2 km from highway M-5 Minsk–Gomel	Situated at the distance of 1km from railway loading station	Possibility to be connected to water supply, heating and electrical supply
	25 ha; adjoins highway M-8 border of the Russian Federation–Vitebsk–Mogilev–Gomel–border of Ukraine	Transport road junction for exit to other motor car highways with laying of 1 km of railway to join the Belarusian railway	Water supply, canalization, electricity supply available, as well as building, other structures and asphalt – concrete passages inside the plot

The regional plots allocated according to the Program of Development of the Logistics System of the Republic of Belarus for the Period up to 2015 for the construction of logistics centers in the main regional cities and also in Baranovichi, Bobruisk, Borisov, Zhlobin, Lida, Mozyr and Pinsk have not found investors yet. On some regional plots there are negotiations with Russian, Polish, Lithuanian and Chinese investors.

To make the regional plots allocated for construction attractive it is necessary:

- to provide them with a modern engineering infrastructure;
- to create modern roadside and transport infrastructure on the main highways;
- to increase the quality and traffic capacity of the highways in the main directions from the logistics center construction;
- to allocate additional plots for the construction of logistics centers within the area of the free economic zones “Brest”, “Vitebsk”, “Gomel – Raton”, “Grodnoinvest”, “Mogilev”, which are the most attractive for investments.

There is a problem concerning the training of specialists for the development of logistics activity in the country. Highly qualified specialists with a wide scope expertise corresponding to the international classification of logistics operators of 3PL and 4PL levels are in demand.

The construction of modern logistics centers and putting them rapidly into operation will favor the development of the logistics infrastructure, increase the interest in transit

through the Republic of Belarus and make it possible to improve the position of the country in the rating of the World Bank in the index of logistics development.

#### **5.4 Advantages of investment cooperation with the Republic of Belarus in the sphere of logistics**

When starting business in the Republic of Belarus, the investor gets a number of advantages available in the country, such as:

1. political and economic stability, absence of conflicts of national and religious character, and low level of crime and corruption;
2. favorable economic and geographic position at the intersection of the main European transport routes;
3. progressive investment legislation.

A number of measures directed at the liberalization of economy and the increase of investment attractiveness have been adopted in the Republic of Belarus [4-6].

The Decree of the President of the Republic of Belarus N10 from 06.08.2009 creates favorable conditions for the realization of investment projects.

According to the Decree, the investor or a company created by him or with his participation have the right:

- to construct the objects according to the investment project simultaneously with the elaboration of planning documentation;
- to be given a plot without an auction. The rent during the whole period of the realization of the investment project remains fixed.

The investor or the company are released from:

- deduction into the republican budget for the right to make an agreement to rent the plot;
- reimbursement of agricultural and (or) forestry economy losses caused by the withdrawal of lands for the realization of the project and also from compensation payments connected with the transfer and felling of green plantations in the areas of settlement;
- payments of import duties and surplus value tax while importing the equipment and spare parts for it for the investment project into the customs area of the Republic of Belarus;

- payment of the state tax for the issuing foreign citizens the licenses to perform business activity in the Republic of Belarus and these foreign citizens are released from the state tax for issuing the permission to live temporarily in the Republic of Belarus.

### **5.5 Review of the existing financial sources**

The financing of projects in the Republic of Belarus is carried out by investors. An investor is a person (juridical and physical persons, foreign companies, which are not juridical persons, the state in its authorized bodies and its administrative-territorial units in authorized bodies) who carries out the investment activity in certain forms. The investor has rights, carries duties and risks connected with investing.

To determine the special characteristics of management of their activity, investors are considered as national or foreign investors.

Foreign states and their administrative-territorial units in authorized bodies, international organizations, foreign juridical persons, foreign organizations that are not juridical persons and created according to the laws of foreign states, foreign citizens, physical persons (citizens of the Republic of Belarus and persons without a citizenship) who constantly live outside the boundaries of the Republic of Belarus are recognized as foreign investors in the Republic of Belarus.

The special characteristics of the management of foreign investors' activity are determined by the investment Code and other bills of the Law of the Republic of Belarus including international agreements of RB [1].

Essentially all sources of financial tools in Belarus can be presented in the following sequence:

- own financial resources and internal reserves of the organizations,
- borrowed funds (bank and financial organizations credits),
- involved financial assets received from sale of stocks, shares and other payments of members of labor collectives, citizens, legal persons,
- money resources centralized by associations of enterprises - special funds,
- assets of off-budget funds,
- assets of the state budget,
- assets of investors, including foreign.

**Own financial resources and internal reserves of organizations in the Republic of Belarus.** The financial mechanism of mobilization means that a part of turnover of the enterprise is withdrawn from the primary activity (as this activity can be slowed down in a kind of capital construction) and is started up on financing of capital construction. Own financial assets are: 1) monetary part of the enterprise owners' contribution (authorized funds), 2) mobilization of internal assets, 3) savings generated as a result of economic activity.

**Borrowed funds.** Borrowed funds are: 1) bank credits, 2) bond placement, 3) leasing, 4) loans to legal persons under debt.

**Involved financial assets received from sale of stocks, shares and other payments of members of labor collectives, citizens and legal persons.** The issue of securities is made with the purpose of: attraction of additional money resources by means of sale of securities; creation of new enterprises and attraction of capital necessary for this purpose; changes of the form of the enterprise by the property criterion.

A share proves that its owner has a part in the cumulative capital of the enterprise and applies for a certain part of the enterprise distributed under shares according to activity results of the enterprise. This means that the income under shares is fixed. A bond represents a credit certificate certifying its buyer to be the creditor of the emitter.

The owner of the bond applies for certain income under the bond, comparable with the bank percentage. Therefore the income under bonds has a fixed character not depending on the results of the economic activities of the enterprise.

All shareholders are referred to as investors, i.e. money investors in the capital of the enterprise. It is necessary to distinguish between internal investors (founders of joint-stock companies) and external investors (buyers of shares of joint-stock companies on a securities market).

The owners of bonds are not investors; they are only creditors of joint-stock companies.

The issue of securities and their sale to the first owners is carried out:

- by establishment of joint-stock companies and accommodation of shares among the founders or at transformation of an already existing enterprise to a joint-stock company (creation of authorized capital);
- by increase in the size of the initial authorized capital of a joint-stock company by an issue shares (carried out under the shareholders' decision in a general meeting);

- by attraction of extra capital by a bond release.

The issue of securities can be made in two forms: by private accommodation, i.e. accommodation in advance among a certain circle of investors without a public announcement of the issue and carrying out of an advertising campaign. Private accommodation of shares is authorized for example for closed joint-stock companies by open subscription with the publication and registration of the prospectus of the issue and advertising. Open subscription is obligatory for open joint-stock companies.

**Money resources centralized by associations of enterprises - special funds.** Investment funds in Belarus can start their work only in 2013 at the end of the normative base creation. Actions on the realization of the development program of securities market in the Republic of Belarus on 2011 - 2015 contain such plans. The program has been approved by the Council of Ministers and National Bank of Belarus (April 12th 2011, № 482/10). It is possible to consider its occurrence by routine business - action of the development program of the corporate securities market on 2008 - 2010, approved by the Council of Ministers and National Bank of Belarus (January 21st, 2008) has ended.

The overall objective of the new program is probably to share the market revival of the Belarusian open societies which are not used for attraction of capital in the open market. The Ministry of Finance and National Bank, judging by the positions of the program, hope to change the situation. The realization of certain measures for this purpose is advanced by the creation of collective investment tools - investment funds. The preparation of the bill "About investment funds" is planned in 2013. The experiment of creating the bank management funds, carried out with the participation of Belinvestbank and Priorbank from May 1st till December 31st 2012 should end. Analysis of the experimental results will be done and the expediency of the creation of bank management funds in other banks will be considered in 2013. The features of investment activity and other funds on the securities market are to be defined during this year [2].

**Assets of off-budget funds.** In 2011, the assets of innovative funds of a sum near to 418 billion BYR (\$48 million), which makes almost a fourth of all funds of republican bodies, were not used in Belarus. Moreover, in 2010 only 11 % of fund assets were directed to research work and realization of the state program of innovative development, and more than 50 % of the assets were directed to the financing of capital investments. The situation was about the same in 2011. Thus the volume of such funds is great enough. In 2012 it made 4.7 billion BYR (\$540 million). This situation has developed

from the very beginning of the formation of innovative funds in 1996. The minister of finance Andrey Kharkovets has informed that they were used as a tool of income redistribution of more effective enterprises in favor of less effective ones.

Innovative assets have been included in the budget since 2005, which, in the opinion of the minister, has increased the efficiency of their use. However, what effect these measures have had, can be seen from the above - a quarter of resources has not been used at all, and approximately only a tenth part of the assets has been used on innovation. The President of Belarus has encouraged the development of a precise mechanism of formation and an expenditure of innovative assets, which will be stated in a special statutory act. One more important decision which infringes the interests of all Belarusian business was the acceptance of the decree of the formation of innovative funds [3].

In the official comment to the decree it is said that funds due to profit taxes paid by private and state enterprises will be formed. It is supposed that a tenth part of the paid profit tax will be listed in innovative funds. Assets of such funds will go only for innovative purposes, and their allocation will occur on the conditions of open competitive selection. Also, both state and private enterprises can take advantage of fund assets.

Representatives of the business unions support the necessity of innovative fund creation. The question is how the means of such funds will be distributed in practice. Earlier the assets of private organizations acted in innovative funds, and then were used for the needs of state enterprises. According to the accepted state decision, there should be both republican and local innovative funds in the country [4].

**Assets of the state budget.** According to [1], during the realization of investment activity, including the realization of investment projects, the investors have the right to receive state support.

State support is provided with the purpose of stimulating the attraction of investments into the economy of Belarus. The investment project according to the Code is a set of documents describing a plan about investments and use of investments and their practical realization before achieving results for a certain period of time.

The state support for investment activity appears in the form of granting:

- guarantees of the Government of Belarus;
- centralized investment resources.

The state support for investment activity can be carried out with application of its other kinds, and also with the establishment of additional guarantees to investors. The



state support for investment projects is carried out due to means of republican and (or) local budgets, and also other sources. Assets for rendering the state support for investment projects by the kinds established by the Code are defined according to the law on the republican budget for the next fiscal year. Other kinds of support for investment activity can also be defined by bodies of local management and self-management in corresponding local budgets.

The guarantee of the Government of Belarus - the obligation of Belarus on behalf of which the Government of the Republic of Belarus acts, before the creditor to be responsible for execution of obligations of the borrower (investor).

Guarantees of the Government of Belarus are given to creditors in cases of attraction of foreign credits or credits of the Belarusian banks for realization of investment projects. The order of granting guarantees by the Belarusian Government is defined by the Code and other certificates of the legislation of Belarus. The centralized investment resources - financial resources of the state, including the means of the republican budget are provided for rendering of state support for investment projects.

**Assets of investors, including foreign.** The Open Society “BPS-Bank” and Banque Havilland (Luxembourg) realize the project on the creation of the first fund for Belarus direct foreign investments. The fund is formed by Banque Havilland in the volume of 250 million euro in cooperation with the “BPS-Bank” for the realization of direct foreign investments into prospective projects in the territory of Belarus. This is a serious step regarding the efforts of Belarus on the organization of civilized attraction of direct foreign investments. The bank will select prospective projects for the allocations of funds in the structure of shareholders of a company. It is a question of whether allocation of capital in the prospective enterprises is the most adequate form from the point of view of development of any business. In the next few years there can be some funds for direct investments in Belarus.

The operating company “Zubr Capital”, created in summer 2011, has started to involve capital in the fund SMH and has collected \$70 million. It is declared that the fund has already started the realization of projects. The operating company “Zubr Capital” is part of the structure of the international automobile holding “Atlant-M”. The general director of “Zubr Capital”, Oleg Khusaenov, has presented SMH as the first and unique fund, working exclusively with Belarus enterprises.

The Fund is generated due to non-profile actives of holding. The condition of investments became profitableness at a level of 25 % annual. Fund SMH is already closed; again involved investments will work in a format of new fund, negotiations on which creation “Zubr Capital” conducts.

The liquidation of the fund will take place in 2014. The presumable size of the second fund will be \$50-100 million. It is supposed that it can provide profitability at a level of 15 % annually.

Negotiations with the European Bank of Reconstruction and Development, the German and Netherlands Banks of Reconstruction and Development, and the International Financial Corporation are planned.

Among possible investors are also Belarusian banks and “solvent families from Russia and Europe” possessing capital of more than in \$1 million.

At the first step, average size and large companies being at a stage of development can count on “Zubr Capital” investments, as well as businessmen or managers interested in business purchase. Priority directions are branches in which “Atlant-M” already has operational experience, as well as the sector FMCG (the goods of daily demand) and the processing of waste.

There are already a number of successful joint projects realized in Belarus by foreign investors (Table 10). Their presence testifies that structures like the International Financial Corporation and the European banks of development are ready to allocate funds to Belarus independently or through funds of direct investments. Concerning the competitiveness of Belarus in the global economy, there are really certain risks here. However, there are a number of branches of the Belarusian economy which can be potentially very competitive in the attraction of strategic investors, for example the construction company TLC in the Republic of Belarus.

Considering that two international transport corridors pass through the Republic of Belarus, the insufficient offer of premises in warehouses of type A and B, sufficient volumes of export, import and transit, resource potential and low cost of raw material and labor, it is possible to tell that in the presence of technologies and the correct approach to the organization of manufacture this branch could be quite competitive and interesting for foreign investors [5-9].

## 5.6 Statistics of construction investments in the Republic of Belarus in 2012

In January - October 2012, the investments into fixed capital were reduced to 13.5 % of the level of 2011. The backlog in the decrease of investments which has been admitted earlier (in January - May on 21 % below in the level of 2011) has been partially overcome as a result of the requirement of the President to increase the financing of state programs contrary to the cautions of not to increase state charges by IMF and EABD (Euroasian Bank of Development).

In the second quarter of 2012, the financing of investment state programs was increased up to 31.7 % of the gross national product (against 25.1 % in the first quarter). In August and September 2012, the volume of investments was already above the same months in 2011. In October they decreased again in comparison with the previous year.

**Table 10.** Financial instruments for transport and logistics centers

Name of transport and logistics center (TLC)	Investors	Volume of investments, million euro	Term of construction years	Condition	Financial instruments
1	2	3	4	5	6
TLC "Minsk-Beltamozhservice" Minsk district, 17 km of Minsk P1, Dzerzhinsk <a href="http://www.declarant.by">www.declarant.by</a>	<b>Republican Unitary Enterprise "Beltamozh-service"</b>	9.6	2	Under construction	Of equity financing <b>Republican Unitary Enterprise "Beltamozhservice" (Belarus)</b>
<a href="#">TLC "Brest-Beltamozhservice"</a> (1) Brest, Lieutenant Ryabtsev str., 45A	<b>Republican Unitary Enterprise</b>	4.7		Put into operation 20.09.2012	Of equity financing <b>Republican Unitary Enterprise "Beltamozhservice" (Belarus)</b>
<b>Technical-service Post "Pestatka"</b> in the	Search for EU investors	10.5	2	Search for investors	Planned financing from

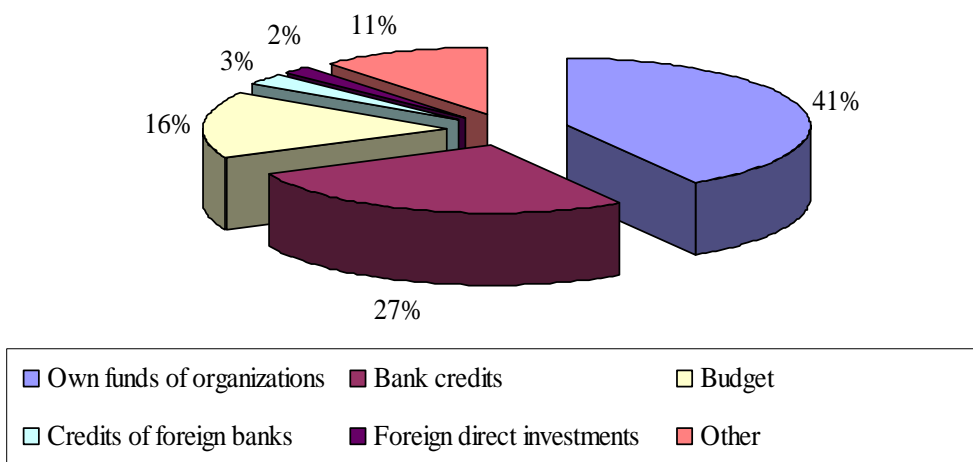
Kamenetsk region	<b>Republican Unitary Enterprise "Beltamozh-service"</b>				EU funds
<b>TLC Joint-venture Company with Limited Liability "Brestvneshtrans" (3),</b> 224025, Brest, Dubrovskaya str., 36	"Souzvneshtrans" Russia, "Brestvneshtrans" Belarus			Put into operation 22.04.1992	Funding from the budget of the Republic of Belarus
<b>TLC Closed Joint-Stock Company "Belterminal" (7)</b> Brest, Lieutenant Ryabtsev str., 44	Czech Company "Doprava"			Put into operation	Doprava, Czech
<b>TLC "Logistic Center "Prilesye", resident of the free economic zone "Minsk", (39)</b>	Companies "Keison" and "Farasar" (Iran), company "Sadburry Enterprises Limited" (Cyprus)	178.54	5	Under construction	Direct foreign investment
<b>Multi-functional transport – logistic center (TLC) in the territory of the free economic zone "Gomel – Raton", (22)</b> <a href="http://gomelraton.com/invest2.php">http://gomelraton.com/invest2.php</a>	The Ministry of transport and communication of RB. The Gomel regional executive committee. Investors.	120	5	Search for investors	Funding from the budget of the Republic of Belarus Direct foreign investment

<p><b>TLC Joint-venture Company with Limited Liability</b>  <b>“BelVingesLogistic” in the settlement of Rakov</b>  <a href="http://www.export.by">www.export.by</a></p>	<p>Joint-venture company with limited liability  “BelVinges-Logistic”, including joint stock company “Alvora” (Lithuania), joint stock company “VingesTerminalos” (Lithuania), open joint stock company “Belintertrans” (Belarus)</p>	<p>21.5</p>	<p>8</p>	<p>Under construction</p>	<p>Funding from a joint-venture company with limited liability “BelVingesLogistic”, including joint stock company “Alvora” (Lithuania), joint stock company “VingesTerminalos” (Lithuania), open joint stock company “Belintertrans” (Belarus)</p>
<p><b>TLC Republican Unitary Enterprise</b>  <b>“Beltamozhservice” in the village of Shchitomirichi_ (32)</b>  <a href="http://belapan.com">http://belapan.com</a></p>					
<p><b>TLC Individual Entrepreneur “BLT-Logistic”</b>  223065, Minsk., Minsk district, Lugovoslobodsky Village Council, distributive logistics center BelTA  БелТА, <a href="http://www.belta.by">www.belta.by</a></p>	<p>Investments of RUE  ”Beltamozh-service”  Loan from joint stock company “Komerchi bank”  Check Republic on preferential terms under the</p>	<p>8  22</p>	<p>6</p>	<p>Under construction</p>	<p>Equity financing from RUE  “Beltamozhservice”  Funding from joint Stock stock company “Komerchi bank” (Check Republic), Open Joint Stock</p>

	guarantee of returning the investments of open joint stock company "ASB Belarusbank" (Belarus)				Company "ASB Belarusbank" (Belarus)
<b>Minsk, near the National Airport "Minsk" free economic zone (FEZ Minsk), (33) <a href="http://www.rzd-partner.ru">www.rzd-partner.ru</a></b>	Individual entrepreneur "BLT-Logistic". RUE "Beltamozh-service"	4.2			Equity financing from <b>Republican Unitary Enterprise "Beltamozhservice» (Belarus)</b>
<b>International multimodal logistics center "Orsha"</b>	Belgian logistics company "Antwerpse Ontwikkelings en Investeringsmaatschappij"	288.6	2010-2021	Agreement	Funding from Antwerpse Ontwikkelings en Investeringsmaatschappij, Belgia
<b>TLC Open Joint Stock Company "Ozertso-Logistic"</b> 223021, Minsk district, 500 m east of the village of Bogatyreva <a href="http://www.economy.gov.by">http://www.economy.gov.by</a>	Latvian company "Logistik Partneri LTD"	11.23	9	Agreement	Logistik Partneri LTD, Latvia
<b>TLC Open Joint Stock Company "Belmagistralavtotrans"</b>	Open joint stock company "Ozertso-Logistic"	6.9		Put into operation	Business entity with a share of state ownership 99.313%
<b>TLC Limited Liability Company "Twenty Four"</b> 223039, Minsk region,	Open joint stock company "Belmagistralavtotrans"			Put into operation	Funding from open joint stock company "Belmagistralav

Minsk District, Tabora , <a href="http://www.government.by/ru/content/3962">http://www.government.by/ru/content/3962</a>					otrans”
<b>TLC Joint Venture “AMIPAK” - Joint Stock Company</b> , 247350, Gomel Buda-Koshelevo region, Lenin str., 61a	Limited liability company “Premierlising”			Put into operation	Funding from limited liability company “Premierlising” <b>(Belarus)</b>
<b>State Enterprise “Belintertrans - transport and logistics center”, Belarusian Railway</b> . (CTA and CTA Stepyanka Kolyadichi) 220037, Str. Annayev str., 84 <a href="http://belint.by/about/struktura/">http://belint.by/about/struktura/</a>	Search for investors: foreign and domestic companies	2	2	Search for investors	Direct investment, direct foreign investment
<b>“Brestgruztranslogistik” RUE “Brest branch of the Belarusian Railway”</b> Brest-North station, Brest, Kizhevatova str, 3/1 <a href="http://www.rw.by/corporate/press_center/">http://www.rw.by/corporate/press_center/</a>	Belarusian Railway			Put into operation in 2009	Financing from own funds of the Belarusian Railway
<b>Forwarding Republican Unitary Enterprise “Gomelzheldortrans”</b> 246044, Gomel, freight yards of the station “Tsentrolit”	Belarusian Railway			Put into operation	Financing from own funds of the Belarusian Railway

The basic credit facility of investment projects have become the budget (16 %) and the own means of organizations (40.5 %). The share of bank credits in fixed capital in 2012 was reduced from 35.4 % (2011) to 26.9 %. In August and September 2012, the volume of investments was already above the same months in 2011. In October they again decreased in comparison with the previous year. The volume of direct foreign investments is insignificant: 2.2 %, and the credits of foreign banks 3.3 % (Figure 34). The planned attraction of direct foreign investments at a rate of 4.6 billion USD in 2012 was broken. In the first half-year it was only \$0.6 billion.



**Figure 34.** Credit facilities of investment projects

### 5.7 Models of financing of infrastructure projects

The investment activity in the Republic of Belarus is carried out in the following forms [1]: creation of a juridical person, purchase of property or property rights, i.e.:

- a share in the basic fund of a juridical person including cases of an increase of the basic fund of a juridical person:
  - real estate,
  - securities,
  - copyrights,
  - concession,
  - equipment,
  - other basic means.



The sources of investment, if nothing different is defined by the legal bills of the Republic of Belarus, can be own resources of the investors, including a sinking fund, the profit left after paying taxes and other compulsory payments including means obtained from selling shares in the basic fund of a juridical person, liabilities and drawn means including liabilities from banks and non-bank liability-financial companies, loans from founders (participants), and other juridical and physical persons and state-loan bonds.

On the whole, to create favorable conditions for investing in the construction of modern logistic centers in the Republic of Belarus it is necessary:

1. to simplify the procedure of allocating plots for the construction of logistic centers by cancelling auctions of selling plots which demand considerable financial expenses;
2. to develop modern construction norms and regulations which correspond to the requirements of technical documentation of European countries;
3. to guarantee the protection of property rights and foreign investment.

## **5.8 Preparation of means for infrastructure projects**

To develop and make the current logistic infrastructure up-to-date, and first of all, to construct modern logistics centers in Belarus, a Program of Development of the Logistic System in the Republic of Belarus for the Period up to 2015 has been adopted. According to the published document, 50 logistics centers are to start operating in the Republic by 2015. The scheme of logistics centers in the Republic of Belarus is presented in Figure 1 [10].

To get ready to make conclusions of taking decisions about the state support of investment projects, a State Complex Expertise program is carried out [10]. The State Complex Expertise program is carried out by the Ministry of Economy of the Republic of Belarus in cases of implementation of investments projects with foreign loans and loans from the banks of the Republic of Belarus under the guarantee of the Government of the Republic of Belarus, with the means of centralized investment resources, and with the participation of the state in the creation of commercial organizations with foreign investments by their establishing.

At the moment, 23 investment projects on the construction of logistic centers on 22 plots of the 50 determined by the program are being implemented within the program (in the area of the free economic zone “Grodnoinvest”, two investment projects of

“BelLogisticGrup” and the foreign company “Westnamus-Logistic” are carried out on one and the same plot). Investors are being searched for the vacant plots.

The logistic centers “Minsk – Beltamozhservice”, Brest – Beltamozhservice”, and also the company “Twenty-four” started operating in 2011. It has also been planned to put into operation the first part of the two logistic centers “Logistic center “Prilessye” and COOO “BelVingesLogistic” and the second part of the private enterprise “BLT-Logistic”. In addition, 17 more investment projects of the construction of logistic centers not included in the program are being complemented at present. Agreements have been concluded on 16 of them.

More information about projects of the Belarusian logistics centers can be found in the Appendixes XXI-XXIV.

## **5.9 Financing of railway infrastructural projects**

The state association “Belarusian Railways” (BR) is integrated into the Central European transport network. BR consists of 77 organizations, including 32 establishments and 45 republican unitary enterprises, of which 14 are subsidiary, 6 isolated structural divisions, and 3 representatives of the Belarusian Railways abroad.

The need for the efficient use of the Belarusian geographical position and passage of two international transport corridors through its territory demands effective interaction with the railways of the neighboring states and the European transport system with an output to sea transport.

More than 94 % of all transit cargo is Russian export or import. The basic kinds of transported cargo are oil, building materials, wood and lumber, mineral fertilizers, and chemical products. In connection with the expansion of trade and economic relations with China, there is partial reorientation of transit freight traffic from Russia, Kazakhstan, the Baltic ports (transportation through Belarus) to the ports of the Far East and land border crossings.

According to the assignment of the Belarusian President, the state program of the development of Belarusian railway transportation for 2011-2015 is developed by the Science Centre of Complex Transport Problems of the educational establishment “Belarusian State University of Transport” [12].

**For the purposes of the program it is possible to carry out the following procedures:** strengthening of throughputs of stations and sites of the basic directions of transit and export cargo promotion; perfection of passenger transportation technologies; achievement of the level of European economically developed countries on power consumption of the life cycles of mechanisms and equipment; development of railway transportation organizations in view of ecological requirements and nature protection actions in railway transportation.

**Predicted directions of development of the basic freight traffic:**

- development of transit cargo transportation to the Kaliningrad direction (their share of the general transit is about 30 %), promoted by the realization of the Russian program on the construction of a deep-water port in Baltiysk (Kaliningrad region);
- escalating cargo transportation between the states of Central, and Western Europe and Southeast Asia in the East – West connection through border crossings from Belarus to Poland in connection with the partnership AG “Doicheban”, including the II International transport corridor, and also in the North - South connection, including the IX International transport corridor between the countries of the Baltic and the Black Sea;
- escalating cargo transportation by accelerated container trains in the direction of the Baltic Sea - Black Sea;
- development of the tariff policy of Belarusian railway transportation with the use of private parks of rolling stock and BR interests;
- creation of new innovative technologies of transportation process on cargo delivery and their further development.

**The basic investment projects** of the program are directed towards the purchase of traction and carload rolling stock; purchase of cars; electrification of railroad lines; development of the Minsk railway junction; development of the high-speed inter-regional passenger connection. The objects and sources of financing investment projects and actions of the state program of railway transportation development in Belarus for 2011-2015 are presented in the Appendix XXV.

**Volumes of financing:** 14 674 billion rubles (rate: 1 \$ = 3 366 BR).

**Tools of financing:** Financing is carried out by own BR funds, bank credits, republican and local budgets, including the innovation fund of the Ministry of Transport and Communications. Own BR funds provide an opportunity of 39 % maintenance of

financing volume from the state program. The attraction of credit resources for the realization of the state program is planned at a rate of 57.6 % from the total volume of financing. The specified level is limiting, from the point of view of BR financial opportunities, which reflects on the parameters of its solvency.

**Financing of the state program actions** is carried out by the republican and local budgets at a rate of 3.4 % from the volume of their financing.

**Sources of financing:**

- own BR funds (further - own funds) - 5 773 billion rubles,
- credit resources - 8 400 billion rubles,
- republican budget - 448 billion rubles,
- local budgets - 53 billion rubles, and
- attraction of resources of foreign investors is required for solving separate problems.

**The basic directions of object financing:**

*Due to own funds:*

- development of the Minsk railway junction;
- strengthening throughputs of the stations intended for multi-sample train and heavy transit train pass;
- development of the organizations' travelling facilities;
- development of automatic, telemechanical and communication systems;
- modernization of electro supply systems;
- automation of hump yards;
- development of the passenger service infrastructure;
- development of information-operating systems on railway transportation;
- modernization of cargo terminals with the creation of transport logistics centers in their sites;
- development of the building complex and facilities of civil constructions;
- construction of railway transportation objects; and
- purchase of equipment which is not included in the construction estimates.

*Due to credit resources:*

- purchase of traction rolling stock, cargo and carriages;

- purchase of motor-car loading rolling stock, including the organization of intercity passenger transportation in Minsk;
- purchase of mechanisms and rolling stock for carrying out of railway repair work;
- development of the infrastructure for high-speed inter-regional passenger connection: construction of second rails on sites Orsha - Vitebsk and Orsha - Mogilev; regenerative railway repair;
- carrying out electrification of railway lines; and
- modernization of the existing park of diesel locomotives.

***Due to republican and local budgets:***

The republican budget:

- compensation of a part of percent for the bank credit using, which have been given out on investment projects on the conditions of competitive accommodation, and also percent under external state loans (294 billion rubles);
- construction of six road overpasses above tracks (49 billion rubles).

The Innovation Fund of the Ministry of Transport and Communications (railway transportation):

- financing of research work;
- financing of actions on energy saving.

Local budgets:

Brest regional budget:

- development of the passenger service infrastructure with arrangement of the areas near the station, and pedestrian crossings through tracks in the cities of Brest and Baranovichi (26.6 billion rubles).

Grodno regional budget:

- development of the passenger service infrastructure with arrangement of the areas near the station, and pedestrian crossings through tracks in Grodno (11 billion rubles).
- financing of the development of the passenger service infrastructure in Brest, Baranovichi and Grodno will allow providing a better degree of service for the population, creation areas without barriers on the basic routes of passengers, an accomplishment of territories, and increase of aesthetic qualities of the environment.

The budget of Minsk:

- construction of an underground pedestrian crossing at the station “Minsk-Severnyiy”, underground “Molodiozhnaya” combined with the station;
- performance of actions on preparation and carrying out of the World Hockey Championships in 2014 (15.8 billion rubles).

### **5.10 Logistic infrastructural projects with neighboring countries**

Together with the open joint-stock company “Russian Railways” BR will conduct work in the field of high-speed movement on the route Moscow - Minsk - Brest within the limits of the II International transport corridor with an output in the member countries of the European union, and participate in the realization of the project on the acceleration of container train promotion on the Transsiberian highway on the route Nahodka - Zabaikalsk - Brest (the project “Trans-Siberian Railway for 7 days”).

The logistics of cargo transportation in containers is developed in connection with the countries of the Asia-Pacific region, the CIS and Europe.

Modernization of the cargo terminals of the branches of the republican forwarding unitary enterprise “Belintertrans – Transport Logistics Center” will be carried out in the cities of Brest, Gomel, Grodno, Mogilev, and Vitebsk, modernization of terminals at cargo stations Kolyadichi and Stepianka will be done within the limits of the development of the Transport Logistic Centre Minsk BTLC, directed on the attraction of transit freight traffic on the II and IX all-European transport corridors.

Special attention is paid to the development of container transportation in the direction China - Europe – China, and the preparation of coordinated decisions on the organization of cargo transportation in containers through the territory of Belarus.

The basic directions of decisions concerning ecological safety problems at project realization are:

- reduction of emissions of polluting substances in the atmospheric air from mobile sources by 20 %;
- reduction of water consumption by 5 - 10 %;
- clearing the territories polluted by mineral oil of the sleeper impregnation factory in Borisov in a strip of the railway tap;
- modernization of diesel locomotives and diesel trains with the view of reduction of outflow of mineral oil in the ground;

- introduction of installation for processing oil-containing waste with the view of reception of qualitative fuel for burning in own boiler-houses, recycling sludge in the item of preparation of the rolling stock at the station Barbarov;
- clearing sludge stores and recycling sludge at the station Novopolotsk;
- reconstruction of operating and construction of new buildings for the clearing of industrial sewage on large objects - locomotive and carload depots; and
- reduction of oil dumps containing sewage and introduction of turnaround water supply.

**New kinds of services:**

- The use of information technology in the sphere of the logistics of freight traffic, providing complex servicing by the principle of one window with the EU countries and ports of the Baltic Sea (Klaipeda and Ventspils). It will allow accelerated cargo promotion, developing export potential, and involving additional volumes of transit cargoes.
- The introduction of information technology, and intellectual and microprocessor systems in the field of process management of transportation in the BR control centre of transportation, which will allow using the throughputs of railway sites on the international transport corridors effectively.
- The development of the information base of the control center for transportation, integrated with similar databases of the railway administrations of the EU countries, Russia and Ukraine, for the attraction of transit transportation.

## **6 Financial instruments in Russia – Moscow perspective**

### **6.1 Review of existing financial sources**

#### *6.1.1 Investment Fund of the Russian Federation*

The Investment Fund of the Russian Federation is a state financial fund aimed at co-financing investment projects. The Investment Fund was established in November 2005 as "a tool of active public investment policy to intensify structural transformation in the economy of Russia" in concordance with Government Decree № 694 of 23.11.2005. The Ministry of Regional Development of Russia has been responsible for the management of this fund since 2007 (before this time the fund was managed by the Ministry of Economic Development and Trade).

Project expertise consists of three main stages - investment committee, government committee and approval at a government session.

The government is expected to finance business projects with a budget exceeding 5 billion rubles, if the project has a national status or 500 million rubles for regional projects, during the period of 5 years («Rules of formation and utilization of the Investment Fund's budget assignments» approved by Government Decree № 134 of 01.03.2008). A private investor will have to finance no less than 25% of the project costs for federal projects (no less than 50% for regional projects). Project profitability should be within the range 4-11%. No less than 45% of the Investment Fund resources will be devoted to financing projects concerning the development of the logistics infrastructure.

Government support for investment projects from the Investment Fund has different forms:

- direct co-funding of projects (budget investment in capital construction objects of federal property, including design, preparation of the sites, preparation for tenders for the rights to conclude the concession agreement);
- participation in the share capital of the company that will carry out a project;
- system of government warranties that differ from the acting warranties provided by the ministry of finance;
- subsidies from the state company «Avtodor» (motor road design, building, maintenance, and modernization);
- subsidies for capital construction objects of regional and municipal property (construction and reconstruction).



An example of a direct state co-funding is the Multifunctional Sea Cargo Complex «Bronka» project (see Appendix XXVII). The expected financing of the project from the Federal Investment Fund is 15.2-15.9 billion rubles (the total cost of the project is 58.9-59.6 billion rubles). The resources of the Investment Fund will be used to finance the construction of an access channel to the port «Bronka», preparation of its shunting water area, and setting up of navigation equipment. Without support from the Investment Fund the project would have been unattractive for the potential investors because of the negative net present value - NPV (-3.5 billion rubles) and a very long payback period of more than 30 years.

In case of the river port «Dmitrov» project (see Appendix XXVIII), 4.95 billion rubles from the Federal Investment Fund (45% of the total project budget) are expected to be used to finance the construction of cargo berth facilities, riverside strengthening operations, port zone arrangement, setting up lines of communication, road building, as well as railroad branch-line construction. If Investment Fund resources are used, the expected payback period will be circa 10 years.

The Investment Fund of the Russian Federation has been also used in the Ust-Luga project (see Appendix XXIX). The total amount of funding from the Investment Fund and the federal budget is about 27.4 billion rubles. These resources have been used for the access channel construction, preparation of the shunting water area, and setting up maritime safety systems.

### ***6.1.2 Regional funds***

#### **1) Regional investment funds**

These funds represent a new mechanism of financing regional initiatives concerning the design of logistics infrastructure facilities with the help of federal budget resources. This tool of the government support has been elaborated by the Ministry of Regions of Russia with reference to the instruction envisaged in Government Decree № 1189 of December 31, 2009 aimed at the enhancement of the use of PPP mechanisms on the regional level.

On October 30, 2010 the government approved "Rules defining the new approach to granting subsidies from the Investment Fund of the Russian Federation providing the establishment of regional investment funds in the subjects of the Russian Federation" (Government Decree № 880).

The rules in question became effective on January 1, 2013. The procedure of setting up a regional investment fund should be defined by regional legislation.

Subsidies from the Investment Fund of the Russian Federation to the regional investment funds will be provided in the following cases:

- for project realization in concordance with concession agreements;
- if even one investment project of the PPP type has been financed from a regional investment fund on its own (without obtaining subsidies from the Federal Investment Fund);
- co-funding projects financed by a regional investment fund and/or local budget and a private investor.

## **2) Regional road funds**

The funds became effective on January 1, 2012 in compliance with Federal law № 68-FZ of 06.04.2011. The main purpose of their establishment is to provide resources for roads design, building, modernization, maintenance, and operation. The total amount of funds planned for this purpose was 388.2 billion rubles in 2012 (excluding Moscow and St. Petersburg).

The basic sources of the formation and replenishment of regional road funds are the following:

- excises for motor fuel and engine oil produced in the territory of the Russian Federation and that are assigned to regional budgets (77% in 2012, 72% in 2013);
- transport tax;
- other payments that are assumed by the budgetary legislation of the Russian Federation subject.

## **3-4) Funds of the European Union, International financial institutions**

These sources have not been widely used yet in the Russian Federation. Some large-scale projects of logistics infrastructure development are expected to be partly financed with loans provided by the EBRD (e.g. the sea port "Bronka" in the region of St. Petersburg, Appendix XXVII).

## 5) Private investment

The main sources of private investment for projects devoted to the development of logistics infrastructure are national commercial banks like Sberbank, Vneshtorgbank, Vnesheconombank, Prominvestbank, etc.

Some projects are initiated and funded by professional developers (at least at the first stage). In the field of warehousing facility development these are Raven Russia, Eurasia Logistics, Multinational Logistics Partnership, PNK Group, Espro development, Eurosib, etc.

The construction of the river port «Dmitrov» is partly sponsored by the private company «Sanna-Liter», which has been developing the network of logistics facilities in Russia («Liter» logistics network).

A comparatively small amount of funding has started to come from foreign private investors. For instance, «Gulfainer Global Logistics» from the United Arab Emirates has agreed to buy a share in some of Ust-Luga Port facilities and invest some 192 million euros in their development.

A significant amount of investment in logistics infrastructure comes from the natural monopolies (e.g. Gazprom, Transneft) or large corporations. For example, the metallurgy giant «NLMK», «Novatek» (Russia's largest independent natural gas producer), and the mineral and chemical company «EuroChem» have been investing heavily in the Ust-Luga port infrastructure (primarily in port terminals). «EuroChem» has been funding the construction of a chemical fertilizer terminal in Ust-Luga. There is also a coal handling terminal in the Ust-Luga port. Its construction has been financed by OAO «Kuzbassrazrezugol'» (one of the largest coal-mining enterprises in Russia). The metallurgy group «NLMK» is a major shareholder in «Universal Cargo Logistics Holding», which has stakes in «Seaport of St. Petersburg», «Multipurpose transshipping complex», sea ports in the Russian cities of Tuapse and Taganrog, Volga, North-Western and Western shipping companies, and a number of shipbuilding and logistics enterprises. Logistics infrastructure in the north of Russia has been also actively developed by the «Norilsk Nickel» mining and metallurgical company. «Norilsk Nickel» is the world's largest producer of nickel and palladium and one of the leading producers of platinum and copper. The company has four regional transport branches in Murmansk, Arkhangelsk, Krasnoyarsk and Dudinka. The company's arctic fleet consists of six reinforced ice class vessels (including container ships and a tanker). «Norilsk Nickel» has

been extensively investing in the development of its transshipment terminal in the port of Murmansk (the total amount of funding is about 996 million rubles according to the company's official web site). The group has also financed the construction of a fuel storage terminal in Arkhangelsk, where close to 50 thousand cubic meters of oil products can be stored at the same time. Together with oil products, stockpiling and shipment to the Norilsk Industrial Area, the terminal will be used for bunkering the company's icebreaking cargo vessels. The cost of the investment project amounts to 790 million rubles.

#### **6) Preparation funds for infrastructure projects**

Preparation work for projects devoted to transport and logistics infrastructure development are usually funded from sources provided by the respective ministries or government departments of the state unitary enterprises or branch (departmental) institutions at federal, regional or local level. For instance, the state corporation «Rostransmodernization», together with the Central Scientific Institute for Complex Transport Problems are responsible for allocating funds for preparatory work on objects included in the Special Federal Program of the National Ministry of Transport.

There is also a special fund created by Vnesheconombank which is aimed at funding the preparation of projects initiated by regional or municipal authorities. The legal basis of this fund operation is the «Programme of financing assistance to regional and municipal development projects». The fund of 10.9 billion rubles has been operated by OAO «Federal Centre of the Projects Financing» (FCPF) - a 100% subsidiary of Vnesheconombank. The main purpose of the program is to provide financial, consulting and technical assistance for state and municipal authorities in the field of investment project development. The projects in question should help to solve problems of regional and municipal development on the basis of public-private partnership. Among the priority areas of the program are the construction of transport infrastructure facilities and the development of regional and municipal systems of mass transit (modernization and building of roads, bridges, municipal transport, high-speed trams and airports). The program period is 5 years (2011-2015).

#### Conditions for project funding:

- The project is based on the appropriate legal act concerning the initiator of the project.

- Program funding is provided only for the remuneration of the services of competent contractors, which should be selected according to Vnesheconombank and Program regulation.
- The preparation period of the project should not be more than 2 years.
- The amount of funding provided by Vnesheconombank should be within the limits of 20-200 million rubles.
- The minimum cost of the project should be 2 billion rubles or more.
- The initiator of the project should have guarantees or asset backing.

The main forms of financial participation of FCPF in the preparation of the projects are:

- Financing the remuneration for Vnesheconombank services in the field of investment consulting on the basis of the state contract between the bank and the subject of the Russian Federation. The contract may assume down payment during the period of 2 years. State contracts of this kind are based on government decree № 1372-r of 17.08.2010.
- Providing loans for a specific project company, founded by (or with the participation of) either a subject of the Russian Federation or a municipality.
- Financing of competent contractors' services on the basis of government or municipal contracts on the conditions of factoring.
- Financing in the form of FCPF participation in authorized capital stock of a specific project company.

## **7) Other funds**

There are several public-private funds of direct investment that can be used for financing logistics infrastructure projects.

The Russian Direct Investment Fund (RDIF) was founded by the government of the Russian Federation in June 2011 to invest in leading companies of the fastest growing and the most prospective sectors of economy. Among these sectors are the basic branches of modernization, including transport and logistics. The management company of the fund is a 100% subsidiary of Vnesheconombank. The fund capital, guaranteed by the Russian government, is 10 billion dollars. RDIF is expected to attract institutional investors from all over the world (funds of direct investment, sovereign funds, and leading companies) on the conditions of co-funding national economy. To become a partner of RDIF, a company should have market value or annual revenue of more than 1

billion dollars. RDIF can invest 50-500 million dollars in the capital of a selected company, but the RDIF share should not exceed 50% of the total project budget. The expected investment period for RDIF is 5-7 years. When this period expires, the fund will exit the project either by organizing initial public offering or selling its shares to a strategic investor.

Another public-private fund of direct investment in the infrastructure projects is administered by a management company founded by «Prominvest» (an investment division of the state corporation «Rostechnologii») and «Gulftainer Global Logistics». The fund is aimed at investment in port facilities and logistics centers. The fund capital equals 500 million dollars.

## **6.2 Models of financing infrastructure projects**

### ***6.2.1 Financing cross-border projects***

Most cross-border projects concerning the development of logistics infrastructure are carried out in the form of joint enterprises founded by Russian and foreign partners. These enterprises use different kinds of models to fund the projects: subsidies from the Investment Fund of Russia, subsidies from federal and regional budgets, and private investment. Some of the models that can be used to finance cross-border projects are listed in the following sections.

### ***6.2.2 Direct public funding***

There are almost no examples of total funding of projects in question from federal, regional or municipal budgets. The government prefers to co-finance infrastructure projects (e.g. in the form of public-private partnership).

### ***6.2.3 Public-Private Partnership***

PPP is today the most popular form of setting up and financing transport and logistics infrastructure facilities in Russia. A widely used PPP model is «**Concession**».

This model assumes that the private investor is responsible for the management of the government property and takes considerable investment risks for a defined time period. This model can be implemented in different types:

### **«BROT» - Build, Rehabilitate, Operate, and Transfer**

A private investor is responsible for building a new facility or the rehabilitation of an old one. A private company has the right to operate the facility during the contract period, taking all the connected risks. Later on the facility should be transferred to the state.

### **«Greenfield Projects»**

A private company or a joint public-private enterprise is responsible for the setting up and operation of a new facility during the contract period. When this period expires, the object of infrastructure should be transferred to the state. This group of models includes the following types:

#### **«BLT» — Build, Lease, and Transfer**

A private investor is expected to build a new facility, taking its own risks, transfer the finished infrastructure object to the state, and then lease and operate the facility, bearing all the corresponding risks, until the rent period is finished. The state normally guarantees a minimum income to the private investor, buying the facility services for a long time period («take-or-pay contracts») or compensating for minimum traffic.

#### **«BOT» - Build, Operate, and Transfer**

A private investor is responsible for building a new facility and its operation, taking all the connected risks during the contract period. When this period expires, the facility should be transferred to the state. The private investor can have property rights during the contract period. The state normally guarantees a minimum income to the private investor, buying the facility services for a long time period («take-or-pay contracts») or compensating for minimum traffic.

The legislation that regulates concessions is represented by the Federal law on concession agreements № 115-FZ of 21.07.2005.

Apart from subsidizing the building of transport and logistics infrastructure facilities, the state is expected to bear the costs of ground site acquirement. These costs are not included in the state subsidies, but they are taken into account when budget efficiency is defined.

Investments in transport and logistics infrastructure projects are often reviewed at open tenders. The winner of the tender gets the right to conclude the concession agreement in order to finance, build and operate facilities on a chargeable basis. This model can be applied to motor road development, setting up different facilities along them, projects of logistics centres, etc.

The general advantages of concession agreements are:

- there is a strict legislative framework for this kind of projects;
- there are guarantees for concessionaires in case the legislation changes and if tariffs for their services are adjusted;
- the tender procedure is definite and well regulated.

The main drawbacks of concession agreements are:

- a private investor does not have the right of ownership regarding built or modernized facilities;
- the imperative nature of concessionaire obligations that should be included in the concession agreement;
- long and expensive tender procedure in order to conclude an agreement;
- there should be only one concession provider in each agreement (plurality of providers is impossible);
- international commercial arbitration is not available;
- the parties have to draw up agreements according to standard templates (there is lack of flexibility);
- there is no possibility to transfer a license to a third party;
- substitution of the project company is not allowed because of the character of the bidding procedure;
- bank account bail is not allowed (the alternative option is an agreement of direct debiting);
- there is no possibility to pawn the subject of the agreement, alienate it, or to pledge the rights on the concession agreement;
- cession of the rights is allowed only with a guarantor's consent and only when construction is finished;
- the procedure of agreement cessation and compensation is complicated.

**The rent form** of PPP assumes that a private partner who is interested in gaining access to the existing state-owned logistics infrastructure, initiates rent agreement with the state. The use of this form is considerably limited due the fact that the government is



primarily interested in the development of new logistics infrastructure or modernization of existing facilities.

PPP in the form of a **joint enterprise** refers to a case when a private company starts a project and engages co-funding from the state, provided that the facilities, established by the private partner, will be owned by its management company.

A joint enterprise can be organized in different forms:

- foundation of a private management company with project co-financing by the state;
- creation of a management organization in the form of a joint-stock company with a share of the state;
- establishment of a state-owned management company with the attraction of private investment to finance a project.

A private partner, who is responsible for building and operating facilities, in case he owns the objects of transport and logistics infrastructure, can also grant them on lease to the state for a period of 1-15 years. In this case, the state normally guarantees a minimum income to the private investor, buying the facility services for a long time period («take-or-pay contracts») or compensating for minimum traffic.

The river port «Dmitrov» project presents the first kind of joint enterprise form of PPP (Appendix XXVIII). There is a private management company «Liter» and a project promoter OOO «Thesaurus Port of Dmitrov». OOO «Thesaurus Port of Dmitrov» has been funding 50% of the port infrastructure design costs, as well as all the costs of building warehouses and their provision with all necessary equipment (6.05 billion rubles including bank credits). The Federal Investment Fund will finance 50% of the costs of the port infrastructure design. The construction of the state-owned port infrastructure will be financed by the Federal Investment Fund as well.

An example of the second form of joint enterprise is the Universal Sea Merchant Port «Ust-Luga» project (Appendix XXIX). In this case the regional authorities (government of the Leningrad district) have 25% + 1 share in the management organization OAO «Ust-Luga Company». By distributing other shares to state-owned corporations (OAO «Russian Railways»), private Russian and foreign investors (including the infrastructure investment fund), the project administration has managed to involve a significant amount of funds to finance some preparatory, design and construction work. OAO «Ust-Luga

Company» is responsible for setting up all the communications and the construction of certain terminals, as well as attracting investors.

The port area has been rented by OAO «UST-LUGA Company».

The rent period is 56 years:

- 3 years for development work
- 1 year for feasibility study
- 3 years for construction
- 49 years for operation.

A major part of the facilities (terminals) has been funded by private and state-owned investors (natural monopolies).

Public-private partnership has been legalized with a quadripartite investment agreement on December 18, 2002 between OAO «Ust-Luga Company», the Leningrad district, the Ministry of Transport and OAO «Russian Railways», a three-power treaty on August 30, 2006 between OAO «Ust-Luga Company», the Ministry of Transport and the Federal Agency for Federal Property Management, as well as with a number of bilateral agreements concerning particular areas, and between project members including private investors of specific port facilities.

In order to finance the project OAO «Ust-Luga Company» also uses sources of the Federal budget and the Investment Fund of the Russian Federation (27.4 billion rubles in total). The construction of access channels, preparation of the shunting water area, and setting up maritime safety systems are financed either from the Federal budget or by the Federal Investment Fund. Another tool of project funding is corporate bonds (600 million rubles).

In the case of the terminal-logistics center «Belyi Rast», the state-owned corporation OAO «Russian Railways» has been financing preparatory work on the project via its 100% subsidiary OOO TLC «Belyi Rast» (project promoter). The main functions of the project company are the acquisition of land rights, organization of design and implementation of survey work in order to get permission for construction and project fund raising (in forms of investment in equity, getting bank loans, and attracting private investors). Private investors' funds are expected to be used to fund the development of the logistics infrastructure (warehouses and terminals).

**Complex projects** of PPP usually have a cluster type of organizational structure and combine a number of interrelated investment projects in different branches of economy.

The «Ust-Luga» project can also qualify as a complex one, when all kinds of facilities (not only logistics infrastructure) are considered. Ust-Luga is assumed to become a complex territory development project which will include a number of clusters: logistics, industrial, residential, and recreational areas, as well as a business park.

The following tables present the specific attributes of the main PPP forms and their references to the cases in the Appendixes XXVI-XXIX.

Model of PPP	Project type	Subject of a contract between the state and a private partner	Form of ownership for the property created
Concession	Monoindustrial	Co-funding + Building + Operation	State
Rent	Monoindustrial	Operation	State
Joint enterprise	Monoindustrial	Co-funding + Building + Operation	Private with a share of the state
Complex project of PPP	Interindustrial	Co-funding	Mixed (private and state)
		Co-funding + Building	
		Co-funding + Building + Operation	
Model of PPP		Case/example	
<i>Joint enterprise</i>			
1) Foundation of a private management company with project co-financing by the state		River port «Dmitrov», Appendix XXVIII Multifunctional Sea Cargo Complex «Bronka», Appendix XXVII	
2) Creation of a management organization in the form of a joint-stock company with a share of the state		Universal sea merchant port «Ust-Luga», Appendix XXIX	
3) Setting up a state-owned management company with the attraction of private investment to finance a project		Terminal-logistics centre «Belyi Rast», Appendix XXVI	
<i>Complex project of PPP</i>		Set of «Ust-Luga» project clusters	

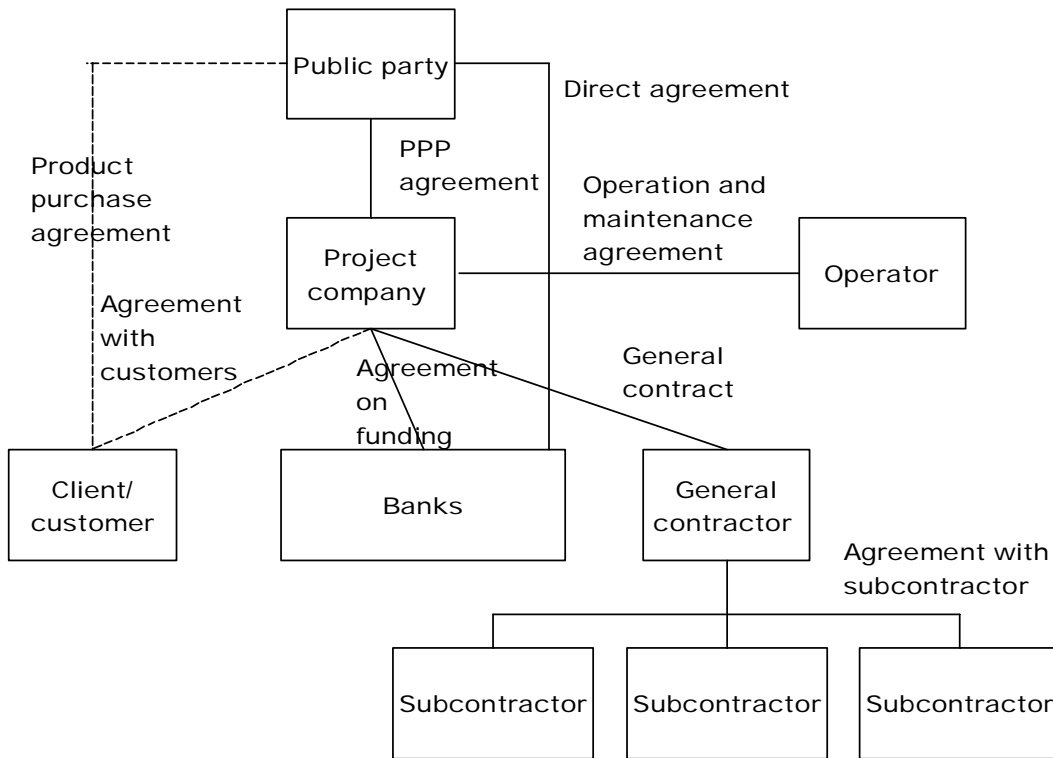
The funding of PPP projects in Russia has some specific traits:

- Investors usually use loans (normal ratio of own and loan capital is 20-40%/80-60%).
- Unlike other forms of investment projects, this case is characterized by traditionally huge financial participation of the state.
- Specific instruments and mechanisms of funding are expected to be used: resources of the Investment Fund of the Russian Federation, infrastructure bonds.
- Credit institutions are often used as project sponsors.
- Participation of institutions for the development (like Vnesheconombank) is considerable, and the role of international financial organizations (EBRD, IFC) is expected to grow.

Typical sources of PPP project funding in Russia are:

- project investors' (sponsors') resources;
- budgetary financing (using appropriate budget funds as well as subsidies from the Investment Fund);
- loans;
- funds obtained as a result of infrastructure bond offering (as a rule, these funds come from institutional investors like pension funds, other state funds, etc.).

A general scheme of PPP project accomplishment is illustrated in Figure 35.



**Figure 35.** Typical scheme of PPP project accomplishment

A typical model of financing a municipal PPP project is depicted in Figure 36. Figure 37 illustrates a typical model of funding a municipal PPP concession project.

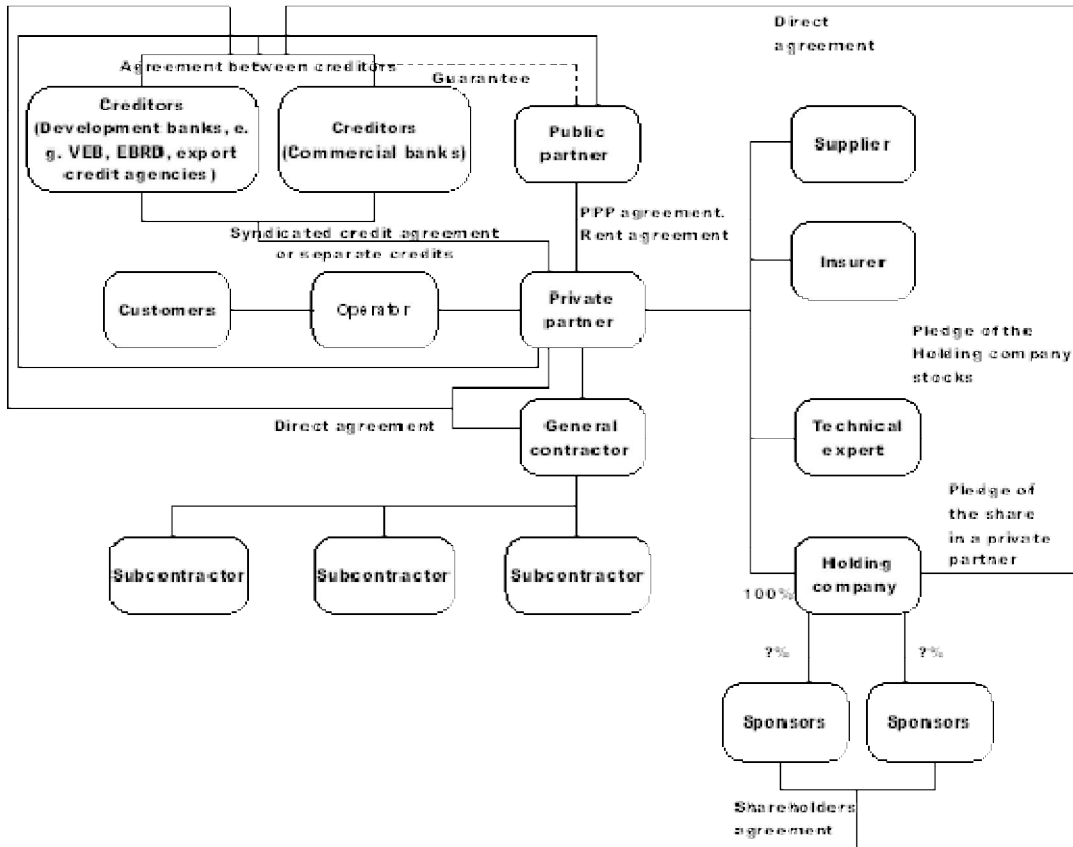


Figure 36. Typical model of financing a municipal PPP project

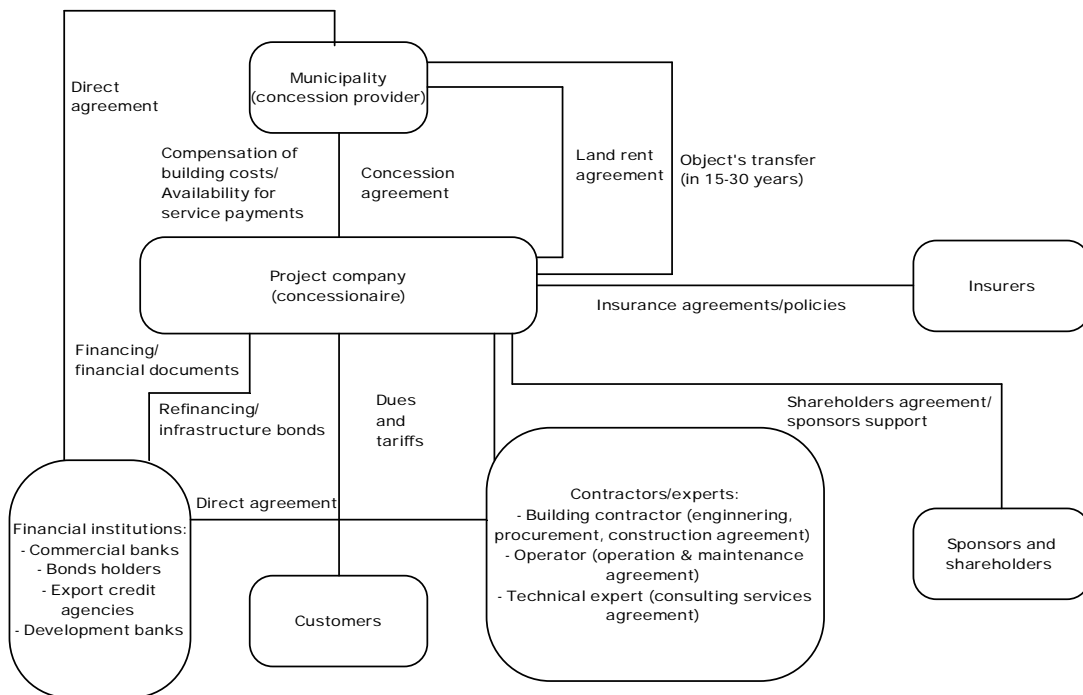


Figure 37. Typical model of funding a municipal PPP project in the form of concession

**Infrastructure bonds (IB)** are a new tool which can be used in PPP project funding. The purpose of IB is to finance infrastructure projects using the open debts market. IBs help to attract specific groups of investors like pension funds, insurance companies, and development banks. The legal base for IB is being formed. There is a project of Federal law «On the peculiarities of investments in infrastructure using infrastructure bonds» (prepared by the Federal Service on Financial Markets). Some amendments to the legislation, allowing the use of quasi-infrastructure bonds, have been made recently.

Infrastructure bonds differ from traditional corporate bonds in the following points:

- a long-run period of IB circulation (normally 15-30 years) with regard to the average term of project completion (i.e. time of construction/modernization and payback period);
- specific pledge (state or municipal guarantees, bank guarantees or bails, pledge of rights on project agreements, risk hedging, etc.);
- state guarantee is provided only for federal projects with budgets over 5 billion rubles each. Other projects can be supplied with either regional (budget more than 1 billion rubles) or municipal guarantees (budget exceeding 50 million rubles);
- purposeful utilization of the resources obtained via bond offering. IBs are usually issued on the basis of an agreement between the state (either at the federal or regional level) or municipal authorities and a special project organization which issues bonds;
- a special project organization should be created as a result of a tender on the accomplishment of an infrastructure project.

An example of the utilization of infrastructure bonds is a concession project of building and operation on a chargeable basis of a new motorway from federal highway M1 «Moscow-Minsk» to the Moscow central highway. The IBs have been issued by the consortium OAO «Main road».

### **6.3 Critical bottlenecks and problems of financing infrastructure projects**

The transport and logistics infrastructure has been constantly underfunded. The level of investment (less than 2% of the federal budget) does not allow even keeping the facilities in the current state. The elaboration of the strategic planning system for transport infrastructure development has not been started yet. There is no federal law on PPP (it is being worked out at the moment). Long payback periods for the projects,

concerning the development of the transport and logistics infrastructure, deter private investors from participating in them. There are neither clear mechanisms of state budgeting of projects, nor warranties of their funding with reference to the years of the accomplishment of the project. There is lack of a complex approach to the development of the transport system of the Russian Federation.

#### **6.4 Environmental impact assessment**

Environmental impact assessment is done on the basis of ecological expertise. According to the Russian legislation (Federal law № 174-FZ of 23.11.1995 «On ecological expertise»), there are two kinds of ecological expertise: state and public.

The first one should be carried out by especially authorized government institutions, either at federal or regional level. Authorized experts examine project documentation and assess the possible environmental effects. A positive expert decision is one of the necessary conditions of project funding and realization. The state ecological expertise should be paid by the project promoter.

Public ecological expertise is not mandatory, it may be requested by a local community if there are any concerns about possible negative consequences of the project for the environment. Public expertise does not depend on the results of the state one. Public expertise should be provided by specialized non-government organizations. The result of public ecological expertise becomes valid when it is approved by a special government authority.

In the case of the Multifunctional Sea Cargo Complex «Bronka» project, both types of ecological expertise have been relied upon. The reasons for the use of public expertise were complaints of the local community concerning possible negative effects of the project on an old oak-wood and forest reserve nearby. Despite initial concerns, both expert committees admitted that the effect of the planned project activity for the environment and health of the local population was permissible. On the basis of the public expertise there were some specific recommendations and proposals aimed at obtaining a higher level of ecological safety for the project in question.

## **7 Financing instruments in Russia - St. Petersburg perspective**

### **7.1 Review of existing financial sources**

#### ***7.1.1 Budget funds: National and regional levels***

The budgets of different levels (federal, regional, i.e. subject of a Federation, and local, i.e. municipal) are the main sources for financing investment projects aimed at developing transport and logistics infrastructure. According to the Budget Code of the Russian Federation [1], a subject of budget relations (hereafter budget subject), i.e. the Russian Federation, a subject of a Federation (region) or municipality, may spend the funds at its disposal only for the purposes of construction, modernization and/or repair of the facilities it owns. In case the budget subject of regional or municipal level does not have sufficient funds to finance the implementation of an investment program (project,) the head respective administrative territory can apply to the senior level budget with a request for subsidies to finance (usually, co-finance) the project.

An investment project is eligible for financing with budget allocations in the current year provided it is included in the Targeted Investment Program (TIP). The TIP is a list of capital investments accepted for financing in the current year and arranged in accordance with chief budgetary fund owners (executive authority bodies). A project can be included into TIP being submitted for budget financing by government agencies interested in the implementation of the project, or if it is a part of a starting or ongoing long-term Goal-Oriented Program funded by the respective budget. Such a program has to be approved by legislators for inclusion into the budget.

The Federal Goal-Oriented Program “Development of Russian Transport System (in the years 2010–2015)” [3] is an example of such a program. It includes a number of subprograms, e.g. “Motorways” [4], “Development of Export of Transport Services” [5], “Railway Transport” [6], “Marine Transport” [7], “Inland Water Transport” [8] and “General Aviation” [9]. The Goal-Oriented Program (subprogram) contains a list of investment projects and funds granted for their implementation from different sources of financing in every year of the program duration.

The total cost of the Federal Goal-Oriented Program “Development of Russian Transport System (2010–2015)” is RUR 11 450.8 billion. The Government of the Russian Federation has established the following sources of financing to provide the funds for the implementation of the Program [2]: federal budget – RUR 4740.0 billion; Regional



budgets – RUR 52.0 billion; Non-budget sources – RUR 6 658.1billion. The same sources are used to cover the costs of the implementation of the subprograms. For instance, RUR 4341.93 billion of the total implementation cost of the subprogram “Motorways” are financed from the Federal budget, Regional budgets and Non-budget sources as follows [2]: Federal budget RUR 3253 billion, including subsidies to Regional budgets; Regional budgets RUR 394.88 billion; Non-budget sources RUR 694.05 billion.

In particular, reconstruction of the “Scandinavia” section of federal motorway M-10 (which connects St. Petersburg with the Russian-Finnish cross-border check-point Torfyanovka/Vaalimaa) is financed from the sources of the “Motorways” subprogram. It is noteworthy that a Goal-Oriented Program can be developed for the implementation of a single, usually large-scale, project. In St. Petersburg, the Goal-Oriented Investment Program for the construction of the Marine Passenger Port of St. Petersburg (see Appendix XXXIII), carried out during 2006–2011 [10], and the ongoing long-term program “Financing the Construction of the West High Speed Diameter – City Highway in St. Petersburg in 2011–2019” [11] (see Appendix XXXII) are examples of this.

An investment project that is initiated and carried out by private investors can get public support in various forms, including co-financing. The conditions and volumes of budget subsidies to private investors are regulated by federal and regional laws on investments: the Federal Law “On Investment Activity in Russian Federation Carried out in the Form of Capital Investments, N 39-FL, 25 February 1999 (the latest amendments introduced on 12 December 2011, N 427-FL)[12]; the Law of St. Petersburg “On Public Support of Investment Activity on the Territory of St. Petersburg” N 185-36, 30.07.1998 (with amendments introduced on 8 May 2001, N 348-46, and on 9 December 2003, N 676-101) [13]. If budget co-financing takes place, the assets that result from this investment project must be registered as the object of common ownership, or obligations for a buy-out of the produced object either by a public or private partner must be included in the investment agreement.

### ***7.1.2 Federal Investment Fund***

According to the Decree of the Government of the Russian Federation N694 from 23 November 2005 “On the Investment Fund of Russian Federation” [14], part of the Federal Budget is segregated into the Investment Fund of the Russian Federation (hereafter the Investment Fund). The Investment Fund provides financial support to

investment projects which are significant in a nation-wide perspective and cost no less than RUR 5 billion. It also finances regional and interregional projects with cost no less than RUR 500 thousand and are implemented through Public Private Partnership. Budget allocations from the Investment Fund are provided exclusively for financing: (a) projects on construction and/or development of capital facilities in transport, energy and engineering infrastructure, and (b) implementation of concession contracts.

Budget assignments of the Investment Foundation are provided in the form of:

- investments into the construction of state-owned capital facilities;
- subsidies to the budgets of subjects of the Federation for financing regional investments;
- budget assignments for chartered capital of joint stock companies, e.g. JSC “Russian Railways”
- subsidies to the state-owned company “Avtodor” (“Russian Highways”).

The funds are assigned for financing:

- capital investments including elaboration of design documentation, preparation of tender documentation and holding of a competitive tender for the right to conclude (sign) a concession agreement;
- preparation of the ground for construction, including buy-out of the sites.

The projects that gain financing from the Federal Investment Fund have to be initiated by the federal executive authorities or the supreme body of executive power in the subject of the Russian Federation, i.e. the Governor.

The Ministry for Regional Development of the Russian Federation is responsible for services related to delivery of state support to investment projects from the Federal Investment Fund. The respective grant application procedure, the list of required documents, assessment criteria, the procedure of conducting expertise evaluation of the application and the rules for the selection of projects are determined in the “Regulations on Formation and Use of Budget Assignments from the Investment Fund of the Russian Federation”, approved by the Russian Government Resolution N 134 from 1 March 2008 [15]. The Department of Investment Projects in the Ministry conducts the project selection procedure and monitors the implementation of the selected ones. The expertise evaluation of the project is done by the stakeholders representing the Federal executive authority and the State Corporation “Bank for Development and Foreign Economic Affairs (Vnesheconombank)”. After being approved by the experts the projects are then

consequently examined by the Investment Commission and Governmental Commission. The Investment Commission makes the final decision on financing the investment project, while the Governmental Commission prepares the text of the Government's resolution and decides on the governance structure for each project supported by the Fund.

The investment projects have to meet certain requirements in order to get financial support from the Federal Investment Fund [15]. Particularly, the Budget assignments of the Federal Investment Fund are provided for the implementation of projects under the condition that at least 25 % of the project funds are supplied by a private investor for projects having nation-wide effects. For the implementation of regional investment projects, the corresponding ratio is 50%.

### ***7.1.3 Funds of Russian Financial Institutions***

Although project financing is a relatively new instrument for financing large-scale infrastructure projects in Russia, it is increasingly used in the implementation of projects, due to the advantages provided by opportunities for risk sharing, effective expanding of the sponsors' debt capacity and higher leverage (in comparison with corporate financing). This is especially important for infrastructural projects where the governments of Federal and regional levels may use PPP structures to gain an opportunity to reduce their expenditures through introducing private sector expertise and experience to the project.

There are two main suppliers of funds to large-scale infrastructure projects in Russia. They are the State Corporation "Bank for Development and Foreign Economic Affairs (Vnesheconombank)" (VEB) [16] and the financial holding VTB Group built by the JSC «Vneshtorgbank» (VTB) [17], one of the biggest commercial Russian banks. Both banks are owned by the Government of the Russian Federation and they thus act as agents of the Federal Government in different fields of the economy, and particularly in infrastructure development.

#### *7.1.3.1 State Corporation "Bank for Development and Foreign Economic Affairs (Vnesheconombank)" VEB*

VEB has the status of the State Corporation, which brings about a number of implications. According to Russian legislation it is a non-profit organization, and it does not pay profit tax. VEB is 100% owned by the Russian Federation, and the equity contributions come directly from the Federal Budget. According to 1H2011 accounts,

VEB disposed of US\$80.5 billion in total assets, US\$18.8 billion in equity, and US\$7.8 billion (9.7% of TA) in capital markets debt. The loan portfolio of VEB includes commercial credits (50%), project financing (36%), net investments in lease (8%), and other loans (6%). Senior government officers are members of its Supervisory Board, chaired by Russia's Prime Minister. Its international credit rating is at par with the Russian sovereign [18].

VEB is a successor of the "Russian Commercial Bank" established by the Soviet Government in 1922 (later on it was transformed into the Bank for Foreign Trade of the USSR). In 1997 VEB was solely responsible for the "London Club" and "Paris Club" debt restructuring process.

As an agent of the Government of the Russian Federation, VEB is responsible for: (a) management of Governmental debt; (b) management of Governmental financial assets; (c) managing the Russian State Pension Fund; (d) support for Russian economy in the crisis of 2008-2010. In May 2007 VEB became a State Bank for Development [19], and has thus been ascribed to perform the functions of: (i) lending to top priority industries; (ii) supporting infrastructure projects; (iii) attracting direct investments in key sectors of the Russian economy via the mechanism of co-investments through the Direct Investment Fund; (iv) providing subordinated loans to Russian banks.

VEB disposes a solid amount of equity, US\$18.8 billion (H1 2011 accounts) – 23.3% of the total assets, to support long-term investments. The Bank also attracts funds from domestic and international public capital markets. The share of financing from public debt market was about 15% of long-term liabilities at H1 2011[18]. The funding strategy envisages continued diversification of funding practices by raising the share of sources that attract funds from local and international capital markets by regular issues of Euro Medium-Term Notes and Eurobonds in a number of different currencies, and by borrowing under bilateral and syndicated loan facilities.

In 2011 VEB became the founder and 100% owner of the Russian Direct Investment Fund (RDIF), established by the Russian Government. The same year it became a key investor in the Macquary Renaissance Infrastructure Fund (MRIF) [18].

VEB provides funding for large-scale investment projects aimed at removing infrastructural constraints in the Russian economy. It is significant that VEB *does not compete with commercial credit institutions* and participates only in those projects that are not attractive for private investors. According to the Memorandum of the Bank's

Financial Policies [18], VEB is empowered to extend loans and guarantees for projects with a payback period exceeding 5 years and a total value greater than RUR 2 billion. In 2011, the loan portfolio of the Bank amounted to almost RUR 500 billion. The new strategy of the Bank sets a goal to increase it up to RUR 850 billion by 2015, under the condition that the share of innovation projects would reach at least 20%.

In addition to the execution of the functions mentioned above, VEB also participates in funding investment projects that pursue modernization of mono-cities, provides support to small and medium-sized enterprises through its subsidiary “SME Bank” (3.6% of Total Assets), and assists Russian exporters in the global markets.

Obviously, VEB is deeply involved in the development of large-scale projects in logistics and transport infrastructure. A list of selected ongoing projects of transport infrastructure which are implemented with a financial support from VEB is presented in Table 11 below.

**Table 11.** Ongoing large-scale projects of transport infrastructure with VEB involvement.

Name of project	VEB involvement
“Airport Pulkovo”– PPP for building, financing and operating in St. Petersburg (Appendix XXX)	syndicated loan in cooperation with international financial institutions
Moscow – St. Petersburg Toll Highway (Appendix XXXI)	syndicated 20 year loan in cooperation with JSC “Sberbank” Russian Government guarantees for bonds issued by JSC “Northern-West Concession Company”
Multifunctional Sea Cargo Complex “Bronka” (Appendix XXVII)	loan – RUR 11.16 billion
“Western High-Speed Diameter” – PPP for construction and operation of the city toll highway in St. Petersburg (Appendix XXXII)	Russian Government guarantees for bonds issued by JSC “Western High-Speed Diameter”

### *7.1.3.2 JSC VTB Bank (Vneshtorgbank) and VTB Capital S.A.*

JSC VTB was established in 1990 by the Central Bank of the Russian Federation for serving foreign trade operations and supporting Russian businesses abroad. JSC VTB, as a system constituent Bank in the Russian banking system, has established the international banking group VTB Group. Nowadays, VTB Group holds an international network unique for Russia that includes 30 banks and financial companies operating in 19 countries. In the past 10 years, the VTB Group has demonstrated a 36-fold increase in total assets (from RUR 188 billion to RUR 6 858 billion) [18]. Such impressive growth has resulted from both organic growth and major acquisitions.

The charter capital of JSC VTB Bank amounted to RUR 104,605,413,373.38 in 2012. The Russian Federation owns 75.5% of its shares. The free-float of the VTB Bank is 24.5% with 16.3% in the form of GDRs listed in London Stock Exchange and 8.2% in the form of ordinary shares listed in Moscow Stock Exchange (MICEX-RTS). The VTB Bank is the first Russian bank to offer Global Depository Receipts (GDR) [20].

The VTB Group is second in the ranking of Russian banks according to core performance measures (after JSC “Sberbank of the Russian Federation”). In terms of market capitalization, JSC VTB Bank is one of the largest companies in the Russian stock exchange. Its shares with various weights are used as constituents to calculate a number of Russian and global indices reflecting stock exchange dynamics. Standard and Poor`s includes VTB GDRs in the calculation of its emerging markets index. JSC VTB Bank is the only company representing the Russian banking sector among the Index constituents.

JSC VTB leads corporate-investment banking in Russia. There are three strategic businesses of the VTB Group: corporate, investment and retail businesses. VTB Capital S.A. [21], a subsidiary of JSC VTB, acts as the unit representing the VTB Group in investment business. Since its foundation in 2008, VTB Capital has been involved in more than 288 ECM and DCM deals, which were instrumental in attracting investments to Russia and the CIS countries worth of more than USD 117.65 billion.

VTB Capital offers a full range of investment banking products and services. VTB Capital is intended to become an effective partner for the leading construction and service companies in full range of matters related to the setting of successful consortiums for financing large-scale investment projects. With headquarters in Moscow, VTB Capital operates in London, Singapore, Dubai, Hong Kong, Sofia, Kiev, New York, Paris, and Vienna.

The VTB Group is also involved in the development of large-scale projects in logistics and transport infrastructure. Table 12 lists selected ongoing projects of transport infrastructure implemented with support from the VTB Group.

**Table 12.** Ongoing large-scale projects of transport infrastructure with VTB Group involvement

Name of project	The VTB Group involvement
Airport “Pulkovo”– PPP for building, financing and operating airport facilities in St. Petersburg	VTB Capital S.A. is: <ul style="list-style-type: none"> <li>– <b>an organizer and cornerstone investor (57%) of the consortium “Northern Capital Gateway” Ltd,</b></li> <li>– <b>private partner in PPP</b></li> </ul>
“Western High-Speed Diameter” – PPP for construction and operation of the city toll highway in St. Petersburg	VTB Capital S.A. is: <ul style="list-style-type: none"> <li>– <b>an organizer and investor of the consortium “Northern Capital Highway Ltd”,</b></li> <li>– <b>private partner in PPP;</b></li> </ul> JSC VTB is a member of a Banking Consortium offering syndicated loan of RUR 60 billion
Russian Railways Pending Acquisition of GEFCO	VTB Capital S.A. is a Joint Financial Advisor

To invest money in large-scale projects, JSC VTB Bank carries out funding operations in international capital markets in different forms, including Euro Medium-Term Note (EMTN) Programs, which are structured as Loan Participation Note Programs [22]. In August 2009, VTB Bank Capital launched a USD 5,000,000,000 structured EMTN program, which allowed VTB Capital to issue a wide range of note instruments to obtain funding, whereby VTB Capital will act as an Arranger, Issuer, Calculation Agent and Initial Dealer. In particular, the program provides great flexibility of note parameters, as it can issue notes in any currency. with any agreed maturity, redeemable prior to or at maturity, may redeem at above or below par, with an issue price at par or at a discount/premium on a fully-paid or partly-paid basis, paying floating or fixed interest rate or bearing no interest, and linked to index, equity, currency, commodity, fund, or credit.

Among Russian Financial Institutions, JSC VTB is distinguished by its international network. The latter provides JSC VTB with much greater flexibility in borrowing money from international financial markets. Therefore, it may be regarded rather as an

international financial institute that provides cash flow from international debt capital market to implement Russian large-scale investment projects.

### 7.1.3.3 Other Russian Banks

There are not very many non-state-owned Russian banks that have capacity to finance large-scale infrastructure projects. JSC “Sberbank of the Russian Federation” (Sberbank) [23] and JSC “Gazprombank” [24] are the most prominent actors in this field. Both of them have experience of financing large infrastructural projects, including PPP projects (see the cases on “*Western High-Speed Diameter*” and “*Moscow – St. Petersburg Toll Highway*”). Sberbank is rushing now to develop and widen its operations in corporate investment banking (CIB). For this purpose, Sberbank acquired one of the leading Russian investment companies “Troyka-Dialog” in 2011. In the nearest future “Sberbank” is expected to become a serious rival for the VTB Group in CIB market in Russia.

### 7.1.4 Russian Direct Investment Fund

The Russian Direct Investment Fund (RDIF) [25] was established by the Russian Government in June 2011 to attract foreign private equity investments to the Russian economy. In five years it will be capitalized with \$2 billion a year in state cash to reach a total of \$10 billion. Under its mandate, the RDIF is required to secure co-investment for investment projects in volumes that, at a minimum, match its own commitment. The RDIF is supposed to operate under the guidance of Vnesheconombank.

Priority areas for RDIF investments are determined by the Russian Government [26]. They include the innovative industries (5) and sectors for modernization (5) listed below in Table 13.

**Table 13.** Priority investment areas of the Russian Direct Investment Fund

Modernization sectors	Innovative industries
1. Advanced processing of natural resources	1. Aerospace
2. Agriculture and food retailing	2. Alternative energy
3. Added-value mining	3. Nuclear power
4. Housing/construction materials	4. Pharmaceuticals and healthcare
5. Transport and logistics	5. Telecommunications and IT



#### *7.1.4.1 Co-investment Model*

The foremost goal of the RDIF is to generate robust returns for the Fund itself and its co-investors. The RDIF investment policy is regulated by the Russian Government. Respective regulations are specified in the Co-investment Model of the RDIF [27] and in the structure of the investment process. The RDIF has a mandate for co-investing with an international partner in any type of investment deal. For every dollar invested by RDIF, at least one dollar must be invested by a co-investor. The potential co-investors must meet the requirements established on the lower limit for the volume of their assets or revenues. For financial investors, a respective limit is set for the assets – they need to have asset value exceeding US\$1 billion. In the case of strategic investors, the requirement stipulates the lower limit for the revenues, which also equals US\$1 billion.

Both RDIF and its co-investors may initiate deals with “an open membership”, i.e. later on the deal can be joined by external partners upon the founders’ offer.

RDIF can invest only in projects that are implemented by a Russian operator. The operator has to qualify for the project by meeting the requirements for a qualified management team and good corporate governance, and a high degree of financial and operational transparency of the company. RDIF’s investments range in size from US\$50 million to US\$500 million, implying a total equity commitment from at least US\$100 million to US\$1 billion, given the requirement of co-investment [28]. RDIF’s own stake should be limited to 50% at the most. However, it can own controlling stakes in companies in partnership with a co-investor. RDIF has to exit its investments via public listing of the asset or a sale to strategic buyers.

#### ***7.1.5 Other Russian and Foreign Direct Investment Funds***

According to the statistics of 2011, the Russian investment market is in a process of recovery after a substantial decline in 2009. In 2011 the total value of transactions in the Russian market reached US\$ 79 billion against US\$ 55 billion in 2010. The Russian market has remained highly concentrated since 2001: 85% of its total value is generated by 10-15% of transactions.

The survey “Russian direct investments market and activity of investments foundations. Results of 2011” produced by RWM Capital presents the following results of this type of investment activity in the Russian Federation in 2011 [29]:

- 67 investment transactions of this type with a total worth of US\$ 4780 million involving 31 Investment Funds;
- the leading value market segment is real estate and development (53% of total value), with retail and services at the second place (16%);
- telecommunications and IT is the leading market segment in the number of investment transactions (27 transactions);
- 70% of investment volume came from foreign funds (see table 14).

It is worth mentioning that the transport and logistics infrastructure is not a priority area for investment in the view of Investment Funds. Only 13 of 31 Funds have identified infrastructure, transport and logistics as potentially attractive for investments. At the same time, only 2 investment transactions with transport infrastructure objects were registered in Russia in 2011. They were: acquisition of 29.1% (US\$ 290 million) of the Far East Steamship Company by Russian Nomos-Bank, and the sale of Sberbank-Capital's 10% in Global Ports (US\$ 238 million) to the Group "N-Trans".

**Table 14.** Five largest investors among Direct Investment Foundations in Russia in 2010 – 2011

Foundation	Investments (USD million)		Foundation
	2011	2010	
Morgan Stanley	1100	700	Marshall Capital Partners
Verny Capital	700	435	RWM Capital
PPF Group	625	250	Lenmar Capital
Baring Vostok	443	193	Russian Real Estate Fund
UFG	325	100	A1 (Alfa-Group)
<b>Total:</b>	<b>3193</b>	<b>1678</b>	

Source: RWM Capital, [on line] available at

<http://en.rwmcapital.ru/ArchiveNA.aspx?T=A>

### ***7.1.6 International Financial Institutions***

The list of international financial institutions acting in Russia is expanding. Now they are represented not only by the European Bank of Reconstruction and Development (EBRD) [30], the World Bank and its International Financial Corporation (IFC) [31], as a few years ago. There are a number of newcomers, among which the most remarkable are

the Eurasian Development Bank (EADB) [32], the Nordic Investment Bank (NIB) [33], and the Black Sea Trade & Development Bank (BSTDB) [34]. Various private investment funds have also started their operations in Russia in the last 2 years.

The EBRD supports Russia in its efforts to diversify the economy, to develop its infrastructure, and to improve energy efficiency and innovations. Besides that the EBRD provides significant support to small business. In 2011, the Bank signed a total of 74 projects worth €2.9 billion. It is noteworthy that Russia, in addition to being a country of EBRD operations, is also an emerging donor of the EBRD. In 2011 Russia pledged a new contribution of €20 million to the Northern Dimension Environmental Partnership Fund.

The scope of activities carried out by foreign financial institution in Russia usually includes consulting services, operations on Russian Debt and Equity Markets, and project financing (either as co-investor or lender). As a rule they carry out their activities by being involved in international consortiums established by major Russian financial institutions. All the above mentioned international financial institutions, along with VEB are the main financiers of the company “*Northern Capital Gateway, Ltd*” implementing the project of building, financing and operating “*Airport Pulkovo*”. Currently, the international financial institutions typically do not aspire for the role of a cornerstone investor or lender in large-scale investments projects. However, their participation in the project brings a reputation effect which is valuable for the emerging Russian PPP projects market. The involvement of international financial institutions is perceived by private companies (both domestic and foreign) and financial institutions as a positive signal for investing in Russian large-scale infrastructure projects.

#### ***7.1.7 Private investors***

The transport infrastructure is not attractive for private investment because of the extremely long payback period (very low return on investment). Significant private investments in the development of transport-logistics infrastructure come mostly from state-owned or state-controlled monopolies (*Russian Railways, Gazprom, Transneft*), large companies in raw-material industries (Lukoil), and private providers of transportation services (*N-Trans*).

Regarding infrastructural projects carried out by RZD, it has to be taken into account that an essential part of the RZD investment program relies heavily on funds from the Federal Budget. The Russian Railways as a company 100% owned by the Russian

Federation gets subsidies from the Federal Investment Fund in the form of contribution into the chartered capital on a regular basis.

The N-Trans Group represents another type of private investor in the development of Russian transportation and logistics infrastructure. The N-Trans Group is the largest private operator of transportation services in Russia (it consists of more than 20 companies operating throughout the transportation sector). The core businesses of the N-Trans Group (transport-forwarding services in the fields of international and internal railway, sea, river, and truck shipping operations; rail transportation; transportation of bulk-oil cargoes; cargo handling in ports; transportation of metal, raw material, bulk-oil, and other kinds of cargoes; container shipping; arrangement of multimodal transportation; and logistics) assume the maintenance and development of transportation and logistics infrastructure. The N-Trans Group is involved in the implementation of the PPP project of constructing the Moscow – St. Petersburg Toll Highway (through the *West Concession Company*). In 2010 another member of the N-Trans Group – *Global Ports* (75 % of the company is owned by the N-Trans Group) initiated building the transport-logistics center Yanino in the Leningrad region (close to St. Petersburg). In partnership with the *Finnish Container Finance Group* (a strategic partner of N-Trans Group), *Global Ports* invested USD 145 million in the project (note: the project has received a USD 87.5 million loan from VEB).

Yanino is a unique logistics center that has container and railway terminals, storage and customs facilities, railway and motorway connections with terminals of the Big Port of St. Petersburg, and motorway connection to the terminal Moby Dik (100% subsidiary of Global Ports) in the port of Kronstadt.

## **7.2 Models of financing infrastructure projects**

St. Petersburg is the second largest city in Russia both in territory (occupies the square 1439 km<sup>2</sup>) and population (exceeds 5 million citizens), known as the “Nothern Capital of Russia”.

It is the largest transport nodal point, across which international shipping operations and passenger transportation are executed by all kinds of transport. Respectively, all kinds of transport infrastructure are presented on the territory of St. Petersburg: motorways; railway network; the Big Sea Port, the largest operator providing dry cargo transshipment in Saint-Petersburg and the North-West of Russia; the Marine and River

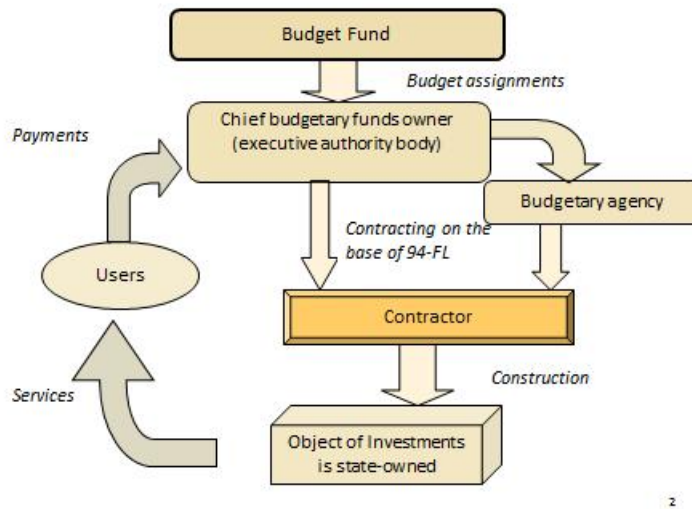
Passenger Terminals; the “Pulkovo Airport” ranks 3<sup>rd</sup> by passenger flow among all Russian airports; terminals and warehouses; oil- and gas pipelines. Two Eurasia transport corridors “North-South” and “Trans-Sib”, as well as Pan-European corridor 9 run across the territory of St. Petersburg. However, the development of transport infrastructure of St. Petersburg was permanently underfinanced.

Development of transport-logistics infrastructure is the first-priority task for the Government of St. Petersburg. “The Strategy of development of transport-logistics complex in St. Petersburg for the period up to 2030” defines target indicators for progress and gives a list of projects of the highest priority. This list includes building of the toll city highway “Western High -Speed Diameter” (Appendix XXXII), reconstruction and development of the “Pulkovo Airport” (Appendix XXX), and erection of the Marine Passenger Port for hosting passenger ferries and cruise ships (Appendix XXXIII). Implementation of these large-scale projects requires attraction of all possible financial sources and developing appropriate model of financing for each project. These projects being long-term and large scale are good instances to study the different models of financing of the transport-logistic infrastructure development in Russia.

Implementation of the projects on development of transport and logistics infrastructure may employ different models of financing. With regard to the type of financial sources (public or private) involved these models can be divided into the following groups: 1) direct budget funding; 2) budget funding through buy-out of liabilities and equity of private company, implementing infrastructure project; 3) PPP models; and 4) financing of cross-board projects.

### ***7.2.1 Direct budget funding***

If an investment project has obtained budget assignments for current year, a chief budgetary funds’ owner (usually, it is a body of executive authority) being responsible for financing this project must conclude a state contract on construction/repair or maintenance of the infrastructural facility either with private or state–owned organization. Such contracting may also be executed through subordinated budgetary agency. After implementation of investment project the facility produced becomes a proprietary asset of the state.

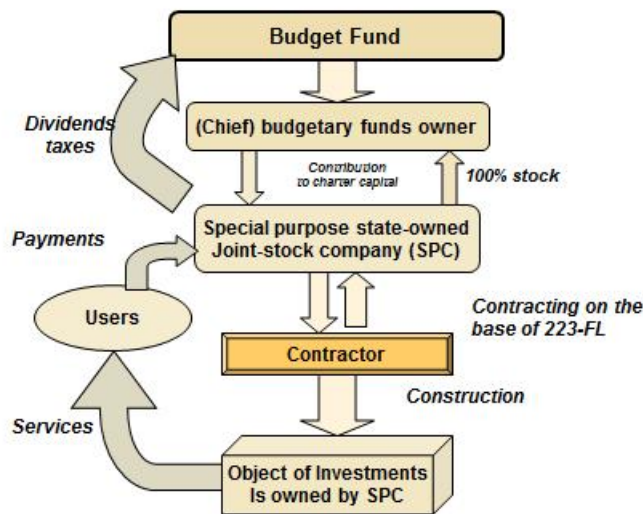


**Figure 38.** The model of direct budget financing investment project

The Federal Law “On Placement of Orders for Supplying Goods, Executing Works, and Providing Services for State and Municipal Needs” (Federal Law N 94-FL) [35] strictly regulates tendering procedures for contracting, content of a state contract as well as many other details such as rules for specification of a contract object, relations between contracting parties, etc. This law appears to be quite appropriate for purchasing goods of mass production, provision of the services that are free of high specificity of competences or assets. At the same time the Federal Law N 94-FL finds out certain inadequacy in cases when a subject of contract is implementation of unique investment project of high complexity. The Law gives priority to minimal price of a contract as criteria for contractor selection, thus, by fact putting aside various quality issues. Particularly, it does not allow for differentiation of contract applicants with regard to their qualifications prior to tendering. It also does not assume the possibility of concluding long-term complex agreement with single contractor. Standard model for a state contract is quite simple (if not oversimplified) and does not promote effective governance for the long-term contract, preserving contractor’s opportunism both at the tendering and contract fulfillment stages. Huge production and transaction costs raised by imperfection of legislation and contractor’s opportunism push public officials to find another ways to arrange contracting while placing the state order.

The Budget Code also assumes an alternative model of direct budget funding of investments. It is the budget’s contribution into chartered capital of state-owned

company. This form of investments is widely used for budget financing of investment programs of JSC “Russian Rail Ways”. In case of “green field development” (e.g., construction of city highway) the city authorities may set up a joint-stock company (100% state-owned special purpose company – SPC) for implementation of the long-term investment project. Then, funding of such project goes through state contribution into chartered capital of newly established SPC. The SPC is authorized to place state order and govern contract relations during the life cycle of investment project and, finally, it becomes the nominal owner of assets emerging as result of investment.



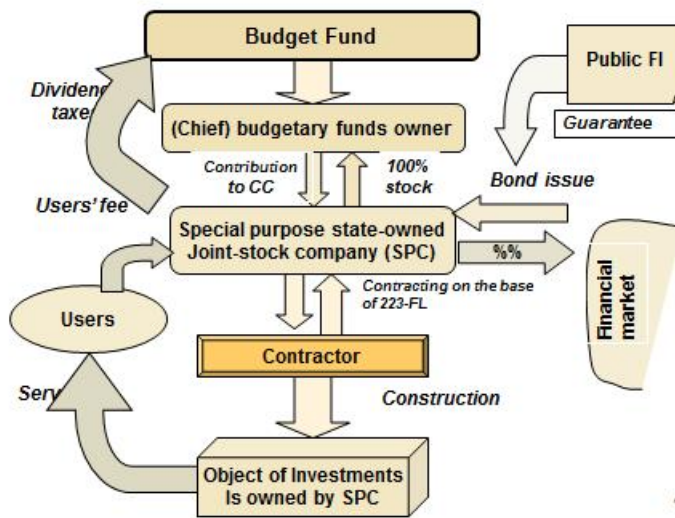
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**Figure 39.** The model of budget financing in the form of contribution into chartered capital of state-owned company

The model of budget financing via contribution into chartered capital of state-owned company provides certain advantages for project implementation:

- It provides an opportunity to avoid some of strict restrictions imposed by the Law N 94 – FL, since starting from 2011 procurement of state-owned corporations is regulated by more flexible Federal Law N 223 –FL [36].
- Being a joint stock company SPC gains the right for VAT exemption, thus, saving money for investments.
- Government-backed SPC is a good tool for preparation and managing PPP project from the public side.
- Government-backed SPC can be used for debt financing of infrastructure project (issue of “infrastructure” bonds) without increasing state debt.

The model of budget financing via contribution into chartered capital of state-owned company was used in construction of the city toll highway “Western High-Speed Diameter” (“WHSD”) in St. Petersburg (see Appendix XXXII). In 2011-2012 respective state-owned SPC issued 20-years coupon bonds under guarantee under guarantee of VEB and Ministry of Finance for attracting additional RUR 25 billion for investing in the project (see, Figure 40.)



**Figure 40.** The model of mixed financing investment project (budget funds + “infrastructure” bonds)

### ***7.2.2 Budget Financing through Buy-out of Private Company Implementing Project***

It is not a commonly used way for budget financing of investments. This model was employed for implementation of the project of construction of Marine Passenger Port of St. Petersburg for hosting passenger ferries and cruise ships (see Appendix XXXIII). This project had started in 2006 when the City legislation on Public Private Partnership did not exist. Project implementation included 5 stages described below.

#### 1. Feasibility study stage.

Feasibility study was conducted by Private Investor and it was further used as a base for elaboration of respective Goal-Oriented Program of St. Petersburg. Approval of the Program by the City authorities allowed reserving funds in St. Petersburg Budget needed



for financing a buy-out (during 4 years) of private company after completing investment program.

2. Construction of investment objects by Private Investor.

Financing of the project was secured by private company. It has used both equity and liabilities (bank loans and convertible secured corporate bonds issued by private investor). The new St. Petersburg Passenger Port was opened in 2008 after the first ocean liner has arrived. After that the City started to buy out the bonds that were issued by Private Investor for implementation of the project.

3. Sequential buy-out of secured convertible bonds by the City.

The buy-out was financed with the monies coming from the budget funds reserved for the Goal-Oriented Program of St. Petersburg (2008-2010).

4. Buy-out of Private Partner's share package by Public Partner after the facility was fully set in operation (2011).

Up to this moment Public Partner had a right to offer bonds to Private Partner for pay off.

5. Paying off bonds by converting them into common shares.

This pay off completed the transaction in 2011, and made the Public Partner a single owner of the object of investments.

### ***7.2.3 Public-Private Partnership***

There is no Federal Law on Public-Private Partnership (PPP) yet, thus, it is not surprising that the term "public-private partnership" is not defined in Russian Federal legislation. Existing Federal Law "On Concession Agreements" [38] determines rights and obligations of the parties in concession agreements, defines types of eligible concession agreements, regulates procedures of preparation of concession agreements and tendering, establishes possible criteria for selecting contractor, etc. Federal Law "On Concession Agreements" is focused on concession related types of PPP. Therefore, it imposes strict constraints on other possible forms of PPP and, hence, substantially reduces flexibility required for elaboration of PPP agreements with regard to specifics of the industries. Besides that there is a number of other imperfections in Federal legislation related to PPP. Therefore, Regional Authorities reacted on this situation with elaborating and enacting of Regional Laws on PPP: currently 64 subjects of the Russian Federation have regional laws on PPP.

St. Petersburg legislation on PPP is recognized as one of the most advanced among regional legislations in the country. The principle points of St. Petersburg PPP legislation are transferred to the Federal bill “On Public Private Partnerships”. The bill was elaborated by the Ministry for Economic Development and, recently, it was submitted for consideration of the Government of the Russian Federation. The following legal acts constitute the core of St. Petersburg legislation on PPP: St. Petersburg Law, N 627-100, from 25.12.2006 “On St. Petersburg Participation in Public-Private Partnerships”, Resolutions of the Government of St. Petersburg N 392, 16.04.2008, N 81, 27.01.2011, N 82, 28.01.2011, N 672, 02.07.2012 “On forms of St. Petersburg participation in Public-Private Partnerships”[39].

The St. Petersburg PPP legislation is attributed the following strengths:

1. Flexibility.

It gives opportunity to use various PPP models. Table 15 represents some of PPP models that can be arranged by public and private partners in compliance with St. Petersburg legislation.

**Table 15.** Selected PPP Models feasible in compliance with St. Petersburg legislation.

<b>Models</b>	<b>Cases in St. Petersburg</b>
Build-Transfer-Maintain	Building of schools and kindergartens
Build-Finance-Lease-Operate-Transfer	City highway “Western High-Speed Diameter”
Design-Build-Finance-Own-Operate-Transfer	Reconstruction and development of Pulkovo Airport (Pulkovo)
Lease-Renovate-Maintain-Operate	Reconstruction of boiler stations providing heating of residential houses in several urban districts of St. Petersburg
Build-Own-Operate	Feasible, no cases yet

Currently, there are two ongoing large-scale transport infrastructure projects in St. Petersburg that are carried out as the PPP. One of them is “Western High-Speed Diameter” (WHSD), a project for construction of the city 46,6 km long highway that will introduce straight connection of Southern and North-Eastern parts of St. Petersburg passing by downtown (see Appendix XXXII). The second project is a reconstruction and development “Pulkovo Airport” (see Appendix XXXII). It has to be mentioned, that

because of economic crisis of 2008 a number of large city projects shaped as PPP were canceled or temporarily frozen. However, some of smaller, hence, not so expensive projects of building standard objects of social infrastructure (schools, kindergartens), renovation of boiler stations were successfully realized in the frame of PPP agreements. The latter PPPs were designed to improve quality of construction works and to reduce the period of construction rather than to attract private investments.

2. Decision to design a PPP for implementation of investment project is made by the special commission on the basis of “value of money” criteria.

The PPP concept for implementation of investment project is elaborated by either a body of executive authority or by external experts. The PPP concept includes financial models related to direct budget financing, purely private financing and joint public-private financing. The PPP preparation stage starts provided the concept gives an evidence of appropriateness of PPP setup for implementation of the investment project and economic benefits originated by PPP shaping. This stage results with tendering documentation and design of PPP agreement.

3. The list of objects eligible for PPP agreement and the scope of functions that could be delegated to the private partner are settled and known to the potential partners in advance.
4. Possible forms of involvement in PPP of the City of St. Petersburg and other legal entities that can represent public party are determined.
5. Tender procedures, requirements to tender documentation are clearly defined.
6. Evaluation of bids in a tender is based on the principles, reasonable range of assessment criteria and procedures that are established in respective legal acts.

A tender between applicants, i.e., private partners, for participation in the partnership is a crucial stage in creation of PPP for the project implementation. The tender procedures assume the following stages.

Tender announcement<sup>1</sup>.

Advance canvass

Preliminary selection of applicants for bids<sup>2</sup>.

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<sup>1</sup> Usually, tender announcement is accompanied by a roadshow of the investment project.

<sup>2</sup> Preliminary selection of applicants fully relies on eligibility of the applicant assessed according to the following criteria: legal status, qualifications' requirements, scale of operations, professional experience in a respective area, revenues and financial solvency. It is important that specifications of the criteria (up

Submission of bids by qualified applicants<sup>3</sup>.

Evaluation of bids<sup>4</sup>.

Negotiation with a winner and conclusion of PPP agreement<sup>5</sup>.

The PPP agreement being concluded by the parties come into force only after financial closure of main contracts<sup>6</sup> takes place.

Specific feature of St. Petersburg PPP model for implementation of long-term large-scale projects is presence of two legal entities on the side of public partner. They are the City of St. Petersburg and Special Purpose Company 100% owned by the City (SPC). This SPC keeps a project brand-name, e.g. JSC “Pulkovo Airport” or JSC “Western High-Speed Diameter”, and nominally owns public assets granted on lease to Private Partner in accordance with PPP agreement. It also provides assistance to a Private Partner in getting various permissions from the state authorities and arranging experts’ appraisals. SPC is responsible for preparation land plots. It also executes control functions over Private Partner. Particularly is monitors Private Partner’s operational performance, fulfillment of contract obligations. Summing up, SPC is assigned a task of governing an execution of the PPP agreement.

The core of each PPP consists of the models that specify how public and private partners share the project’s costs (financing), responsibilities, risks and revenues. The structures of respective sharing may differ essentially from one PPP to another as it is seen from the cases of “Pulkovo Airport” and “WHSD” described below.

#### Allocation of obligation and rights within the PPP

The tables 16 – 17 represent sharing of obligations and rights in PPPs of “Pulkovo Airport” and “Western High-Speed Diameter”, respectively.

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to specific metrics) are published in the tender documentation and are available to all applicants beforehand.

<sup>3</sup> The bid must contain 2 or 3 parts: technical, financial and, if necessary, juridical.

<sup>4</sup> Evaluation of a bid is conducted separately for each part, i.e., technical, financial and juridical. The winner is determined by the highest aggregate score. Legal acts provide description of a tender in a rather general way. They outline general frame of a tender, requirements for the structure and content of a tender documentation, general scheme of bids’ evaluation, the order of bids’ consideration, evaluation and decision making process on a winner. The general outline of the tender is then specified for each PPP project by an individual tender documentation package reflecting projects’ peculiarities. Usually an individual tender documentation is elaborated by the experts and has to be approved by special Resolution of the Government of St. Petersburg. Performance measures, scales for estimation, weights of various metrics used in assessment are designed for particular project beforehand at the stage of preparing tender documentation.

<sup>5</sup> Negotiations can last up to 6 months.

<sup>6</sup> Main contacts are the contracts between Private Partner and lenders, between Private Partner and General Contractor, and direct agreement between St. Petersburg and lenders.

**Table 16.** The Partners' obligations and rights in PPP "Pulkovo Airport"

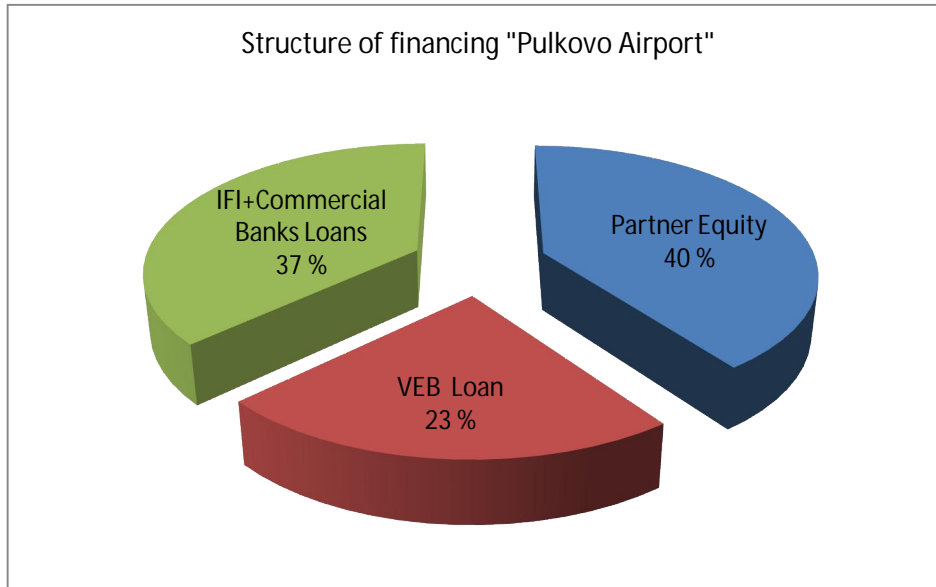
Partner	Obligations	Rights
St. Petersburg City	<p>To let out on lease land lots to the Partner for construction of an object.</p> <p>To let out on lease to the JSC "Pulkovo Airport" the state-owned airport assets (runways) needed for maintaining operations of "Pulkovo Airport"</p>	<p>To own 100% shares of JSC "Pulkovo Airport" and those of airport assets that by Russian Law must exclusively be the State property.</p> <p>To get 1/100 share of joint ownership with NCG for all reconstructed and newly built facilities</p> <p>To hand back all the airport infrastructure after the end of PPP-agreement period</p>
SPC "Pulkovo Airport JSC"	<p>To let out on lease/sublease or sell to the Partner the assets needed for maintaining operations of Pulkovo Airport</p> <p>Transfer project documentation, and all operation and development of PulkovoAirport to the Partner</p> <p>To develop the project site</p>	<p>To own the Airport assets granted on lease to the Partner</p> <p>To monitor operations and quality of services (160 trigger indices put in agreement)</p>
Private Partner, <i>"Northern Capital Gateway Ltd."</i> (NCG)	<p>To build up new facilities and real estate in the airport;</p> <p>To finance the project;</p> <p>To operate and maintain the airport</p> <p>To pay annuities to the City and "Pulkovo Airport"</p> <p>To transfer the ownership over all the airport infrastructure to the City after the end of PPP-agreement period</p>	<p>To obtain the right to rent the land plots and airport assets;</p> <p>To gain exclusive rights to operate the airport which by the agreement will be the only one in the city for, at least, 30 years</p> <p>To get 99/100 share of joint (with the City of St. Petersburg) ownership in all reconstructed and newly built facilities</p> <p>To get income from operating airport during the period of PPP agreement</p>

**Table 17.** The Partners' obligations and rights in PPP "WHSD"

<b>Partner</b>	<b>Obligations</b>	<b>Rights</b>
St. Petersburg City	<p>To let out on lease land lots for construction to the Private Partner</p> <p>To provide budget allocations for compensation payments to Private Partner and debt service of JSC"WHSD"</p>	To own 100% shares of JSC"WHSD"
JSC"WHSD"	<p>To develop the project site</p> <p>To supply the Private Partner with project documentation;</p> <p>To let out on lease the ready-built segments of the road to the Private Partner for operation and maintenance;</p> <p>To pay compensation to the Private Partner to secure the lower limit of income stipulated in the agreement</p> <p>To manage the debt issued by JSC"WHSD"</p>	<p>To own the city highway WHSD</p> <p>To monitor the Private Partner's operations and services' quality</p> <p>To negotiate and agree (on behalf of the City) on tolls rates proposed by the Private Partner</p>
Private Partner, "Northern Capital Highway, Ltd" NCHW, Ltd	<p>To build up and finance construction of central section of the highway</p> <p>To maintain and operate the whole highway during time of validity of the PPP agreement</p>	<p>To collect tolls and get income from operation of WHSD</p> <p>To get compensation for gaps in income (against lower limit of income settled in the agreement) from the City Budget</p> <p>To establish tolls rates agreed with the City authority</p>

The sources and instruments used for covering the project costs

The figures 41 and 42 below describe the sources and instruments used for financing projects of "Pulkovo Airport" and "WHSD", respectively. The comments provide insights on conditions of each PPP agreement.



**Figure 41.** The Structure of financing reconstruction and development of the “Pulkovo Airport”

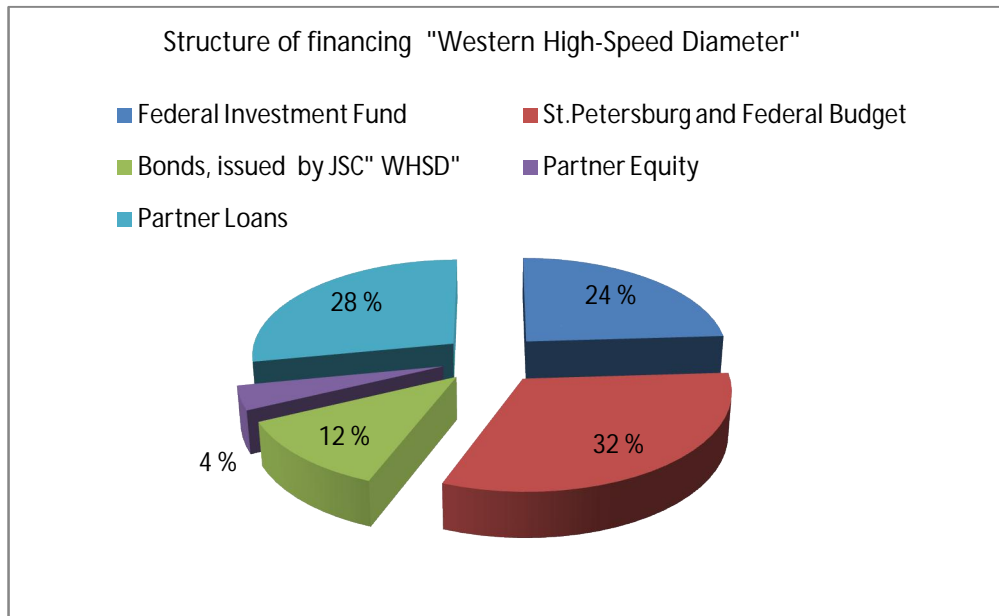
Source: [www.micex-nw.com/presentations/GCP\\_Chichkanov\\_pulkovo\\_1.pptx](http://www.micex-nw.com/presentations/GCP_Chichkanov_pulkovo_1.pptx);  
[www.pulkovoairport.ru](http://www.pulkovoairport.ru)

The “Pulkovo Airport” and “WHSD” PPP projects have in common public investments made in advance to creation of the PPPs. Public investments provided a solid ground for each PPP.

Formally the “Pulkovo Airport” PPP agreement does not assume public financing since all funds, as presented at the chart, are attracted by the Private Partner. However, as mentioned above, the Public Partner (Federal Government) made its contribution into this project prior to establishment of the PPP for the project implementation. The Public Partner accomplished reconstruction of two runways and equipped them in compliance with the international standards. Respective costs incurred by the Federal Government were not accrued to implementation of the PPP project, thus, formally it does not contain public financing.

At the same time the chart at Figure 7.3.2 shows that 2/3 of total costs of the “WHSD” PPP project are covered from the sources attracted by the Public Partner and only 1/3 was born from the sources engaged by Private Partner. However, the numbers should be treated carefully taking into account that initially the investment project of WHSD construction was financed through traditional budget funding model. The PPP agreement was concluded after 2/3 of construction works were completed. Therefore, the

Private Partner's share of 1/3 in the total cost of project is related to smaller fraction of the project and, hence, it should be not perceived as relatively small compared with the case of PPP "Airport Pulkovo".



**Figure 42.** The Structure of financing construction of the city highway "Western High-Speed Diameter"

Source: [www.whsd.ru/raskritie-informazii/10/](http://www.whsd.ru/raskritie-informazii/10/);  
<http://gov.spb.ru/press/governor/27514/>

#### Determination of Private Partner's income and risks' allocation

The chart at Figure 42 describes the Private Partner's income sources at the operation stage of "Pulkovo Airport" project and distribution of operational income between the parties. Operation of the airport facilities and commercial real estate are the sources of income to the Private Partner, who pays annuity to the JSC "Pulkovo Airport" and taxes to the City Budget. Annual payment includes fixed (rent) and variable (royalty) parts. The fixed payment is rental payments for the land plots and airport facilities in accordance with lease contracts. Initial amount of rent payment was determined prior to creation of the PPP. It is adjusted according to index of costs inflation, eliminating inflation risk for the Public Partner. Variable part of annual payment is dependent on the performance of the "Pulkovo Airport" and calculated as a percentage of gross income from operations.



The percentage payment in favor of the City acted as an evaluation criterion for financial part of the bid<sup>7</sup>. The larger volume of fixed payment implies the higher share of demand risk, i.e., risk related to volatility of the passengers' and cargo flows, taken by Private Partner. Construction risks are fully born by the Private Partner, while the risk of changing legislation is accrued to the Public Partner. The agreement makes provisions for reconsideration and changing of certain points in the agreement once an essential change in legislation occurs.



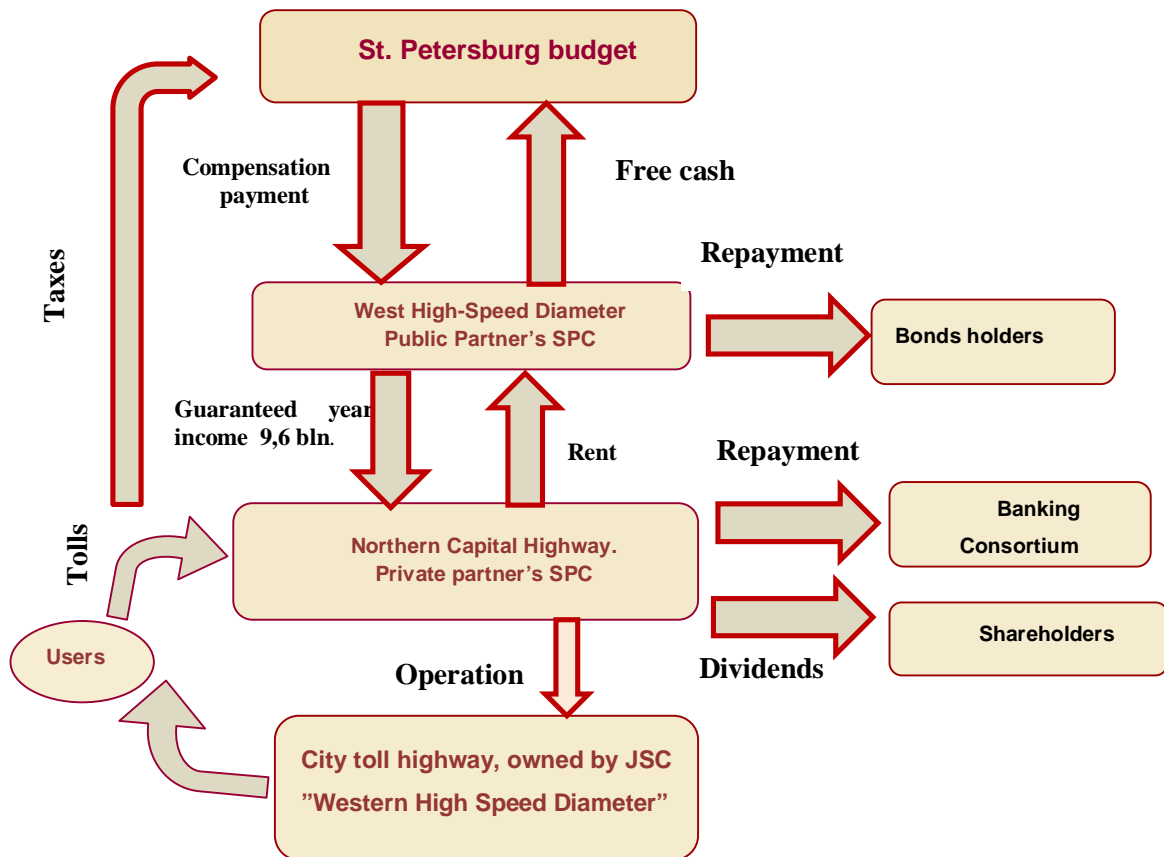
**Figure 43.** Model of financing “Pulkovo Airport” project on operation stage.

The “WHSD” PPP employs different model for the Private Partner’s income formation and risks allocation between the partners. The demand risk sharing scheme assumes that the City of St. Petersburg has to ensure to the Private Partner a certain level of annual income, which is perceived as minimum income volume the Private Partner gets for sure. The volume of guaranteed lower limit of income was a criterion for

<sup>7</sup> The financial part of a bid included two criterial parameters: the volume of percentage payment to the City Budget and a volume of Private Partner ‘s investment.

evaluation of tendering bids<sup>8</sup> alongside with a volume of investment. The existing PPP agreement stipulates that if the annual sum of tolls collected is less than RUR 9,6 billion, then deficient amount must come from the City Budget. The PPP agreement also envisages compensations from the City Budget for debt servicing (“infrastructure” bonds of JSC “Western High-Speed Diameter”).

Both PPP agreements also include Private Partner’s obligations to insure a number of risks related with Private Partner’s property and operations. As far as both projects can have a negative environmental impact, PPP agreements stipulates Private Partner’s environmental liability in accordance with Russian ecological standards and norms for the term of the PPP agreement.



**Figure 44.** Model of financing WHSD project on the operation stage

<sup>8</sup> The smaller sum of guaranteed by the City income the higher demand risk taken by the Private Partner.

Advantages of PPP model for financing infrastructure.

The officials of the St. Petersburg Government (working for the Committee for Investment)[40] being interviewed on implementation and financing of investment projects as PPPs pointed out the following advantages of this framing: (1) it provides an access to valuable (tangible and intangible) assets brought into the project by the Private Partner, i.e., advanced technologies, experiences of private partners, especially those from abroad, in project management and financing, ensuring higher quality standards for infrastructure and services; (2) existence of bank consortium involved in project financing ensures rigorous control of costs; (3) PPP framing of the projects opens an access to additional sources of financing and allows to spread the risks; (4) a PPP agreement properly structured provides a sound basis for contract governance creating incentives for effective alignment of the partners' goals.

As critical bottlenecks for implementation of the investment projects the St. Petersburg Government officials named: (1) hardships in getting access to land plots for implementation of infrastructural projects caused by lack of city-planning documentation on project sites, overcomplicated and confusing specification of the property rights, and lack of clear legislation on withdrawal or redemption of land plots; (2) experienced by public side, i.e., governments, lack of competences required for elaboration of project and negotiating the terms of creation the respective PPP.

Being a subject of the Russian Federation St. Petersburg is in a favorable position for launching and implementation of infrastructural projects in the form of Public Private Partnership. The favors are born by unique combination of socio-political and economic conditions. The following seem to be most important among them:

- Existence of sound legal basis for participation of the city of St. Petersburg in PPP;
- Large size of the city budget;
- Presence of special body for elaboration of projects in the frame of PPP, (Committee for Investment in St. Petersburg City Administration)
- Presence of good business communications between the St. Petersburg City Administration and major Russian banks, international financial institutions and international consulting companies from previous co-operation.

- Rich experience in structuring infrastructure projects of various kind as PPPs: city airport, city toll highway, a waste disposal (treatment) plant, city water supply network, construction of schools, etc.

Thus, it is not surprising that St. Petersburg ranked first among Regions of Russian Federation in readiness for PPP. The ranking was carried out by the PPP Development Center [<http://www.pppcenter.ru/ru/news/pppcenter-news/centrom-predstavlen-rejiting-regionov-rf-po-urovnyu-razvitiya-gosudarstvenno-chastnogo-partnerstva;>]

#### ***7.2.4 Financing cross-border projects***

Private and public funds can be used for financing cross-border projects. Private financing cross-border projects aimed at the development of transport infrastructure are usually carried out through setting of a new joint stock company owned by Russian and foreign partners investing in its assets. A good example for that is a new transport-logistic center Yanino. The Global Ports, Russian market leader in container handling, in partnership with Finish Container Finance Group (currently owns 25% share) invested USD 145 mln. into construction of a new transport-logistic center Yanino. M&A deals are an alternative form of private investments into cross-border infrastructure objects. These deals are regulated in market terms. Currently, the Global Ports stands a strategic investor in Finish port assets owning 75% share in MLT Kotka and MLT Helsinki.

Examples of cross-border cooperation for development of infrastructure with public financing are mostly connected to improvement of environment. The State Unitary Enterprise (SUE) “Vodokanal of St. Petersburg” has rich experience of successful cooperation with the Northern Dimension Environmental Partnership (NDEP). For instance, NDEP takes part in the implementation of the “Neva Untreated Wastewater Discharge Closure Programme”. This environmental project is of high importance to city. It covers completion of extension of the Main Sewage Collector in the northern part of the city and reconstruction of Northern Wastewater Treatment Plant (WWTP). In April 2009, NDEP gave a grant of 24 million Euro for this project. Another project with the NDEP participation is related to reconstruction and modernization of small WWTPs in St. Petersburg. The project is aimed on improvement of the nutrients removal process and the energy performance of treatment systems. For this project the NDEP Fund granted

3.75 million Euro for the reconstruction and modernization of small WWTPs [for more details see <http://www.vodokanal.spb.ru/en/presscentr/news/> ].

### **7.3 Critical bottlenecks and problems of financing infrastructure projects**

Numerous publications and surveys of Russian PPP (public-private partnership) market [41] agree on 3 critical bottlenecks in financing the infrastructure projects. They are:

- Poor and weakly coordinated legislation on PPP;
- Shortage of long-term funds and appropriate financial instruments for financing large-scale infrastructure projects.
- Low quality of project’s preparation for implementation in PPP format: there are only few infrastructural projects designed in a manner attractive for private investors to set up PPP.

Federal and regional PPP legislations need to be more flexible with regard to industry specifics and coordinated. Not less important to resolve a number of related administrative and economic issues in the area of tariff formation, access to land lots and taxation.

Shortage of funds available for infrastructural investment projects essentially constrains the transport and logistics infrastructure development in the country. The Federal Government makes efforts to accumulate funds from all state-owned and state-controlled financial sources for implementation of infrastructure projects through special purpose foundations and various Federal and Regional goal-oriented programs. The Ministry for Economic Development initiates establishment of a new (financed and regulated by the Federal Government) Infrastructure Fund for supporting infrastructure projects<sup>9</sup>

“The strategy of financial market development until 2020” approved by the Government assumes measures aimed at development of “infrastructure bonds” as the instrument for financing infrastructure projects and, not less important, protecting the investor’s property rights. Currently, the “quasi-infrastructure bonds” are used for

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<sup>9</sup> Commenting on this initiative the Partner and Managing Director of BCG argues that the Government has to start with defining priorities for allocation of budget support between the infrastructure projects and clear setting of criteria for private investors selection [45]. They also do believe that the number of such projects must not be large, while their size and importance have to be significant for selection of projects.

financing investments of JSC “Russian Railways”. An intention of the Government to invest resources of the National Welfare Fund<sup>10</sup> into development of transport and logistics infrastructure being implemented will increase availability of long-term finances [42]. In the interview Anton Siluanov, Minister of Finance, announced [43] that the Ministry intends to invest in 2013 up to RUR 300 billion of pension savings into infrastructure bonds issued by JSC “Russian Railways”. At the same time the Government has not yet revealed plausible measures for attracting domestic private capital to investing into development of transport and logistics infrastructure. Nowadays, the country faces significant outflow of domestic private capital, and low level of its involvement in financing of complex large-scale projects (The Central Bank of Russia estimates the outflow of capital at the end of 2012 as USD 65 billion [44]). Such situation is explained by high country risks mostly assigned to the weaknesses of economic and political institutions, corruption, and hardly predictable economic policies of the regional governments.

The owners of transport and logistics infrastructure also make attempts to attract private investments to develop infrastructural facilities. JSC “Russian Railways” has offered private transportation companies to invest into expansion of railway networks in exchange of freight rates’ reduction.

Low quality of project’s preparation for implementation in PPP format stems from lack of experience in state bodies involved, on one hand, and fewness of state institutions for the support and development of PPPs – on the other. That is, especially true, at the regional and local levels.

Besides two state-owned banks (VEB and VTB), and some largest commercial banks with an experience in project financing the following organizations can be regarded as the suppliers of expertise on PPP: (1) Center for Public-Private Partnership, a subsidiary of VEB [<http://veb.ru/about/PPP/pppfunc/>]; (2) Federal Agency “Rostransmodernization” ([www.ppp-transport.ru](http://www.ppp-transport.ru)); (3) Public-private Partnership Development Center ([www.pppcenter.ru](http://www.pppcenter.ru)). The latter serves as the main information source on PPP in Russia. Mission of the Public-Private Partnership Development Center

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<sup>10</sup> National Welfare Fund is a segregated part of the Federal budget aimed at support of the State program for development voluntary pension insurance, and providing balance of the State Pension Fund’s income and expenses. The sources for NWF growth are tax income (above fixed level) from extraction and export of gas and oil.

includes creation and development of Federal portal «PPP info» (an open electronic resource) ([www.pppi.ru](http://www.pppi.ru)), and establishment of a professional social network of experts on Russian PPPs and infrastructure – «Russian PPP Club» ([www.pppclub.ru](http://www.pppclub.ru)) that will intermediate exchange of experience and knowledge in professional community. Database «PPP info» contains analytical reports on PPP and infrastructure in Russia, regional and Federal legislation, and information about ongoing PPP projects in the country. Nowadays, the quarterly PPP Magazine and weekly PPP Journal are available at «PPP info» portal.

### **7.3 Preparation funds and institutions for development of infrastructure projects**

There are no special Preparation funds allocated in St. Petersburg budget for infrastructural projects. The sources for covering costs of elaboration of project documentation, arranging and running tender procedures, carrying out negotiations on the PPP-agreement are determined within the Budget of St. Petersburg as described in 7.1.1. At the same time there is *a special institution for elaboration of investment projects* that are of strategic importance for St. Petersburg. This is the Committee for Investment in the City Administration [40]. Its mission includes support of strategic infrastructural projects, developing various types of PPP in St. Petersburg, and assistance on PPP's preparation work provided to administrative bodies involved. There is a Department for Public Private Partnerships within the Committee for Investment, which is responsible for preparation and follow up of the city's PPP projects being a receiver of budget funds for these purposes. In case of WHSD project a separate state-owned SPC has been established to carry out preparation work that included elaboration of tendering documentation as well as organization of all tendering and evaluation procedures in the process of foundation of PPP. Elaboration of a PPP project raise numerous *transaction costs* (creation of PPP concept and relevant financial models, search for potential participants of PPP, negotiations, payment for consulting services, designing of tender documentation, carrying out a tender, evaluation of bids, payment for “due diligence”, etc.). The experts of the Committee for Investments estimate these transaction costs at the level of 0.3-0.5% of the total project costs. St. Petersburg legislation ascribes reimbursement of these types of preparation costs (if confirmed) to the winner of the tender in form of “project premium”. The reimbursement sums received are then reserved at the account of the Committee for Investment for elaboration future projects.

Involvement in elaboration of PPP of such institutions of development as VEB, VTB Capital at the preparation stage, as well as support of foreign consultants were named as crucial success factors for developing of the PPP agreement in city projects. It's worth mentioning that consultants were deeply involved in stages of preparation, negotiations and conclusion of PPP agreement with the Private Partner.





## 8 Discussion and conclusions

The transport and logistics sector is important for the *Estonian* economy. Although the transport and logistics infrastructure has developed well in recent years, there still exist several bottlenecks and barriers in the development and financing of infrastructure projects.

The problems and bottlenecks in financing infrastructure projects in Estonia are related to local authorities who do not usually apply EU funds due to the high administrative burden of applying for funds. In addition, problems and bottlenecks are caused by the limited PPP involvement in the infrastructure, transport fees and charges, allocation of collected fees, and charges referred to the transport infrastructure.

In Estonia, there is generally no special funding available for the preparation phase of infrastructure projects. The funded activities of the project do not usually include the preparation of projects, pre-project studies and surveying. The EU has created an organization called JASPERS (Joint Assistance to Support Projects in European Regions), which provides advice to the 12 Central and Eastern EU Member States and Croatia during project preparation, to help improve the quality of major projects to be submitted for grant financing under the Structural and Cohesion Funds. Estonia also belongs to the beneficiary Member States of JASPER.

In order to avoid significant environmental impacts, several laws and requirements have been established in Estonia. Financing transport and logistics infrastructure projects is a complicated procedure which requires knowledge of the legislation and experiences. Most of the infrastructure projects in Estonia have been carried out thanks to the EU subsidies, but there are some projects that are funded directly by a public fund or private investor.

In the case of *Finland*, the research indicated that private funding or other alternatives with the governmental budget are needed to finance large infrastructure projects. It has been noticed in Europe and also in Finland that at the time of low budget, new innovative solutions are immediately needed to be able to have more private savings available for infrastructure financing.

Although private financing cannot replace public funding, it increases functional efficiency for the whole project life-cycle. In addition, co-financing between public and private funding is needed to compensate for the economy. The solution could be establishing a separate financing company – e.g. a special company of the state for large

infrastructure financing, such as the state's Infra Ltd. The Infra Ltd financing could be used for all transport infrastructure alternatives; road, rail, seaport and airport. Also the means of the EU fund are necessary. The status of Finland is a small country in the EU, but to have EU funding is relatively easy, because of the strategic situation of the country. EU funding should be applied for in the future as well.

Are charges for road users a solution for funding? The model may clarify the relationships between the road authority and the road users. The funding could be transparent and make value for the money for the partners involved. Also heavy traffic charges may become topical, if they become general in Europe. The new intelligent satellite system may be a solution for collecting the information for transport authorities, and financing the use could be in the authorities' hands. The users' charges could be a solution for the main roads. The harbors and airports are already collecting a kind of a cargo fee.

The PPP model has a lot of potential in large infrastructure projects and for public entities in comparison to budget-funded projects. In the future, there may be state-owned "life-cycle" funds available. The Infra Oy presented above could be a solution for that. For example an earlier railway project in Finland, Kokkola-Ylivieska, was at first decided to implement by the PPP-model, but it had to be cancelled. The financing came finally from the state budget. The case showed that the ground was in a weak condition and there were many rail cross-points, and thus the costs would have been too high to cover everything, as the budget was very limited. The PPP model is not suitable for the reconstruction of railway projects. The solution could be in the Alliance model or a state-owned special company for infrastructure, for example Infra Ltd. The Alliance model is in a pilot stage in Finland, but the future research will show if the Lielähti-Kokemäki reconstruction by an alliance was successful. The Alliance model is cost-effective and allows innovation. The benefits are also, as in the PPP model, the possibility to produce good quality in a short time.

A lot of work is needed to get private money for infrastructure projects and at the same time develop alternatives to get external capital. One of the problems is how to make international financiers more interested in investing in Finland. All documentation should be written in English, not only in the Finnish language. Large road projects could be implemented by the PPP model in Finland. We have already good experience of how it works in road projects, and Finland is a trustful partner, so private investors, also from

abroad, should be motivated to invest in Finnish projects. Large enough projects should be implemented more often to show foreign investors and lenders that “we are able to do large infrastructure projects and have experience in them”. For example in Great Britain the PPP and PFI -practices are common, although it is not a large country.

Briefly, the research shows that the state’s public funding, together with the funding of municipalities is usable in smaller transport infrastructure projects. If using the PPP or Alliance -models, the state money can be put to other important projects, for example smaller projects. The most interesting model is the “Swedish model”, where the public and private sectors are in the same position. It has proved a good experience in Sweden – it could be the future solution also in Finland.

The main roads of Finland are mostly in a satisfactory condition, but rebuilding and maintenance are required. The railways in Finland are in a rather good condition, and during the present government’s term of office, 20 million euros have been allocated for rail projects. The main focus is to keep good rail connections to the main harbors in the Gulf of Finland and the North Sea, and also to Russia. The railway connection to Russia needs to be invested in the near future. A very positive note is that the new traffic strategy of Russia emphasizes the development of traffic connections via Europe, Russia and Asia. The future challenge is to develop a separate financing mechanism for border-crossing projects. Could it be PPP projects? There are no experiences of that kind of projects in Finland. A solution could be that both Finland and Russia would receive a grant from the EU, the same amount, and the possibility to invest private funds on both sides of the border as a co-project. At the moment the different legislation may be problematic. The volume of transportation is predicted to grow, and investing in rail projects is obvious. The mining industry seems to be growing in the future and the possibility of the Arctic route through Finland may be needed to get new financiers. In the next European program period in 2014, the Commission is designing to facilitate new co-funding, which could help the financing in cross-border projects.

*Germany* is at the very beginning of not exclusively public-financed transport infrastructure, consisting of a part of very few kilometers of railway tracks and some ports (sea and inland). In the public opinion, providing infrastructure is seen as a service of general interest and therefore as the responsibility of public bodies.<sup>11</sup> This opinion

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<sup>11</sup> Achnitz, R., Hoffmann, K., Meyer, J., Nobel, T.: *Intermodale Verkehre in logistischen Prozessketten*, Bremen 2000 p. 6-3.

determines the respective legislation in Germany, including the German constitution. By this, for the first privately financed infrastructure projects, the legislation must be changed (see chapter 4.3.1.1).

Since January 1<sup>st</sup> 2005, motorway toll has had to be paid for heavy trucks, and the toll is higher on some Federal roads. For passenger cars the use of infrastructure is free, however, except for the two privately financed tunnel projects (Warnow-Tunnel in Rostock and Herrentunnel in Lübeck). This may be the reason why these two projects have failed, as many passenger car drivers prefer detours paying for the use of the tunnels. They are used not to pay for the use of the road infrastructure.

A motorway toll for passenger cars is under discussion, as well as a city toll, but the lobby organization of private car drivers is powerful, and also the car producing industry is against such plans. So, it cannot be expected that privately financed infrastructure projects, refinanced by fees of the users, will be realized in the near future in Germany.

For the use of other kinds of infrastructure, such as railways, ports, locks, and airports, fees are to be paid, but for the customers of the transport companies these fees are included in the transport prices, and in particular the private customers of these companies do not often know that they pay these fees.

Because of the German constitution, new financial models for financing infrastructure are not imaginable in the near future.

*In Russia*, the transportation and logistics industry is of crucial importance to the growth of Russian economy taking into account the size and geography of the country. However, the industry suffers numerous problems caused by many factors such as low level of carrying capacity, underdeveloped transport and logistics infrastructure, lack of competence, etc. The evidence of poor performance of Russian transportation and logistics industry is provided by the Logistics Performance Index Global ranking of the countries [<http://lpiurvey.worldbank.org/international/global/2012>]. In 2012, Russia (together with Togo and Lebanon) shared 95-97 positions in the list of 155 countries. In partial ranking with regard to the infrastructure Russia together with Niger stayed 95-96. The shortage of transport and logistics infrastructure is complemented with low quality of the facilities in operation. According to the reports of General Prosecutor Office in 2012, condition of more than 60% of regional motorways and local roads was below Russian

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state standards, most of them need either reconstruction or repair [<http://top.rbc.ru/economics/27/02/2013/847053.shtml>].

President Vladimir Putin reacted on the problems with transport infrastructure in the Annual (2012) Presidential Address to the Federal Assembly of the Russian Federation. He claimed the necessity to double the volumes of roads' construction in the forthcoming decade. Besides that he put high priority for developing transit corridors, regional aviation and building up new sea ports [42].

Fulfilling of the Presidential tasks to improve transport infrastructure in the country assumes availability of funds for respective investments. Until now, development of transport infrastructure in Russia heavily relies on budget financing. This mode of financial provisions for development of transport infrastructure has two main weaknesses: (1) insufficiency of funds allocated in the Federal, regional and local budgets; (2) low effectiveness and efficiency of the projects financed from the budget sources. Thus, reaching the goals outlined in the Presidential Address to the Federal Assembly of the Russian Federation assumes, at least, expansion of sources providing long-term money for infrastructural projects and making progress in developing the financial institutions capable to finance large-scale projects in more effective and flexible ways.

There are several ways to increase the funds available for investments into infrastructure and ensure higher flexibility of financing models. One of them is to establish additional special purpose budget foundations similar to the Federal Investment Fund, e.g., the Ministry of Economic Development proposed to establish the Infrastructure Investment Fund. The JSC "Russian Railways" included investment component in railway tariffs to segregate part of income for investment purposes. Besides that RZD makes attempts to induce its partners, e.g., transport subsidiaries of JSC "Sibur Holding" and JSC "Novatek", to invest into expansion of network of railroads in exchange to grant a discount in railway tariff. The cargo owners proposed to amend current legislation in a way that will allow private companies to invest into railway infrastructure and then keep an ownership over a part of jointly built and commonly used infrastructure [47]. President Putin issued commission to the Government to use the means of the National Welfare Fund for investing into development of transport and logistics infrastructure to ensure substantial increase in the amount of available long-term financial resources. With regard to the President's commission the Ministry of Finance

plans to invest in 2013 up to RUR 300 billion of pension savings into quasi-infrastructure bonds issued by JSC Russian Railways to support its investment program.

Traditional budget models of financing infrastructure projects must be supplemented with new approaches to provide more effective implementation of infrastructure projects. PPP is a relatively new instrument of implementation of investment projects in Russia. Nevertheless, the Federal portal «*PPP info*» [[www.pppi.ru](http://www.pppi.ru)] presents information about more, than 300 projects that claim to be considered as PPP projects (including 37 federal, 172 regional and 100 municipal projects). Maxim Seleznev, Head of the Center for Development of PPP, assesses current potential of Russia's PPP market approximately of RUR 8 000 bln. (530 projects with average project costs of RUR 15 bln.) [57]. To make PPP a powerful instrument for implementation infrastructural investment projects the Federal and regional PPP legislation should become more flexible and better coordinated. Besides that wide range of issues related to tariff formation, access to land lots, taxation need to be resolved in a clear cut way. Presumably, most of these issues will be solved in general provided the Bill "On Private Public Partnerships" supplemented with numerous amendments to other legal acts (submitted by the Ministry for Economic Development to the Russian Government) is passed by the Federal Assembly of Russian Federation.

The way to improve quality of PPP projects is to engage outside experts in stages of preparation, negotiations and conclusion of PPP agreements. It is highly important to ensure the transfer of private sector experience into the PPP projects. In this respect the International Financial Institutions represent rich source of valuable experiences and expertise to the PPP projects.

Obviously, elaboration of PPP project raises additional costs of preparation which are in many cases constitute an essential part of total project cost. Therefore, special Preparation Funds are desirable as they help to speed up elaboration of the projects supposed to be carried out through PPP and to improve their quality. These costs partly can be reimbursed by private partners provided successful conclusion of PPP agreement takes place. The survey carried out by the Ernest & Young [41] pointed out that respondents were in favor of an idea to have a unified center at the federal level which would provide methodological support to the regions. Such center could assist regional authorities in development of standard projects, disseminate best PPP practices and engage civil servants with positive experience in implementation of PPP projects in other regions or industries. The capacities of existing development institutions (such as VEB

and VTB) and their subsidiaries do not match requests for that kind of services in the regions. Therefore, the Ministry of Transport, Federal agencies and State Corporations that are responsible for implementation of the State Programs for transport infrastructure development have recently created special departments for elaboration and follow up of the PPP projects. The experience of St. Petersburg administration demonstrates positive outcomes of work done by special executive body for preparation of PPP projects on the regional level.





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Questions for interviews in case Finland

**1. Presentation** (interviewee)

- Can you tell about yourself, please.
- What are your main tasks in your organization?
- What is your relation to infrastructure projects?

**2. Presentation** (organization)

- Could you describe your organization briefly, please.
- Describe your organization's role in infrastructure projects.

**3. Infrastructure projects**

- Could you describe one transport infrastructure project briefly and tell your experiences about it.
  - What are the successes and failures of the described project?
  - What kind of incentives (bonuses) were used in the project?
- What kind of financing models have been used in infrastructure projects?
  - Could you name some examples?
- What is the importance of keeping the agreed schedule – how does this affect the funding arrangements?
- If the budget is overdrawn, what are the side-effects?
- What are the criteria for estimating the success of the project?

**4. Public Private Partnership (PPP)**

- Please name some projects implemented or planned where the PPP model is/would be utilized.
- Can you tell about organizing PPP projects? The contents of PPP projects?
  - How are the charges, commitments, guarantees and collaterals shared?
- In your opinion, what are the most considerable benefits and challenges in PPP projects?
  - What is the added value produced by the PPP projects?
- What is the importance of partnerships between the orderer and the service provider?
- What has been learned about PPP projects (in Finland)?
  - In which kind transport and logistics infrastructure projects could PPP models be used/applied in the future?

**5. Financing**

- How does the (Finnish) legislation and regulation of the European Union affect the arranging of project financing?
- Has your organization had any role in project financing? If yes, what kind of a role?
- What kind of financing models have been used in transport and logistics infrastructure projects?
- How are the financial models analyzed?
- Are the infrastructure projects divided into smaller parts to make the financing possible?
- By which means could foreign project financiers get committed to investing in (Finnish) markets?
- Please tell about your experiences with financiers.
- In which kind of infrastructure projects is liability used?
- What important points should be recognized when organizing liability?
- What kind of funding do you use in road, rail, sea, and air transportation? What is the best practice, in your opinion?
- In general, what is the funding process like?
- What kind of financing models are available?

**6. Risks of financing**

- What kinds of risks are related to the financing of large transport infrastructure projects?
- What kind of effects can the risks related to financing have?
- How can you be protected from the above-mentioned risks?
- Is it possible to share the financial risks? If yes, how?

**7. The future of transport and logistics infrastructure**

- What would be the ways of financing large infrastructure projects in the future (in Finland)?
- How do you see the future of PPP projects in Finland?
- What could be the future financial mechanisms in transport infrastructure projects in Finland?
- Cross border point of view


**Interviewees in alphabetical order in case Finland**

## Appendix II


Name	Company or organization
Aspara, Juhani	Skanska
Fridriksson, Stefan	Nordic Investment Bank
Helkala, Mikko	European Investment Bank
Ilves Päivi	Regional Council of South Karelian (ENPI)
Kajatkari, Riitta	Port of HaminaKotka Ltd
Kangasjärvelä, Rauno	VR Group (Finnish Railways)
Korhonen, Arja	Port of HaminaKotka Ltd
Kouvo, Kai	Engineering office Kai Kouvo
Laamanen, Juha	Centre for Economic Development, Transport and the Environment
Lehtikankare, Hannu	Finnish Transport Agency
Lehtinen, Pekka	Castren & Snellmann
Leviäkangas, Pekka	VTT Technical Research Centre
Petäjaniemi, Pekka	Finnish Transport Agency
Rautoja, Pekka	Finnish Transport Agency
Riihinen, Ville-Petteri	Inspira Ltd
Torniainen, Jukka	Finnish Transport Agency
Torsti, Esko	Ilmarinen
Vehviläinen, Matti	Centre for Economic Development, Transport and the Environment



## Reconstruction of E20 Tallinn-Narva highway Vão-Maardu section in Estonia

	Technical Characteristics
 <p>Map source: Regio 2012</p>	<p>Length of road section 6,8 km  Daily vehicle density 17 500 – 32 000 units  Speed 90 km/h</p> <p>Project cost: 55 922 692.47 €</p> <p>Financial sources:</p> <ul style="list-style-type: none"> <li>• National source 11 184 538.49 €</li> <li>• Cohesion Fund 44 738 153.98 €</li> </ul> <p>Funds of European Union  Percentage of EU support: 80%</p> <p>Duration of agreement: 5 years  Implementation schedule (plan): 2009 - 2014</p> <p>Project plan:  1<sup>st</sup> stage: Reconstruction of Loo-Maardu, 10,6-17,4 km section  2<sup>nd</sup> stage: Construction of the Vão junction</p> <p>Today's status:</p> <ul style="list-style-type: none"> <li>• Loo-Maardu section is in process.</li> <li>• Vão junction is in process.</li> <li>• Expected time for completion of work-2014.</li> </ul>
<p>Project purpose:</p> <ul style="list-style-type: none"> <li>• Reconstruct 6.8 km section of Loo-Maardu road.</li> <li>• Construct the Vão junction.</li> <li>• Improving the road safety and traffic management.</li> </ul>	<p>Implementing bodies:</p> <ul style="list-style-type: none"> <li>• Estonian Road Administration</li> <li>• The construction agreement was signed with: <ul style="list-style-type: none"> <li>○ AS Merko Ehitus</li> <li>○ Tallinna Teede AS</li> <li>○ SIA Merks (Latvia)</li> </ul> </li> <li>• Construction supervision by <ul style="list-style-type: none"> <li>○ Ramboll Eesti AS</li> <li>○ Teede Tehnokeskuse AS</li> </ul> </li> </ul>
<p>Project description:</p> <p>E20 is one of the main roads in Estonia and it a part of the TEN-T network. The reconstruction and maintenance of this road is especially important for the east-west transport flows. In addition, Estonia's largest ports are located in the side of this road and reconstruction of E20 would increase the ports capacity and helps to enhance the overall competitiveness of the ports.</p> <p>During the project, 6.8 km section of Loo-Maardu road will be reconstructed; grade separations are built in Maardu and Loo and Jõelähtme's grade separation will be partly rebuilt. In the second stage of the project Vão junction and necessary light traffic roads will be built.</p> <p>The total cost of the project is about 55.9 million euros, of which CF support is approximately 44.7 million. The national source financed the project to 20%.</p> <p>Website: <a href="http://www.mnt.ee">http://www.mnt.ee</a></p>	<p>Financial model:</p> <ul style="list-style-type: none"> <li>• Co-financing by European Union and national source.</li> </ul>


The extension to the Eastern part of Muuga Harbour I stage in Estonia

 <p>Map source: Regio 2012</p>	<p><b>Technical Characteristics</b></p> <p>Area of the extension part 70 hectares</p> <p>Project cost: 116 067 000 €</p> <p>Financial sources:</p> <ul style="list-style-type: none"> <li>National source 92 976 699 €</li> <li>Funds of European Union             <ul style="list-style-type: none"> <li>Cohesion Fund 23 090 301 €</li> </ul> </li> </ul> <p>Percentage of EU support: 20%</p> <p>Duration of agreement: 4 years Implementation schedule(plan): 2006-2010</p> <p>Project plan:</p> <ul style="list-style-type: none"> <li>Develop 70 hectares of land (23 hectares occupied by the sea).</li> <li>Establish new pier no. 17.</li> <li>Extend existing berth no. 16.</li> <li>Establish necessary general infrastructure for eastern part.</li> </ul> <p>Today's status:</p> <ul style="list-style-type: none"> <li>The project has been completed.</li> </ul>
<p><b>Project purpose:</b></p> <ul style="list-style-type: none"> <li>Improve the transport infrastructure in Estonia.</li> <li>Give the opportunity to create an infrastructure that is capable of handling in addition 585,000 TEUs annually.</li> <li>Provide an opportunity to extend the railway station to improve the possibilities of rail and sea transport interaction.</li> </ul>	<p><b>Implementing bodies:</b></p> <ul style="list-style-type: none"> <li>Port of Tallinn AS</li> </ul> <p><b>Financial model:</b></p> <ul style="list-style-type: none"> <li>Port of Tallinn is 100% state-owned company, national source.</li> <li>Co-financed by European Union and national source.</li> </ul>
<p><b>Project description:</b></p> <p>Muuga Harbour is the biggest cargo harbour in Estonia and specialized on handling transit origin goods. It is the main cargo harbour for Port of Tallinn and locates ca 17 km east of Tallinn.</p> <p>The overall objective of the project was to improve the transport infrastructure in Estonia and to give the opportunity to create an infrastructure that is capable of handling in addition 585,000 TEUs annually. As a result, the port capacity of handling containers should increase to 730,000 units. The project provides an opportunity to extend the railway station to improve the possibilities of rail and sea transport interaction.</p> <p>During the project, 70 hectares of land was developed, of which 23 hectares were occupied by the sea. The existing berth no. 16 was extended by 100 meters and new pier no. 17 with the length of 378 meters and a depth of 14.5 m was established. Also the necessary general infrastructure for the eastern part was established- roads and basic communications network. During the project the connection between the Muuga Harbour and the TEN-T network, Tallinn-Narva highway, was also improved.</p> <p>Website: <a href="http://www.portoftallinn.com">http://www.portoftallinn.com</a></p>	


Reconstruction of the Rail Baltica railway route (Tartu-Valga) in Estonia

<p>Map source: Regio 2012</p>	<p><b>Technical Characteristics</b></p> <p>Length of railway 90 km Speed 120 km/h</p> <p>Project cost: 39 814 000 €</p> <p>Financial sources:</p> <ul style="list-style-type: none"> <li>National source 27 764 000 €</li> <li>Municipal budget 1 300 000 €</li> </ul> <p>Funds of European Union</p> <ul style="list-style-type: none"> <li>TEN-T program 10 750 000 €</li> </ul> <p>Percentage of EU support: 27%</p> <p>Duration of agreement: 3 years Implementation schedule (plan): 2008-2011</p> <p>Project plan:</p> <ul style="list-style-type: none"> <li>Reconstruction of rail road in Tartu-Valga railway sector.</li> <li>Reconstruction of rail road in Valga railway station.</li> <li>Reconstruction of facilities in Valga railway station.</li> </ul>
<p><b>Project purpose:</b></p> <ul style="list-style-type: none"> <li>Achieve the maximum speed of 120 km/h in reconstructed sections.</li> <li>Achieve growth in the number of passengers on railways compared with road.</li> <li>Ensure through the maximum speed better throughput.</li> </ul>	<p><b>Today's status:</b></p> <ul style="list-style-type: none"> <li>The project has been completed.</li> </ul> <p><b>Implementing bodies:</b></p> <ul style="list-style-type: none"> <li>AS EVR Infra</li> </ul>
<p><b>Project description:</b></p> <p>The project is part of the Trans-European Transport Network (TEN-T) project Rail Baltica, which belongs to transport corridor no. 1, that other parts are the Via Baltica (roads) and its Kaliningrad directional branch A (Via Hanseatica). The reconstruction includes the relevant infrastructure, e.g. switches, track crossings, passenger platforms, cables.</p> <p>The aim of this project is to achieve the maximum speed of 120 km/h in reconstructed sections and thereby achieve growth in the number of passengers on railways compared with road and to ensure through the maximum speed better throughput.</p> <p>The total cost of the project was about 39.8 million euros, of which TEN-T program support was approximately 10.7 million. AS EVR Infra, which is 100% state-owned company, financed the project to 69,8% and the Valga City Government financed the project to 3,2%.</p> <p>Website: <a href="http://www.evr.ee">http://www.evr.ee</a></p>	<p><b>Financial model:</b></p> <ul style="list-style-type: none"> <li>AS EVR Infra is 100% state-owned company, public funding.</li> <li>Valga City Government, municipal budget.</li> <li>Co-financed by European Union, national source and municipal source.</li> </ul>

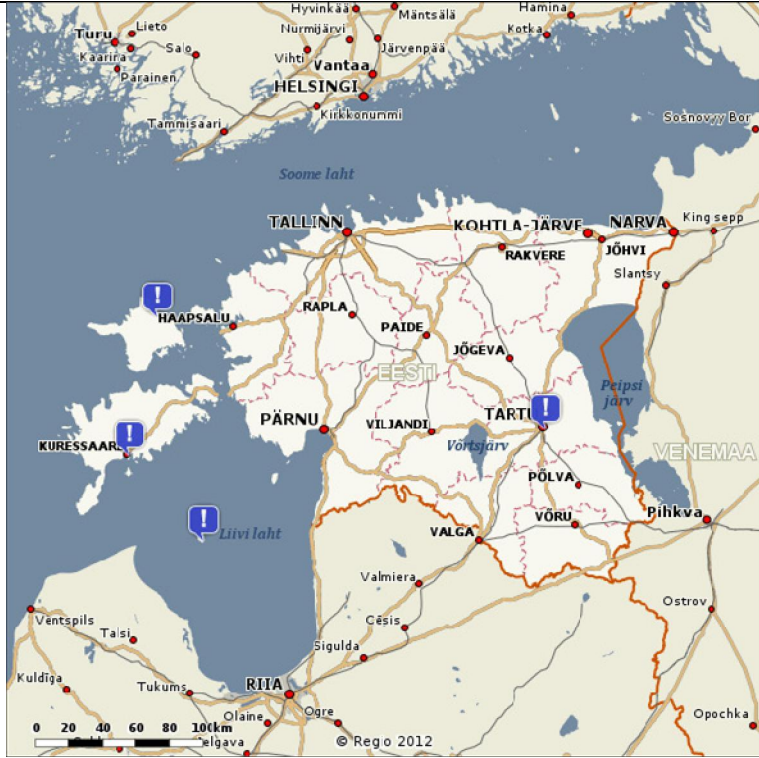
Construction of container terminal in Port of Sillamäe in Estonia

	Technical Characteristics
 <p>Map source: Regio 2012</p>	<p>Project cost: 30 000 000 €</p> <p>Financial sources:</p> <ul style="list-style-type: none"> <li>National source -</li> <li>Private sources 30 000 000€</li> </ul> <p>Funds of European Union -</p> <p>Percentage of EU support: 0%</p> <p>Duration of agreement: 2 years</p> <p>Implementation schedule(plan): 2011-2013</p> <p>Project plan:</p> <ul style="list-style-type: none"> <li>Build four quays in container terminal</li> <li>Build railway station and the terminal and railway connection.</li> </ul> <p>Today's status:</p> <ul style="list-style-type: none"> <li>The project is in process.</li> <li>Expected time for completion of work- 2013.</li> </ul>
<p>Project purpose:</p> <ul style="list-style-type: none"> <li>Create an infrastructure for container terminal.</li> <li>Build railway station and the terminal and railway connection.</li> </ul>	<p>Implementing bodies:</p> <ul style="list-style-type: none"> <li>Port of Sillamäe</li> </ul> <p>Financial model:</p> <ul style="list-style-type: none"> <li>Port of Sillamäe is a private company, 100% private investment.</li> </ul>
<p>Project description:</p> <p>Port of Sillamäe is the most eastern deep-sea port of the EU, being located in the eastern part of the Baltic Sea, in Sillamäe, Estonia, 25 km from the EU-Russian border.</p> <p>Port of Sillamäe is building container terminal, which will be completed in the 2013. Four quays will be built in the container terminal; the length of the quay line will become nearly a kilometer, water depth at new quays reaches 14.5 meters. In addition, the railway station and the terminal and railway connection will be built.</p> <p>The total cost of the project is about 30 million euros, which is all financed by the port of Sillamäe.</p> <p>Website: <a href="http://www.silport.ee/">http://www.silport.ee/</a></p>	

Construction of Sillamäe Truck Parking and Rest Area in Estonia

 <p>Map source: Regio 2012</p>	<p><b>Technical Characteristics</b></p> <p>Parking area 9,7 hectares</p> <p>Project cost: 2 470 000 €</p> <p>Financial sources:</p> <ul style="list-style-type: none"> <li>National source -</li> <li>Private sources 1 320 000€</li> </ul> <p>European Union European Commission 1 150 000€ Percentage of EU support: 46,6%</p> <p>Duration of agreement: 1 year Implementation schedule(plan): 2010-2011</p> <p>Project plan:</p> <ul style="list-style-type: none"> <li>Construct parking lot with area 9.7 hectare.</li> <li>Construct service buildings, fencing, and lighting system.</li> </ul> <p>Today's status:</p> <ul style="list-style-type: none"> <li>The project has been completed.</li> </ul>
<p><b>Project purpose:</b></p> <ul style="list-style-type: none"> <li>Create a parking lot for the trucks, which are standing in the border queue on the Tallinn-Narva highway</li> </ul>	<p><b>Implementing bodies:</b></p> <ul style="list-style-type: none"> <li>Estonian Ministry of Economic Affairs and Communications</li> <li>Port of Sillamäe</li> </ul>
<p><b>Project description:</b></p> <p>Sillamäe border parking lot was constructed next to the Tallinn-Narva highway, area of 9.7 hectare, with service buildings, fencing, lighting system, and order system up to 450 trucks. The aim of the project was to create a parking space to the trucks, which are standing in the border queue on the Tallinn-Narva highway. Standing on the edge of the road, the vehicles created dangerous situations for both trucks and other road users. Standing in the border queue, do not allow drivers to follow the rules of work and rest and they also did not have proper sanitary conditions. The current project was a pilot project, and the following plan was to solve the parking problems in other border crossings in Estonia.</p> <p>Port of Sillamäe was responsible for the first and second phase of the procurement and the preparation and organization of work; the overall project was supervised by the Estonian Ministry of Economic Affairs and Communications.</p> <p>The total cost of the project was about 2.47 million euros, of which EU support was approximately 46.6%. Port of Sillamäe financed the project to 53.4%.</p> <p>Website: <a href="http://www.silport.ee/">http://www.silport.ee/</a></p>	<p><b>Financial model:</b></p> <ul style="list-style-type: none"> <li>Port of Sillamäe is a private company, private investment.</li> <li>Co-financed by European Union and private source.</li> </ul>


The joint project of developing the airports of Kärdla, Kuressaare, Ruhnu and Tartu in Estonia

 <p>Map source: Regio 2012</p>	<p><b>Technical Characteristics</b></p> <p>Project cost: 15 466 618.95 €</p> <p>Financial sources:</p> <ul style="list-style-type: none"> <li>National source -</li> <li>Private source -</li> </ul> <p>Funds of European Union</p> <ul style="list-style-type: none"> <li>European Regional Development Fund 15 466 618.95 €</li> </ul> <p>Percentage of EU support: 100%</p> <p>Duration of agreement: 5 years</p> <p>Implementation schedule(plan): 2008- 2013</p> <p>Project plan:</p> <ul style="list-style-type: none"> <li>Reconstruct all these airports.</li> </ul> <p>Today's status:</p> <ul style="list-style-type: none"> <li>The project is in process.</li> <li>Expected time for completion of work- 2013.</li> </ul> <p>Implementing bodies:</p> <ul style="list-style-type: none"> <li>Tallinn Airport Ltd</li> </ul> <p>Financial model:</p> <ul style="list-style-type: none"> <li>Financed 100% by European Union.</li> </ul>
<p><b>Project purpose:</b></p> <ul style="list-style-type: none"> <li>Reconstruct all these airports, according to environmental requirements.</li> <li>Create preliminary conditions for increased air-traffic.</li> </ul>	
<p><b>Project description:</b></p> <p>During the joint project of developing the airports of Kärdla, Kuressaare, Ruhnu and Tartu, all these airports will be reconstructed, according to environmental requirements, and preliminary conditions for increased air-traffic will be created. The work of the project started in 2008 and it will be finished in 2013.</p> <p>The Tallinn Airport Ltd is 100% state-owned company, which operates and develops airports belonging to the company in order to ensure the provision of service of aircrafts, passengers and goods on the ground. The company manages airports that are located in Estonia, which besides Tallinn Airport include the airports of Tartu, Pärnu, Kuressaare, Kärdla, Kihnu and Ruhnu.</p> <p>The total cost of the project was about 15.466 million euros, of which EU support was 100% and this was financed by the European Regional Development Fund.</p> <p>Website: <a href="http://www.tallinn-airport.ee">http://www.tallinn-airport.ee</a></p>	

Reconstruction of air traffic area of Tallinn Airport in Estonia

<p>Map source: Regio 2012</p>	<p>Technical Characteristics</p> <p>Project cost: 35 026 105 €</p> <p>Financial sources:</p> <ul style="list-style-type: none"> <li>National source 6 130 585 €</li> </ul> <p>Funds of European Union</p> <ul style="list-style-type: none"> <li>Cohesion Fund 28 895 520 €</li> </ul> <p>Percentage of EU support: 82%</p> <p>Duration of agreement: 2 years</p> <p>Implementation schedule(plan): 2006-2008</p> <p>Project plan:</p> <ul style="list-style-type: none"> <li>Increase environmental protection measures.</li> <li>Improve air safety and security.</li> </ul> <p>Today's status:</p> <ul style="list-style-type: none"> <li>The project has been completed.</li> </ul> <p>Implementing bodies:</p> <ul style="list-style-type: none"> <li>Tallinn Airport Ltd</li> <li>Construction works performed by a consortium, including:             <ul style="list-style-type: none"> <li>AS Talter</li> <li>Lemminkäinen Oyj,</li> <li>AS Eesti Ehitus,</li> <li>AS Aspi</li> <li>AS Teede REV-2.</li> </ul> </li> <li>Engineering services provided by a consortium, including:             <ul style="list-style-type: none"> <li>Ramboll Finland Oy,</li> <li>AS Teede Tehnokeskus</li> <li>AS Telora-E.</li> </ul> </li> </ul>
<p>Project purpose:</p> <ul style="list-style-type: none"> <li>Improving the status of the environment and implementing environmental protection measures in Tallinn airport and in its close surroundings.</li> <li>Increasing the safety of the air traffic area in compliance with the standards and requirements of international civil aviation</li> </ul>	
<p>Project description:</p> <p>The most significant objectives of the project are improving the status of the environment and implementing environmental protection measures in Tallinn airport and in its close surroundings. Also increasing the safety of the air traffic area in compliance with the standards and requirements of international civil aviation, which have been established by ICAO and ECAC.</p> <p>In order to increase environmental protection measures the following works shall be performed in Tallinn airport: establishing the system of storm water collection, separation, pretreatment and discharge; establishing a system of monitoring the quality of storm water, automatic testing of water samples, etc.</p> <p>In order to improve air safety and security the following works shall be performed in Tallinn airport: renovating the parts of the platform that have not been renovated up to the present and expanding the platform; creating parking places for aircrafts to the entire territory of the platform, etc.</p> <p>Website: <a href="http://www.tallinn-airport.ee">http://www.tallinn-airport.ee</a></p>	<p>Financial model:</p> <ul style="list-style-type: none"> <li>Tallinn Airport Ltd 100% is state-owned company, public funding.</li> <li>Co-financed by European Union, and national source.</li> </ul>

## Development of Tallinn Airport passenger terminal in Estonia

	Technical Characteristics
 <p>Map source: Regio 2012</p>	<p>Project cost: 32 700 000 €</p> <p>Financial sources:</p> <ul style="list-style-type: none"> <li>• National source 8 502 000 €</li> </ul> <p>Funds of European Union</p> <ul style="list-style-type: none"> <li>• Cohesion Fund 24 198 000 €</li> </ul> <p>Percentage of EU support: 74%</p> <p>Duration of agreement: 2 years</p> <p>Implementation schedule(plan): 2006-2008</p> <p>Project plan:</p> <ul style="list-style-type: none"> <li>• Expand the passenger terminal</li> </ul> <p>Today's status:</p> <ul style="list-style-type: none"> <li>• The project has been completed.</li> </ul> <p>Implementing bodies:</p> <ul style="list-style-type: none"> <li>• Tallinn Airport Ltd</li> <li>• Construction works were performed by EMV AS</li> <li>• Engineering services were provided by a consortium AS Telora-E and Ramboll Finland OY</li> </ul> <p>Financial model:</p> <ul style="list-style-type: none"> <li>• Tallinn Airport Ltd 100% is state-owned company, public funding.</li> <li>• Co-financed by European Union, and national source.</li> </ul>
<p>Project purpose:</p> <ul style="list-style-type: none"> <li>• Establish the infrastructure to comply with the requirements set to the countries acceding to the Schengen agreement.</li> <li>• Meet the needs of servicing the increasing number of passenger of the airport</li> </ul>	
<p>Project description:</p> <p>During the project the infrastructure was established, which enables Tallinn airport to comply with the requirements set to the countries acceding to the Schengen agreement and meets the needs of servicing the increasing number of passenger of the airport.</p> <p>During the construction works the terminal building was extended and modernised northbound and southbound. Due to the gallery that connects all the gates and was constructed in the middle of the terminal building the terminal became T-shaped. The projecting terminal section enables a two-level traffic for international passengers. The renewed terminal has nine passenger bridges. The extensions constructed at the ends of the terminal building became additional rooms for registering for the flights and for delivering arriving luggage.</p> <p>The total cost of the project was about 32.7 million euros, of which EU support was approximately 74%. Tallinn Airport Ltd financed the project to 26%.</p> <p>Website: <a href="http://www.tallinn-airport.ee">http://www.tallinn-airport.ee</a></p>	



## E 4 Helsinki (Järvenpää)-Lahti motorway, Finland

1st PPP -project

## Technical Characteristics



Total length of main road	70,0 km
Noise barriers build	8,5 km
Length of animal fences	130,0 km
Number of bridges	88 pcs
Amount of recycled material	50 000 m <sup>3</sup>
Soil and rock excavated	3 500 000 m <sup>3</sup>
Length of animal fences	130 km
Opened for traffic beforehand	11,5 months

Project costs: 235 million €

Financial sources:

- Shareholder's equity
- Lenders
- Private investors
- Pension fund

Funds of Private Partner:

- Liability from Northern Investment Bank (NIB) and Sampo Pankki
- Mezzanine –fund from Teva, Eläke-Varma, Espoon Sähkö
- Shareholder's liability from Teva, Eläke-Varma, Espoon Sähkö, Laing Investment Ltd
- Share of ownership: John Laing Investment Ltd (41 %), Skanska BOT AB (23 %), Skanska Oy (18 %), PCS Corporate Finance Oy (18 %)

Concession period: 1997-2012

Duration of agreement: 15 years

- Signing of concession agreement 19.3.1997
- End of contract 30.8.2012

Implementation schedule:

19.3.1997 Agreement signed by Road Administration and Tieyhtiö Nelostie Oy through private funding  
 1.5.1997 The project was released to Tieyhtiö Nelostie Oy and construction was started  
 12.11.1998 The first stage from Järvenpää to Mäntsälä was opened for traffic  
 10 months before agreed  
 17.9.1999 The second stage from Mäntsälä to Lahti was opened 11 months before agreed  
 2002 The first post-assessment report done

Implementing body:

The Finnish Road Administration (at present The Finnish Transport Agency)

Today's status:

- The first DBFO project in Finland
- Agreement period finished 30.8.2012 and the highway were released to the Finnish Transport Agency.

Project purpose:

- Remove traffic jam
- Decrease accidents
- Public transport precise
- Increase economic effects

Project description:

The first road project in Finland, which has been implemented by Public-Private-Partnership (PPP) application. The DBFO (design, build, finance and operate) contract for 15 years. The road was completed almost a year beforehand and the budget was underbidded. The benefits of the highway have been larger than expected. Today approximately 25 000 – 40 000 vehicles is using the highway, the amount at 1988 was only 14 000. The assets of society will be saved with highway approximately 20-20 million € per year; accidents are decreased exceedingly and faster moving.

Project organization:

- Orderer Road Administration (nowadays Finnish Transport Agency)
- The project consortium/ service provider SPV<sup>\*</sup> Tieyhtiö Nelostie Oy were established 1997
- Shareholders; Laing Investment (41 %), Skanska BOT Ab (23 %), Skanska Oy (18 %) and PCA Corporate Finance Oy (18 %)
- Builder: Skanska Infra Oy
- Financing of shareholders' equity: Skanska Oy, Skanska BOT Ab, John Laing Investments Ltd, Hyber Investment, Teollisuusvakuutus (Teva), Eläke-Varma and E.ON Finland Oyj
- Lenders: Postipankki bank (current bank Sampo Pankki Oyj) and Nordic Investment Bank (NIB)

Additional information:

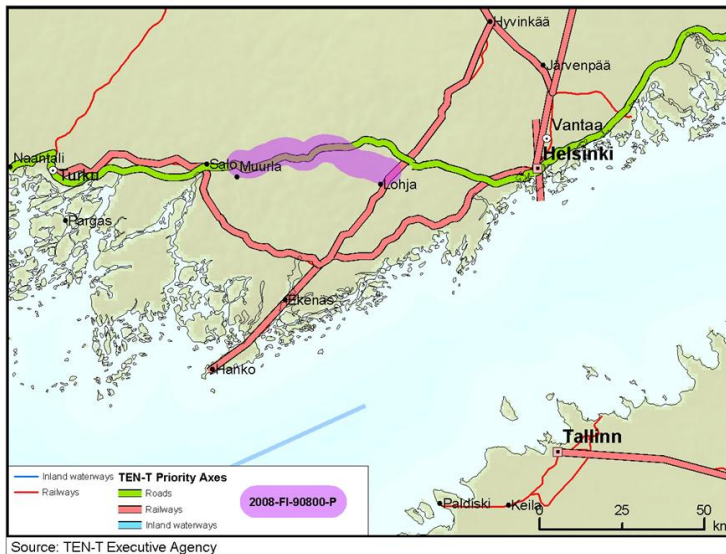
[www.liikennevirasto.fi](http://www.liikennevirasto.fi)

<sup>\*</sup>Special Purpose Vehicle

E18 Muurla-Lohja, motorway, Finland

2nd PPP -project

Technical Characteristics



Total length of main road	51,3 km
Ramps	16,0 km
Noise barriers build	28,1 km
Interchanges	8 pcs
Bridges	76 pcs
Tunnels (7 pcs)	5,1 km

Project cost: 300 million €

- Subsidies
- National budget 70 110 000 €
  - European Union contribution TEN-T (EU support 10 %) 7 790 000 €

- Financial sources:
- Shareholder's equity
  - Lenders
  - Private investors

- Project purpose:
- Secure the service level enough in one of the most international connect in Finland
  - Reduce accident statistics
  - Reduce effect of environmental hazards
  - Secure continuous service level in the most important international connection in Finland

Concession period: 2005-2029

Duration of agreement: 24 years

- Implementation schedule:
- Construction started 2005
  - 11<sup>th</sup> November 2008 (Part 1 completed Muurla-Lahnajärvi)
  - 19<sup>th</sup> January 2009 (Part 2 completed Lahnajärvi-Lohja)

Project description:

The road is a part of E18 road/ TEN-T. Belongs to Nordic Triangle, part of European Priority Project 12. The project has been implemented by Public-Private-Partnership (PPP) application. The DBFO (design, build, finance and operate) contract for 25 years. The first part of the highway has been built in 1960's. There is three new highways built after that and the last one from Muurla to Lohja has been started at the October of 2005.

Implementing body:  
The Finnish Road Administration (at present The Finnish Transport Agency)

- Project organization:
- Orderer Road Administration (nowadays Finnish Transport Agency)
  - Project consortium/service provider SPV(\* Tieyhtiö Ykköstie Oy (Skanska Finland Invest AB, JLIF Limited Partnership Great-Britain and Lemminkäinen Oyj Finland.
  - Shareholders: Skanska Infrastructure Development AB, John Laing Infrastructure Ltd, Lemminkäinen Oyj
  - Builder consortium,,: Skanska Infra Oy, Lemcon Oy
  - Lenders: European Investment Bank (EIB), Nordic Investment Bank (NIB), Nordea bank, Handelsbanken bank, Royal Bank of Scotland (RBS)

- Today's status:
- Project completed
  - Concession period till year 2029

Additional information from:  
 Finnish Transport Agency  
[www.liikennevirasto.fi](http://www.liikennevirasto.fi)  
<http://e18.pp-viestinta.fi/english/index.html>  
 European Commission  
[http://ec.europa.eu/dgs/transport/index\\_en.htm](http://ec.europa.eu/dgs/transport/index_en.htm)  
 Trans-European Transport Network Executive Agency (TEN-T EA)  
<http://tentea.ec.europa.eu/>

(\*SPV, Special Purpose Vehicle

E18 Koskenkylä-Kotka, motorway, Finland

3rd PPP -project

Technical Characteristics



Total length of main road	56,0 km
Multi-level junction with ramps	10 pcs
New bridges	78 pcs
Tunnel s	500 m
Noise barriers build	36,0 km

Project cost: 623 million €

Subsidies:

- European Union/ TEN-T

Financial sources:

- Shareholder's equity
  - Meridiam 40,9 million €
- International Financial Institutions
  - EIB 134 million €
  - NIB 91 million €
- Lenders/ commercial dept.
  - Pohjola Bank 15 million €
- Private investors
- Pension fund

Concession period: 2011-2026

Duration of agreement 15 years

Implementation schedule : 2013 – 2014

Today's status:

- Under construction
- Project has been divided in six parts, opening traffic 2013/2014

Implementing bodies:  
Finnish Transport Agency

Project purpose:

- Remove traffic jams
- To safe traffic fluency

Project description:

The road is a part of E18 road/ TEN-T. Belongs to Nordic Triangle, part of European Priority Project 12. The project has been implemented by Public-Private-Partnership application. The DBFO (design, build, finance and operate) contract for 15 years.

Project organization:

- Orderer Finnish Transport Agency
- Project consortium/ service provider: SPV<sup>\*)</sup> Tiejhtiö Valtatie 7 Ltd
- Shareholders: YIT Rakennus Ltd (10,05 %), Destia Ltd (10,05 %), Meridiam Infrastructure Projects S.á.r.l. (60 %), Ilmarinen Pension insurance Company (19.9 %)
- Lenders: Pohjola Bank, European Investment Bank (EIB), Nordic Investment Bank (NIB)
- Builder consortium: SPV<sup>\*)</sup> project consortium Pulteri (YIT rakennus Ltd, Destia Ltd), subcontractors Ramboll Finland Ltd, Sito Ltd, Strapak

Additional information from:

*Finnish Transport Agency*

[http://portal.liikennevirasto.fi/sivu/www/e/projects/under\\_construction/koskenkyla\\_kotka](http://portal.liikennevirasto.fi/sivu/www/e/projects/under_construction/koskenkyla_kotka)

*European commission*

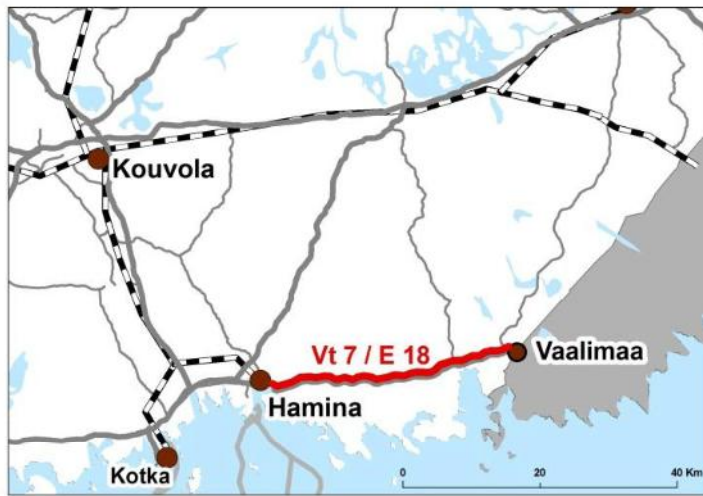
<http://ec.europa.eu/tentea>

<sup>\*)</sup> SPV, Special Purpose Vehicle

E18 Hamina-Vaalimaa, motorway, Finland

Possible 4th PPP-project/ future

Technical Characteristics



Total length of main road	32 km
Multi-level junction with ramps	5 pcs
Large roundabout	1 pcs
Animal fences	
Noise barriers	
Ground water protection	

Expected:	
Project cost	560 million €
Investment costs	240 million €
Construction costs	177 million €

- Subsidies:
- European Union/ TEN-T (for planning)
  - Finnish government 240 million € (occupied for building costs 3/2012)

- Project purpose:
- Remove traffic jams
  - Remove queues of heavy traffics
  - Improve the road quality
  - Improve safety of the road

Financial sources:	open
Concession period:	open
Duration of agreement :	open

Project description:

The road is a part of E18 road/ TEN-T. Belongs to Nordic Triangle, part of European Priority Project 12. The road plan is implemented during 2010-2013. The possibility of using Public-Private-Partnership (PPP) application will be decided on 2014. Building of the road will be started earliest on 2016. The highway should be ready for traffic 2018. The main problem is the low quality of the road and truck queues, which may be worst 50-60 kilometers long.

- Implementation schedule:
- Road scheme 2010-2013
  - Further scheme 2014
  - Building will be started not later than 2016
  - Ready for traffic 2018

- Project organization:
- SPV (\* will be established later

- Today's status:
- Future project
  - The assessment of environmental impacts done (8/2009)

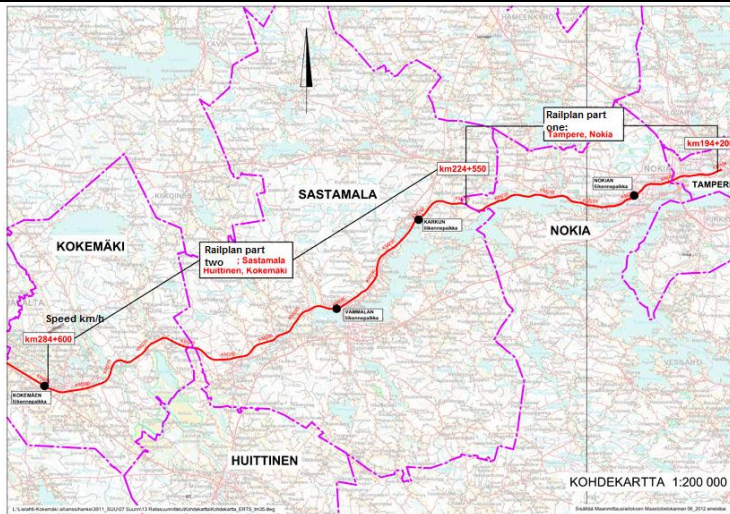
Additional information from:  
[www.liikennevirasto.fi](http://www.liikennevirasto.fi)

(\*Special Purpose Vehicle

Lielähti – Kokemäki rail, Finland [www.liikennevirasto.fi](http://www.liikennevirasto.fi)

1st Alliance-project in Europe

Technical Characteristics



Rail/ km	90 km
Trains	40 pcs/day
Track	single
Grade crossings	31 pcs
Bridges	74 pcs
Drums	101 pcs

Project cost: 95 million €

Financial sources:  
 • State's budget

Construction period:  
 • Designing and renovation during years 2012-2015

Duration agreement:  
 • The project is ready by the end of 2015  
 • The alliance will be closed after guarantee time of 5 years.

Implementation schedule:  
 • Construction during 1960-1980, totally ready 1987  
 • Phase of development of the project on spring 2010  
 • Alliance established April-July 2011 and it started to act on the 11<sup>th</sup> August, 2011  
 • Execution phase 1<sup>st</sup> June, 2012

Project purpose:

- The aim of improvement procedure is to strengthen the railroad so, that the traffic on the track is possible with axle weight 25 tons minimum by the speed of 60 km/h.
- The traffic safety will be improved by removing railroad grade crossings and remove bottlenecks.
- To renovate the railroad and minimize the future maintenance costs.
- The aim of alliance project is to improve the quality of designing and construction – the target it better result.

Project description:

Lielähti-Kokemäki is the part of the railway via Tampere-Pori. It was opened already at 1895 for traffic. The railway is important route to the sea for the industry. The max allowed gross axle weight is 225kN, which has been raised to 250kN during years 2009-2012. The project consists of two main parts; the renovation and improvement of the railway. The project has been divided in three parts: 1) Nokia-Tampere, 2) Sastamala, and 3) Huittinen-Kokemäki.

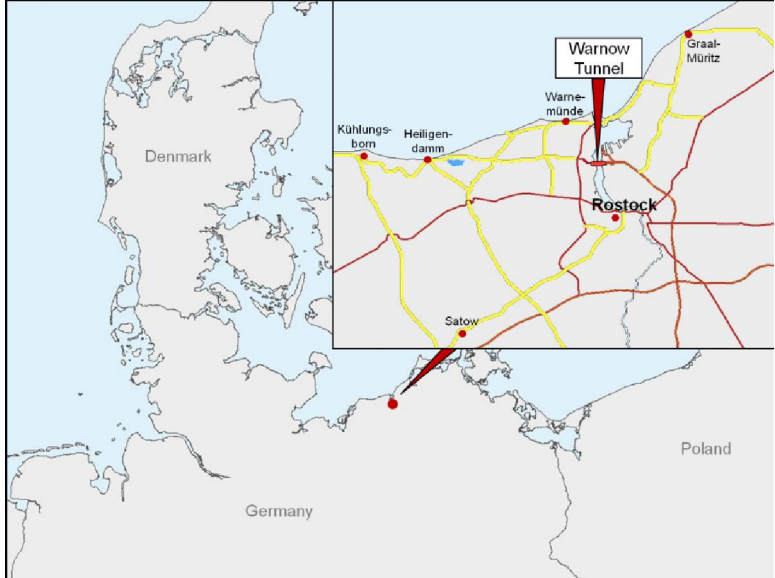
Project organization:

- Project parties (orderer and service provider + the other project contractors): The Finnish Transport Agency together with VR Track Oy will implement the project alliance model for the renovation of the Lielähti-Kokemäki railway.
- Project alliancing means that the owner participant (the Finnish Transport Agency) and the service providers (planners and contractors) form a collaborating group, an alliance, with joint responsibility for the planning and implementation of the project.
- The collaborating group shares and administers the risks, bonuses and responses of the project together.

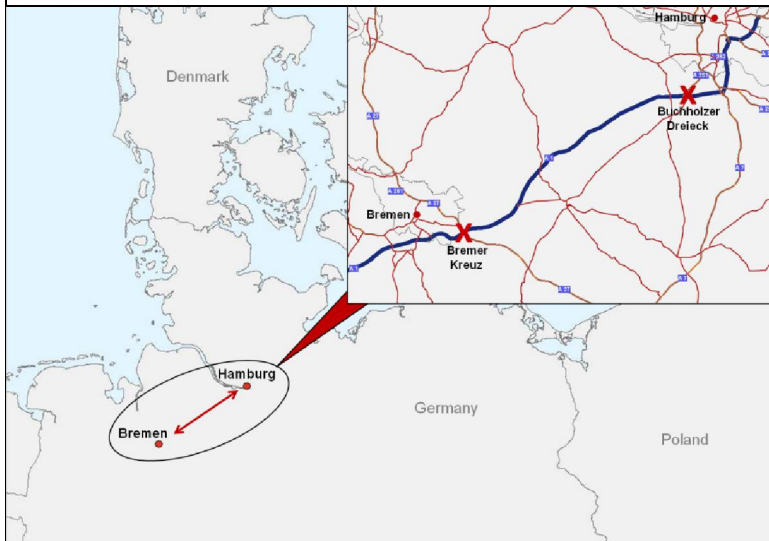
Implementing body:  
 Finnish Transport Agency

Today's status:  
 • The first part (Nokia-Tampere) of the railway will be ready by the end of 2013.

Warnow Tunnel

	<p><b>Technical Characteristics</b></p> <ul style="list-style-type: none"> <li>• Total length of the tunnel (including the both portal buildings at the entrance and the exit): 790 m</li> <li>• 22.5 m width/8.5 m height/4.5 m clearance height</li> <li>• Four lanes with a width of 3.50 m and 1.5 m width emergency walkways</li> <li>• Speed limit: 70 Km/h</li> <li>• Made of six waterproof concrete elements, which were positioned and by means of the immersion and lowering method into the river bed of the Warnow</li> </ul> <p>Project cost: 220 million EUR/8 % grant by the EU</p> <p>Construction schedule: 1999 – 2003</p> <p>Today's status: Ceremonially opened on the 12<sup>th</sup> September 2003</p>
<p><b>Project purpose:</b></p> <ul style="list-style-type: none"> <li>• Create a quick, safe, convenient and cheap alternative which reduces congestions and environmental pollution at the same time</li> <li>• Connect the two banks of the Warnow</li> </ul>	<p><b>Implementing bodies:</b></p> <ul style="list-style-type: none"> <li>• Warnowquerungsgesellschaft together with an international bank consortium</li> <li>• Hanseatic City of Rostock</li> </ul>
<p><b>Project organization:</b></p> <p>First private financed project in Germany and also the first infrastructure project where a toll was charged. Shareholders of the "Warnowquerungsgesellschaft" (Owner) are Bouygues Travaux Publics and Macquarie Infrastructure together with an international bank consortium under the leadership of the Deutsche Bank, the kfw and the EIB. The implementation of the plans for the tunnel was made possible by the "Fernstraßenbau-Finanzierungsgesetz (FStrPrivFinG)" (German financing law for road/motorway constructions by privates) which came into force in the year 1994. This law provides the legal basis for private investments in road constructions. The federal state governments are authorized to enact a regulation which gives the private investor the right to levy a toll.</p>	<p><b>Refinancing:</b></p> <ul style="list-style-type: none"> <li>• The Warnowquerung GmbH &amp; Co KG concludes a concession contract with the Hanseatic city of Rostock. The duration of the contract was 30 years.</li> <li>• Because of the limited use, the concession was extended from 30 years up to 50 years to avoid the insolvency of the operator</li> </ul>

Federal motorway BAB 1 Bremen - Hamburg



Technical Characteristics

- Total length: 72.5 km
- Upgrade to six lanes
- 26 construction sections
- The project comprises among other things 74 bridges, 18 parking areas and service stations, 8 junctions, 1 interchange, 38 underpasses, 36 overpasses and 68 rainwater retention basins and sedimentation tanks.

Project cost: 650 million EUR

Construction schedule: 2008 – 2012

Today's status: The official release was on 11<sup>th</sup> October 2012

Project purpose:

- Increase the efficiency and traffic safety for this section of motorway
- Link the German seaports and Scandinavian countries with south and southwest European economic areas, especially France and Benelux

Implementing bodies:

- A1 mobil in collaboration with several banks
- Federal Republic of Germany/State of Lower Saxony

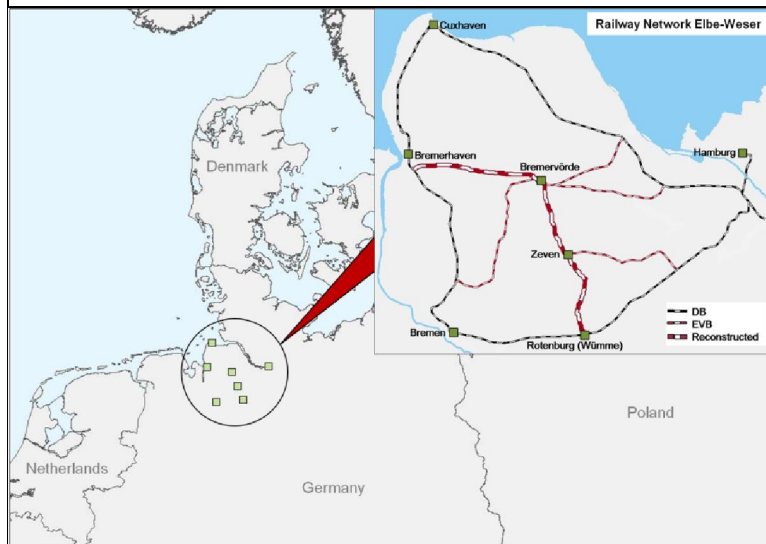
Project organization:

The expansion of the BAB 1 is one of the biggest private public partnership projects in the Federal Republic of Germany. It is one of four pilot projects of the Federal Government for the expansion of motorways and was initiated by the Federal Ministry of Transport, Building and Urban Affairs. Client of the concession project is the Federal Republic of Germany, represented by the State of Lower Saxony. Contractor is the private project company "A1 mobil". Behind this company are the shareholders "Bilfinger Berger AG" with 42.5 %, "Laing Roads Ltd." with 42.5 % and "Johann Bunte" with 15 %. The Lower Saxony Federal State Authority for Road Engineering and Traffic Development accompanies the expansion project since the beginning. Also the planning documentation was made under their authority. Today this planning documentation is providing the regulatory basis for the construction and commissioning A1 mobil. They also define exactly for example where to build noise protections or which demolished bridges have to replace by temporary bridges. A1 mobil is responsible for the negotiations to acquire the land needed which are necessary for the expansion of the BAB 1. New owner of this land plot is the Federal Republic of Germany. Furthermore, "A1 mobil" is responsible for the maintenance of the lanes, buildings, road equipment and carried out the repair measures. "A1 mobil" also organizes the operation service, e.g. winter service, protection at accident sites, waste disposal and outdoor facilities.

Refinancing:

- A1 mobil receives a part of the truck toll during the 30 years contract period for this section of motorway

## Investment of a medium-sized railway company in its infrastructure for Hinterland transport



### Technical Characteristics

Total length of railway network: 235 km (including roadbeds, tracks, bridges, water channels, crossing stations and technical installations)

Project cost: 50 million EUR

Implementing bodies:

- Eisenbahnen und Verkehrsbetriebe Elbe-Weser

Financial support:

- Federal Government of Germany
- Federal State of Lower Saxony
- European Union

### Project purpose:

- Construction of new railway connections to handle the growing container flows
- Increase the existing capacity by some technical and organizational measures

### Project organization:

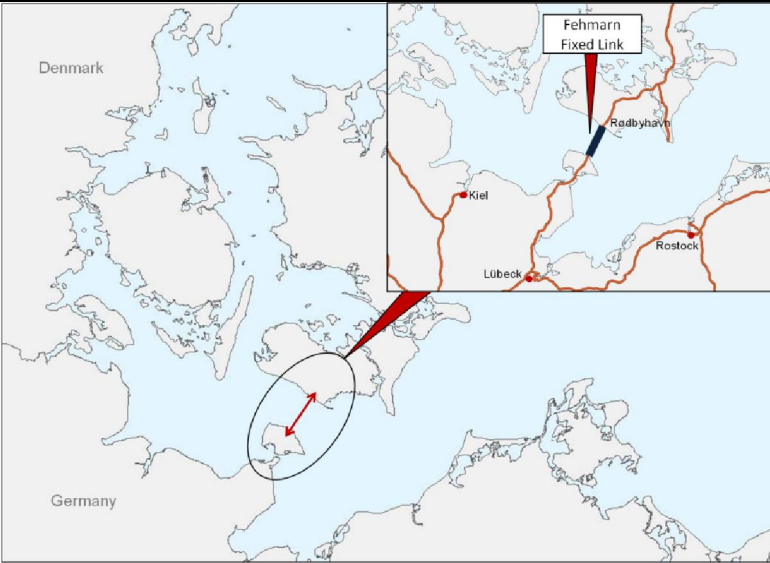
The management of the medium-sized railway company EVB (Eisenbahnen und Verkehrsbetriebe Elbe-Weser) decided to toughen up a part of the own railway network for container trains as a bypass for the overstressed existing hinterland connections. EVB operates a railway network of 235 km between the Rivers Elbe and Weser and passenger rail transport on its own network as well as rail freight trains in hinterland transport on own and external tracks nation-wide. Main commodities transported on the own network of EVB are timber, fertilizers, military equipment, liquids, dangerous goods, and building materials. EVB used the national reflation program for the absorption of the economic crisis and applied subsidies for the reconstruction of 74 of the 85 km railway section between Bremerhaven and Bremervörde and ongoing via Zeven to Rotenburg in order to be able to operate on these sections container trains with an axle pressure of 22.5 tons and a maximum speed of 80 km/h. For these purposes not only roadbeds and tracks were to be exchanged but also a number of bridges and water channels were to be new constructed. Simultaneously some new crossing stations were built to increase the capacity of the connection. For safety reasons, new signals were installed including new software for a railway control center. To avoid acoustic signals of the trains at level crossings to warn car-drivers and pedestrians (noise protection), a number of level crossings were equipped with technical installations to protect street users (red lights [24], half-barriers [6]), 14 crossings were closed and 7 locked.

Some new crossing stations were constructed to increase the capacity of the connection. Actually, one container train per hour can pass the line.

From the beginning of the planning up to the finishing of the realization of the reconstructions only twenty months were needed. This short time period for the realization became possible by a close cooperation between the involved companies and bureaus. In total, 50 million Euros were invested for these measures. The subsidies of the national reflation program of the Federal Government were complemented by subsidies from the European Union and the Federal State of Lower Saxony.



Fehmarnbelt Fixed Link

		Technical Characteristics
		<ul style="list-style-type: none"> <li>• Total length of the tunnel: 17.6 km (from tunnel portal to tunnel portal)</li> <li>• Longest immersed tunnel for combined rail and road traffic in the world</li> <li>• Height: 8.9 m within the cross-section</li> <li>• Width: 42.5 m with emergency exits every 108 m</li> <li>• Four lane motorway and a twin-track railway, each in separate tubes</li> <li>• Speed limit: 200 km/h for passenger rail transport; 140 km/h for rail freight transport; 110 km/h for road traffic</li> </ul>
<p><b>Project purpose:</b></p> <ul style="list-style-type: none"> <li>• Direct, close and fixed link between Scandinavia and Europe</li> <li>• Higher level of cross-border integration in the areas science, business, labour market and culture</li> <li>• A shortened travel time and an increase in the level of employment during the construction phase as well as after opening</li> </ul>		<p><b>Project cost:</b></p> <ul style="list-style-type: none"> <li>• Total gross costs: 5.5 billion EUR</li> <li>• General operating and maintenance costs: 73.7 million EUR annually</li> <li>• EU fund: 267 million EUR (2007 – 2012)</li> <li>• Hinterland connection in Germany: 840 million EUR (borne by the Federal Government and the Federal State of Schleswig-Holstein (60 million EUR))</li> <li>• Hinterland connection in Denmark: 1.2. billion EUR/financed in the way as the Fehmarn Fixed Link</li> </ul>
<p><b>Project organization:</b></p> <p>The State of Denmark is responsible for the financing of the section from coast to coast and the Danish hinterland connection. The Link will be financed by tolls. To achieve this, Femern A/S (part of the Sund &amp; Bælt Holding A/S which is 100 % owned by the Danish Transport Ministry) takes loans at the international financial market. The State of Denmark acquires the ownership of the Link and provides State guarantees. For this reason Femern A/S gets the loans under the same conditions as the Government. The repayment of the loans will be occurred by the tunnel users in the form of a toll. The amortization period for the Fixed Link and the hinterland connection should be 39 years.</p> <p>For an efficient use of the Fixed Link, the expansion of the German and Danish hinterland road and rail network is essential. These connections are planned and financed by each State. In Germany this project includes the expansion of the B 207 (E 47) between Heiligenhafen and Puttgarden to four lanes, the electrification of the railway line between Lübeck and Puttgarden and securing a sufficient capacity of the single-track-section between Bad Schwartau and Puttgarden. In Denmark the following measures are planned: electrification of the railway line between Ringsted and Rødbyhavn, double-track expansion of the railway line between Ringsted and Masnedø and between Orehoved and Rødbyhavn and the expansion and optimization of the motorway E 47 between Rødbyhavn and Sakskøbing.</p>		<p><b>Construction schedule:</b> 2014 - 2020</p> <p><b>Implementing bodies:</b></p> <ul style="list-style-type: none"> <li>• Femern A/S</li> <li>• State of Denmark</li> </ul> <p><b>Refinancing:</b> By tolls with an amortization period of 39 years</p>

**Freight Village Europark Coevorden - Emlichheim**

**Technical Characteristics**



Space: 300 ha (120 ha in the Netherlands and 280 in Germany) including an intermodal terminal rail road, port and canal

Prices of land plots: 40.40 – 80.00 EUR per sq m in the Netherlands and 18.50 EUR per sq m in Germany

Construction schedule: 1997 - ?

Implementing bodies:

- Coevorden
- Emlichheim

Supported by:

- Province of Drenthe
- District of Grafschaft Bentheim
- Federal State of Lower Saxony

Financial support:

- European Union
- Samenwerkingsverband Noord-Nederland
- Euregio
- Ems Dollart Region

Project purpose:

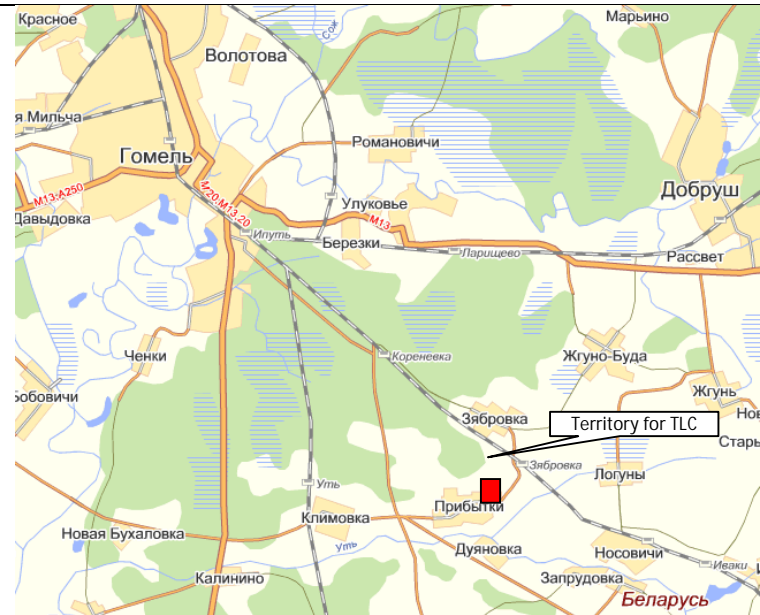
- Create business chains to achieve synergistic effects for the operators and the environment
- Modern logistic prerequisites
- One location with two markets

Project organization:

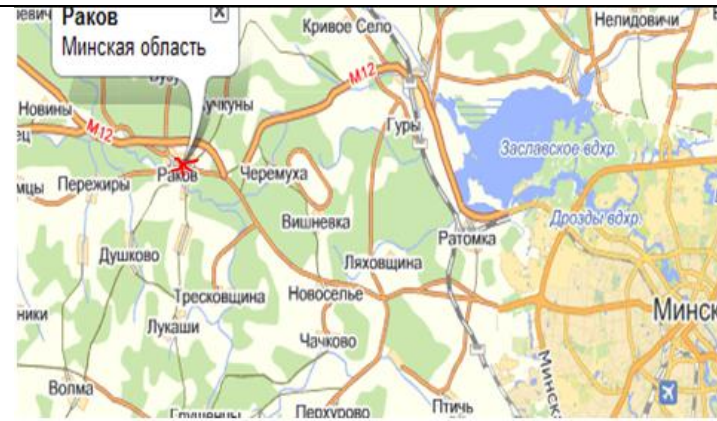
The Europark is an industrial park up to 350 ha at the German/Netherlands border between the municipalities Coevorden and Emlichheim. The project started in 1997 and is still in process. It is realized by the Europark Coevorden – Emlichheim Entwicklungsgesellschaft mbH, a cooperation between the Netherlands municipality Coevorden and the German municipality Emlichheim. The Europark is developed step by step in four several phases. The first phase was completed in 2004. In the Netherlands 83 ha and in Germany 20 ha were exploited including the industrial port and the main access road. In the second phase (2005 – 2007) additional 90 ha were developed on the German side including infrastructure measures such as the access road from port and the new construction of the railway container terminal. The third and fourth phases are in process. These phases include further 130 ha in the Germany. The development of this area is dependent from the demand. The legal pre-requisites for step three are finished. The road infrastructure was financed by the municipalities Coevorden and Emlichheim with subsidies from the Province of Drenthe, the Federal State of Lower Saxony and the European Fund for Regional Development. The intermodal terminal rail-road was constructed by Bentheimer Eisenbahn (BE), a private rail company, and was paid by the Federal Republic of Germany (6.5 million EUR), the Kingdom of The Netherlands (3.7 million EUR), and BE (2.3 million EUR). Canal and port were financed by the municipality Coevorden and the Dutch Region (Samenwerkingsverband Noord Nederland).

**Belarus****Appendix XXI**

Multi-functional transport – logistic center (TLC) on the territory on the free economic zone «Gomel – Raton»

	Technical characteristics
	<p>The total area of the plot for the construction is 200 ha.</p> <p>The real minimum values of the parameters:</p> <ul style="list-style-type: none"> <li>- the total area of the sheltered warehouses no less than 50,0 thou m,</li> <li>- the total area of the open air grounds to store goods not less than 10,0 thou sq. m,</li> <li>- the area of the containers ground to process heavy-loaded containers not less than 15,0 thou sq m,</li> <li>- the total capacity of the warehouses not less than 200 thou tons,</li> <li>- the coefficient that characterizes the part of passes is 0.4.</li> </ul> <p>The cost of the project is 1.34 billion of blr roubles (120 mln eu). Budget in shares (according to the plan):</p>
<p>The aim of the project :</p> <ul style="list-style-type: none"> <li>• The creation of a modern transport – logistic center for rendering all kinds of service to take, to process, to store and to send large and small batches of goods by automobile, railway and air transport.</li> <li>• To increase the transit traffic flows via the two European transport passways West – East and North – South along the highways M-8 “Ukraine-Belarus-Russia”, M-10 “Poland-Belarus-Russia”, M-5 “Latvia-Belarus” and the railroad “Ukraine-Belarus” (the direction Shchors – Gomel).</li> </ul>	<p>The allotment of budget resources on the infrastructure creation is carried out annually within the State investment program. The term of agreement is 36 years. The schedule of implementation (plan): 2013 – 2018. The current status:</p>
<p>Design organization:</p> <p>The administration of FEZ “Gomel – Raton” allocates a plot within the area of FEZ for the construction of TLC. It is planned to carry out the construction of the transport-logistic center stage by stage.</p> <p>The 1<sup>st</sup> stage envisages the creation of a customs – terminal complex and infrastructure.</p> <p>At the 2<sup>nd</sup> stage it is planned to construct additional warehouses, outdoor grounds to store goods, the guarded parking and office buildings.</p> <p>The 3d stage is the time period to create all necessary infrastructures for the logistic center “A” class.</p> <p>The sources of financing: The project is financed at the expense of one or several investors (partners) The models of financing the project at the expense of the budget</p> <p>While realization of the project in the status of the “Gomel – Raton” FEZ resident the financing of the expenses to create engineering and transport infrastructure necessary for the realization of the investment project with the announced amount of investment equivalent of more than 10 mln eu is carried out in the first turn with the resources that are planned in the State Investment program and also local budgets for the regular fiscal year for a certain REZ.</p>	<p>The plot for the construction is available. The realization of the project in the status of “Gomel – Raton” Free Economic Zone resident gives the right to use the tax and customs preferences for the term of the project implementation. The Bodies that carry out the project: The Ministry of transport and communication of RB; - The Gomel regional executive committee; - investors.</p> <p>Financial resources during and after the realization of the project</p> <ul style="list-style-type: none"> <li>- The payments of users collected by the economical body managing the Transport – Logistic Center (TLC);</li> <li>- Compensations from the budget of RB;</li> <li>- Benefits and state guarantees while the construction of the TLC given to the investor.</li> </ul> <p><a href="http://gomelraton.com/invest2.php">http://gomelraton.com/invest2.php</a></p>

The transport – logistic center COOO “BelVingesLogistic” in the settlement of Rakov



Technical characteristics

The total area of the plot for the construction is 10 ha. It is located in the Volozhin region, at the village of Rakov which is 25 km from Minsk on the highway Vilnius – Minsk M12, the transportation passage XIБ. Including

- Warehouses 29 thou sq m
- Administrative, consumer service and office premises - 2.8 thou sq m
- The number of lots – 20 thou
- The number of loading grounds - 30
- The grounds for unloading non-standard goods - 2
- The number of jobs – up to 520
- The amount of processes loads – 4 thou tons per day

The cost of the project: 21.5 mln eu:

1<sup>st</sup> stage – 14.5 mln eu

2<sup>nd</sup> stage – 7 mln eu

Financial sources:

- The investments into the basic fund of COOO “BelVingesLogistic” – 3.6mln eu
  - Loans – 11.9mln eu (Belgasprombank)
  - The resources of investors – 7 mln eu
- Models of financing the project at the expense of budgets resources:
- The investments into the basic fund of COOO “BelVingesLogistic” – 3.6 mln eu, including joint stock company “Alvora” – 1.4 mln eu (Lithuania)
- Join stock company “VingesTerminalos” – 1.2 mln eu (Lithuania)
- Open joint stock company “Belintertrans” – 1 mln eu (Belarus)
- The agreement duration is 30 years
- Implementation schedule (plan): 7-8 years
- Today’s status:
- The 1<sup>st</sup> stage was implemented in December 2011
- The expected date of the completion of the 2<sup>nd</sup> stage is 2013.

The aim of the project is:

- To create the convenient infrastructure for the companies that deal with transportation, storage and delivery of goods to the consumer providing the full range of logistic services (all in one).
- To create a modern transport – logistic center for taking, processing and storage of goods of any kind
- To increase the traffic flows through the transportation passage IX Б (highway m12)

It is planned to carry out the construction of the logistic center stage by stage. The 1<sup>st</sup> stage was realized in December 2011. The 1<sup>st</sup> stage envisages the construction of the “A” class storage complex on 16.5 thou sq m and administrative-maintenance and office premises on 2.5 thou sq m, 20 thou lots, 30 loading grounds, 2 grounds for unloading non-standard goods and 400 working positions. The 2<sup>nd</sup> stage envisages the construction of additional storage grounds on 10 thou sq m, outdoor grounds to store goods, a guarded parking for automobiles and office premises. 120 jobs are added.

The design company:

The project was initiated by COOO “BelVingesLogistic” together with the Minsk Regional Executive Committee in 2008 according the Program of the logistic system development in the Republic of Belarus for the period to 2015.

[www.ecopress.by](http://www.ecopress.by), [www.government.by](http://www.government.by), [www.export.by](http://www.export.by)

The transport – logistic center RUP «Beltamozhservice» in the village of Shchitomirichi



Technical characteristics

The total area of the plot for the construction is 17.1 ha and is located in the Minsk area, the village of Shchitomirichi 5 km from Minsk circular highway, the transport passage XI Б Including

- Warehouses 21 thou sq m of:
  - Sheltered warehouses for temporary storage – 10000sq m
  - Sheltered customs clearance warehouses – 6000 sq m
  - Sheltered warehouses for common use – 5000sq m
  - The number of lots – 18,5 thou
  - Administration and consumer services premises, the total area 3500 – 4000sq m, the building for maintenance services of the terminal, the total area 1000 sq m, outdoor grounds to keep containers and large-sized goods that do not demand any special storage conditions
  - Hotel for 50 people
  - Catering bloc
  - Medical and consumer services
  - Technical maintenance service with washing for trucks
  - Parking for heavy dump-trucks – 200 lots
  - Parking lots for official, private and visitors’ autos – 250 lots
  - The number of jobs is up to 300
- The project cost is 30 mln eu  
Budget in shares:
- The investments of RUP” Beltamozhservice” – 8mln eu.
- Loan of 22 mln eu from AO “ Komerchi bank” Check Republic on preferential terms under the guarantee of returning the investments of AOA “ ASB Belarusbank” (Belarus) .

The aim of the project  
The connection of the routes between the Baltic states, Ukraine, Europe and Russia. Here there is a unique chance to use both automobile and railroad transport with rendering the full range of logistic services (all in one)  
The creation of a modern transport – logistic center to take, process and store goods of any kind  
The design company  
The project was initiated by RUP “ Beltamozhservice” in 2011 according to the Program of logistic system development in the Republic of Belarus for the period up to 2015  
General contractor: AO “ Metroslav” (Check Republic)

Duration of agreement is 6 years  
The schedule of implementation (plan): 2001 - 2013  
Today's status  
Partly implemented  
The expected date of the completion is the 1<sup>st</sup> half of 2013

[www.tvr.by](http://www.tvr.by), [www.transportal.by](http://www.transportal.by), <http://belapan.com>,

The transport – logistic center “the Logistic Center “Prilesye”, the resident of the free economic zone “Minsk”


		Technical characteristics
		<p>The plot, the area of which is 100 ha including:</p> <ol style="list-style-type: none"> <li>1. The open access zone: administrative blocs – 13 thou sq m, a parking lot for 250 cars. The trade-exposition grounds – 12 thou sq m</li> <li>2. The limited access zone: warehouses (14 buildings) – 210 thou sq m, intermodal terminal – 80 thou sq m.</li> </ol> <p>The project cost: 200 mln US \$ The construction is planned to be carried out stage by stage. The first part of the object must be completed in 2011. By 2013 the area of warehouses and offices must make up 210 thou sq m. The client has a task to construct two-level road junctions with already available highways M1 and M4 besides the railroad and also to construct a net of roads on the territory of the complex and around it to manage the traffic. It is planned to complete the second part in 2014. During the second stage it is envisaged to construct additional storage grounds of 10 thou sq m, outdoor grounds to store goods, a guarded car parking and offices. The founder: companies “Keison” and “Farasar” (Iran) and also the company ‘Sadburry Enterprises Limited’ (Cyprus) The Project was initiated according to the Program of the logistic system development in the Republic of Belarus for the period up to 2015</p>
<p><b>The Aim of the project:</b> To render the full complex of the world standard logistic services for the transporters to increase the traffic flows going through the Republic and to improve the quality of service by using modern logistic ways of goods traffic management and new technologies. The company intends to involve a professional operator, most likely, from the European Union.</p>		
<p>The center is located at the intersection of the highways E-30 (Berlin – Moscow   M1) and E-271 (Minsk – Mogilyov   M4). There has been provided the access to the Minsk Circular Highway, European transportation passage No2 (Berlin – Warsaw – Minsk – Moscow) and the National airport Minsk. The delivery of goods will be carried out on both the highways and the railroad brought from the area of one of the largest industrial joints of Minsk. Design company: concern Deutsche Bahn International Financial sources: The total amount of investments into the object for 5 years will make up about \$200 mln (the general investor is “Keyson” company (Iran)</p> <p><a href="http://www.tc.by/exhibitions">http://www.tc.by/exhibitions</a></p>		

Table 1. Volume of Financing Investment Projects and Activities of the State Program of Railway Transport Development in Belarus for 2011-2015.

Name of investment projects	Implementation period	Funding. Exchange rate of 1 \$ = 3366 BR					Funding sources	Responsibility	
		Total, million BR	Including by year, million BR						
			2011	2012	2013	2014			2015
1	2	3	4	5	6	7	8	9	10
<b>1. Purchase of traction and rolling stock:</b>	2011-2015	1974257	227300	494065	335684	435223	481985	own funds, credit, republican budget	Belarusian Railways (BR)
- reimbursement of interest on bank loans, and interest on external government loans <*>	2013-2015	33608	-	-	8500	11557	13551	republican budget	BR
- purchase of passenger electric locomotives	2012-2015	471536	-	-	89816	179633	202087	credit	BR
- purchase of passenger locomotives	2011-2013	106945	53473	26736	26736	-	-	credit	BR
- purchase of shunting locomotives	2014-2015	52997	-	-	-	26498	26499	credit	BR
- purchase of electric trains	2012-2015	230265	-	98704	23437	43548	64577	credit	BR
- purchase of diesel trains	2011-2015	321017	30171	76557	79269	66599	68421	credit	BR
<b>2. Purchase of cars - total:</b>	2011-2015	2710108	522539	520360	530613	563940	572656	credit	BR
Including:									
- passenger	2011-2015	391578	58833	56654	66907	100234	108950	credit	BR
- freight	2011-2015	2318530	463706	463706	463706	463706	463706	credit	BR
<b>3. Electrification of railway lines, total:</b>	2011-2015	694906	209776	308681	70796	96078	9575	own funds, credit, republican budget	BR
Including:									
- modernization of the contact network,	2011-2013	19278	6426	6426	6426	-	-	own funds,	BR
- modernization of traction substations,	2011-2013	12500	2500	2500	2500	2500	2500	own funds,	BR
- electrification of the sites Gomel-Osipovichi, Zhlobin-Kalinkovichi Molodechno - Gudogay-State border, Kolodishchi - Shabany, Gatovo - Mihanovichi, including:	2011-2015	663128	200850	299755	61870	93578	7075	own funds, credit, republican budget	BR
- credit		459062	100425	223580	52264	82793	-	credit	BR

&lt;\*&gt; The amount of funding will be updated in due course to the limits stipulated by the law on the national budget for the next fiscal year.

continues

## Belarus

## Appendix XXV, 2

Name of investment projects	Implementation period	Funding. Exchange rate of 1 \$ = 3366 BR						Funding sources	Responsibility
		Total, million BR	Including by year, million BR						
			2011	2012	2013	2014	2015		
1	2	3	4	5	6	7	8	9	10
- reimbursement of interest on bank loans for investment projects in terms of competitive placement, as well as interest on foreign government loans <*>		30444	-	2978	9607	10784	7075	republican budget	BR
- own funds		173622	100425	73197	-	-	-	own funds	BR
<b>4. Development of the Minsk railway junction, total:</b> Including:	2011 -2015	758325	127961	105910	254569	245303	24582	own funds, Minsk budget	BR, Minsk City Executive Committee
- organization of the internal railway transportation	2011-2013	86857	85307	750	800	-	-	own funds, Minsk budget	BR, Minsk Regional Executive Committee
- construction of passenger technical station the Minsk railway junction	2011 -2015	266912	39599	47520	68640	86571	24582	own funds	BR, Minsk Regional Executive Committee
- construction of additional main paths on the way to the station Minsk-Passazhirskiy	2012 -2014	256213	53128	99535	103550	-	-	own funds	BR
- construction of additional main ways to bypass Minsk	2013 -2014	130190	-	-	-	81090	49100	own funds	BR
<b>5. Development of high-speed inter-region passenger traffic, total:</b> Including:	2011 -2015	3100300	516060	757645	923374	497929	405292	own funds	BR
- modernization of the railway infrastructure		3050896	516060	741177	906906	481460	405293	own funds credit	BR
- construction of the highway overpass over the railroad		49404	-	16468	16468	16468	-	republican budget	BR

<\*> The amount of funding will be updated in due course to the limits stipulated by the law on the national budget for the next fiscal year.



**Russia Terminal-Logistics Centre «Belyi Rast» - [www.brterminal.com](http://www.brterminal.com) Appendix XXVI**



**Project purpose:**

Multifunctional terminal-logistics centre (TLC) «Belyi Rast» is a pilot project of OAO «Russian Railways», intending to set up a network of contemporary TLCs alongside railroads. The project will allow freight owners to form efficient multimodal delivery routes. OAO «Russian Railways» will be able to attract additional freight volumes to provide more effective utilization of its transportation network.

**Project organization:**

The project was initiated by the Government of the Russian Federation in 2008 (the RF Government decree № 877-p of 17.06.2008 «The strategy of railway transport development in the Russian Federation until 2030»). The project documentation was approved by OAO «Russian Railways» board of directors 14.12.2010.

TLC construction consists of two stages.

**The 1-st stage (2010-2013)** – building of a container terminal, universal railroad warehousing complex, custom clearance centre, railway, road-transport and engineering infrastructure.

**The 2-d stage (2013-2015)** – setting up terminal for bulky and industrial loads, autoterminal, inert goods terminal and a business zone.

Project management company is OOO TLC «Belyi Rast», which is 100% subsidiary of OAO «Russian Railways».

Main functions of the project company:

- Acquisition of the land rights
- Organization of design and survey works implementation in order to get permission for construction
- Project fund raising (investment in equity, getting bank loans, attracting private investors).

Projected turnover of goods – 18 mln. tons/year  
Capacity – 270 000 TEU/year  
Area – 180 Hectares

**• 4 terminals:**

- container terminal (20', 30', 40', 45' and refrigerator containers)
- bulky and heavy loads terminal (steel-works, pipes, machinery, timber, etc.)
- inert goods terminal (storage at open area and in silos)
- autoterminal
- Multy-purpose warehouse complex
- Custom clearance centre
- Business zone.

**Project cost:**

19,791 bln. roubles (489 mln. euros)

**Design and preparation phase**

**Financial sources:**

OAO «Russian Railways» (state owned company) - 1,98 bln. roubles

**Financial model:**

Public funding. All the investment comes from the state-owned company.

**Implementing bodies:**

- OAO «Russian Railways»
- OOO TLC «Belyi Rast» (project promoter)

**Construction phase**

**Financial sources:**

OAO «Russian Railways» and private investment – 17,811 bln. roubles (shares are to be defined later)

**Financial model:**

Public-private partnership.  
Joint enterprise with mixed capital. Foundation of the state-owned management company with the attraction of private investment to fund the development of logistics infrastructure (warehouses and terminals).

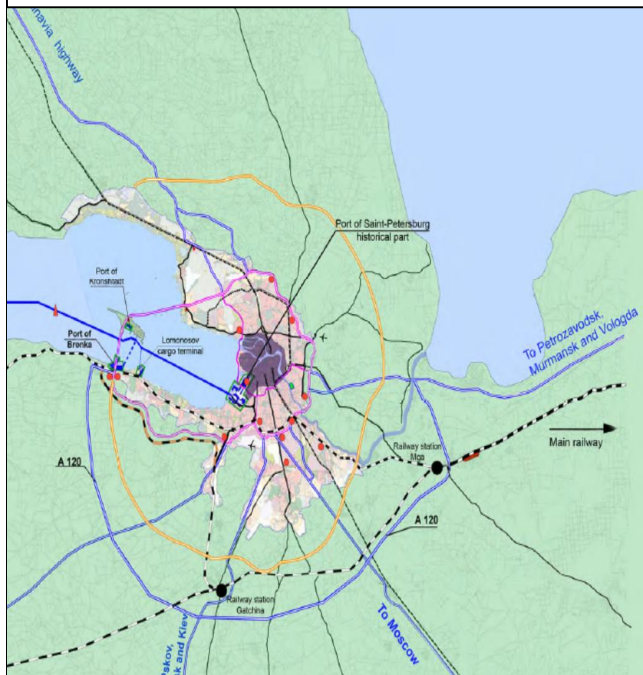
**Implementing bodies:**

- OAO «Russian Railways»
- OOO TLC «Belyi Rast» (project promoter)
- Private investors
- Banks

**Implementation schedule (plan):** 2010-2015

**Today's status:**

The ground area for the TLC has been acquired. The management company has obtained all the necessary permissions from the region's government in order to set up engineering communications and begin construction. The project of the railway station development has been elaborated.



### Technical Characteristics

#### **Ro-Ro terminal**

Capacity – 260 000 units/year

Area – 57 Hectares

The number of berths – 3

#### **Container terminal 1**

Capacity – 1,45 mln. TEU/year

Area – 107 Hectares

The number of berths – 5

#### **Logistics centre and container terminal 2**

Capacity – 0,45 mln. TEU/year

Area – 42 Hectares

#### **Container terminal 3**

Capacity – 3 mln. TEU/year

Area – 103 Hectares

The number of berths – 7

#### **Project cost (cargo complex only):**

58,9-59,6 bln. roubles (1,42-1,44 bln. euros) in prices of 01.01.2009

#### **Financial sources:**

- Federal investment fund – 15,2-15,9 bln. roubles
- OOO «Fenix» equity – 6,5 bln. roubles
- Bank credits – 37,2 bln. roubles, incl.
  - Credit from Vnesheconombank – 11,16 bln. roubles
  - Credit from EBRD – 13,02 bln. roubles
  - Credits from national commercial banks - 13,02 bln. roubles

#### **Financial model:**

Public-private partnership.

Foundation of a private management company with project co-financing by the state.

#### **Implementing bodies:**

- OOO «Fenix» (project promoter)
- Federal investment fund
- Vnesheconombank
- EBRD
- national commercial banks («Sberbank» is expected to take part in the project)

OOO «Fenix» is responsible for setting up all the terminals with the financial help of the Federal investment fund.

Some of the auxiliary works (beyond the aforementioned sum) are expected to be funded either from the Federal or city budget (the development of access channel, shunting water area, adjoining rail and motor roads, roads on the territory of the complex).

**Implementation schedule (plan): 2013-2022**

#### **Today's status:**

Some preparatory work have been carried out.

The construction of piling foundation of berths #3, 4 was ended.

The construction of piling foundation of berth #5 was started.

#### **Project purpose:**

Increase of port capacities on the Russian coast of the Gulf of Finland as well as transport and logistics development due to the outer harbor construction. According to "The Concept of development for the most prospective areas of Port of Saint-Petersburg", Bronka will become one of the leading container and ro-ro cargo areas of Port of St. Petersburg.

#### **Project organization:**

The development of outer harbor Bronka was provided by the government of St. Petersburg in 2005 with the approval of the general layout of St. Petersburg (Government Decree № 728-99).

On the base of the St. Petersburg Government Decree № 1598 of 16.12.2008 and the land rent agreement on investment conditions № 16/3KC-000061 of 21.01.2009, OOO «Fenix» has been authorized to construct MSCC «Bronka».

In 2009 the project became a part of the «Concept of the development of prospective territories (outer harbors) of the Big Port of St. Petersburg».


Project plan assumes three stages:

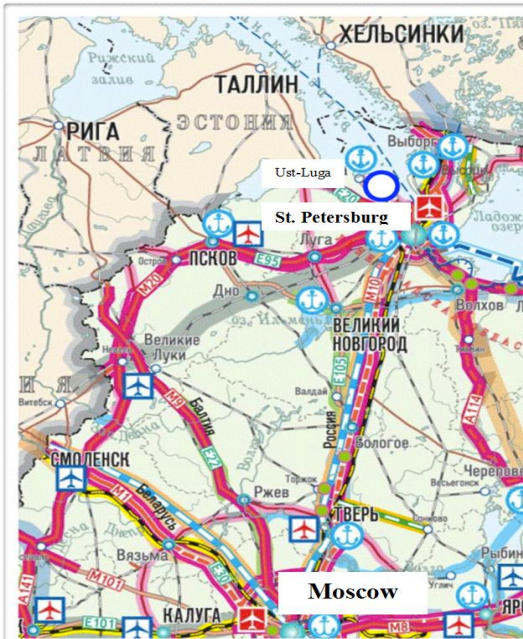
**The 1-st stage (2013-2015)** – building of a container terminal (1,45 mln. TEU/year) and ro-ro terminal (260000 units/year)

**The 2-d stage (2017)** – container terminal expansion up to 1,9 mln. TEU/year, ro-ro cargo terminal improvement, logistics centre construction

**The 3-d stage (2022)** – setting up a container terminal (3 mln. TEU/year).

**www.port-bronka.ru – Port of St. Petersburg**

Russia	River Port «Dmitrov» — Port in Moscow region	Appendix XXVIII
		<b>Technical Characteristics</b>
 <p> <b>Main-line railways</b> —————  <b>Federal motorways</b> ————  <b>Navigable waterways</b> ————  <b>Secondary motor roads</b> ———— </p>		<p> <b>Total area – 110 Hectares</b>  The area of warehouses – 99 300 sq.m  The complex will include multi-temperature cold storage warehouses (26 100 sq.m), container terminal (20 500 TEU per year), cross-docking platform and regular warehouses (73 200 sq.m).  Height of the warehouses (internal) - 12,5 m.  Warehousing capacity - 133 000 palettes.  Number of docks - 275.  Office/administrative facilities - 7 000 sq.m. </p> <p> <b>Project cost:</b>  11 bln. roubles (272 mln. euros) </p> <p> <b>Financial sources:</b> <ul style="list-style-type: none"> <li>• Federal investment fund – 4,95 bln. roubles</li> <li>• OOO «Thesaurus Port of Dmitrov» equity and bank credits – 6,05 bln. roubles</li> </ul> </p> <p> <b>Financial model:</b>  Public-private partnership.  Foundation of a private management company with project co-financing by the state. </p>
<p> <b>Project purpose:</b>  Construction of contemporary port logistics complex in the area nearby Tatischev widening of the Moscow channel.  Project will help to remove certain infrastructure and technological constraints in accordance with the state goals concerning the development of transport infrastructure.  Project will allow to use in a more extensive way inland waterways and develop short-sea transportation. </p>		<p> <b>Implementing bodies:</b> <ul style="list-style-type: none"> <li>• OOO «Thesaurus Port of Dmitrov» (project promoter)</li> <li>• Management company «Liter»</li> <li>• Federal investment fund</li> <li>• Banks</li> </ul> </p> <p> The Federal investment fund will finance 50% of the costs of the port infrastructure design. Construction of the state-owned port infrastructure will be financed from the Federal investment fund. It includes following activities: <ul style="list-style-type: none"> <li>• construction of cargo berth facilities</li> <li>• riverside strengthening operations</li> <li>• port zone arrangement</li> <li>• setting up lines of communication</li> <li>• road building</li> <li>• railroad branch-line construction.</li> </ul> </p> <p> OOO «Thesaurus Port of Dmitrov» has been funding 50% of the port infrastructure design costs as well as all the costs of building warehouses and their provision with all necessary equipment. </p>
<p> <b>Project organization:</b>  The project was initiated by private management company «Liter» in 2007.  In 2008 the project was approved by PPP council of the federal ministry of transport and became a part of the «Programme of the Moscow region transport complex development» (Regional government decree of 04.06.2008).  Project funding was provided in the Federal targeted investment programme for 2011-2013 approved by the ministry of economics and development (13.01.2011). </p> <p> The design phase of the project was started in 2011. The construction phase is expected to take four years (2012-2015).  The construction phase will consist of two stages:  <b>The 1-st stage (2012-2013)</b> – building of a port, setting up a part of warehousing facilities and purchasing of necessary equipment  <b>The 2-d stage (2014-2015)</b> – building of a second part of warehousing facilities. </p> <p> <a href="http://www.liter.ru/warehouses/dmitrov">www.liter.ru/warehouses/dmitrov</a> </p>		<p> <b>Implementation schedule (plan): 2011-2015</b> </p> <p> <b>Today's status:</b>  Design works have been carried out. </p>

**Project purpose:**

Ust-Luga port is being built as a universal port. The multipurpose terminals and operating zones will provide services of transshipment and additional handling of more than 20 categories of cargoes. Due to application of modern technologies and equipment the terminals will be able to meet competitive services terms.

**Project organization:**

The project was initiated by private investor, who founded OAO «Ust-Luga Company» in 1992. In 2000 OAO «Ust-Luga Company» set up a contract with general directorate of the state customer within the framework of the governmental programme «Revival of the merchant navy of Russia». The contract, that was approved by the state ministry of transport, allowed OAO «Ust-Luga Company» to become the construction management company of the port. In 2002 quadripartite treaty was concluded between ministry of transport, ministry of the railroads, government of the Leningrad region and OAO «Ust-Luga Company». The treaty defines authorities and responsibility of the project parties. In 2004 investment contracts between OAO «Ust-Luga Company» and state enterprise «Rosmorport» were signed. The contracts have created a legal framework for preparation of the port shunting water area. In 2006 three-power treaty, concerning development of the port and its operation, was concluded. The parties of the agreement were Federal agency for the federal property management, Federal agency for sea and river transport, and OAO «Ust-Luga Company». In 2008 OAO «Ust-Luga Company» and Federal investment fund signed an agreement on joint financing of construction and operation of Yug-2 terminal.

**Technical Characteristics**

20 terminals, including multipurpose transshipping facilities  
Full capacity of the port – 180 mln. tons  
Total area – 1000 Hectares.

**Project cost:** 148,6 bln. roubles (3,669 bln. euros)

**Financial sources:**

- Federal budget and the Federal investment fund – 27,4 bln. roubles
- Private investment – 121,2 bln. roubles, incl. OAO «UST-LUGA Company» equity – 36,9 mln. roubles and bonded debt – 600 mln. roubles

**Financial model:**

Public-private partnership.  
Creation of a management organization in the form of a joint-stock company with the share of the state or municipal authorities.  
The shares of OAO «UST-LUGA Company» have been distributed as follows:  
25% + 1 share belong to the government of Leningrad district,  
8,52% of the shares is owned by OAO «Russian Railways»,  
66,48% of the shares left belong to private Russian and foreign investors, including infrastructure investment funds.

**Implementing bodies:**

- OAO «Ust-Luga Company» (project promoter)
- The government of Leningrad region
- Private investors
- State-owned natural monopolies
- Federal investment fund.

OAO «UST-LUGA Company» is responsible for setting up all the communications, construction of certain terminals as well as for the investors attraction.

Major part of the facilities (terminals) has been funded by private and state-owned investors (natural monopolies).

**Implementation schedule (plan):** 2000-2015

**Today's status:**

Eleven terminals are operating at the moment (coal terminal, multipurpose transshipping terminal, sulphur terminal, auto-railroad ferry complex, Yug-2 multipurpose transshipping terminal, timber terminal, container terminal, crude oil terminal, oil products terminal, Ust-Luga oil depot, and New Harbor terminal).

**Port in Leningrad Region**

[www.ust-luga.ru](http://www.ust-luga.ru)

Performance Characteristics



Airport “Pulkovo” has in its disposal:

- *Airdrome with 2 parallel independent runways (category III ICAO), serving aircrafts without limits, system of taxiways, 5 aprons;*
- *Two terminals “Pulkovo-1” and “Pulkovo-2” for serving domestic and international flights, equipped with SITA DCS for automatic passengers registration;*
- *150 routes on a regular basis operated by 70 carriers (43 international and 27 domestics)*
- *Average passengers traffic - 9.6 mln. passengers (as a result of 2011),*
- *Pulkovo airport ranks 3rd by passenger flow among all Russian airports after two biggest Moscow airports - Domodedovo and Sheremetievo.*

Project purpose:

- Development and modernization of airport infrastructure.
- Transformation of “Pulkovo Airport” into largest hub in the Baltic region. Increase of passenger traffic, rise in cargo turnover.
- Provision of high level of service for Pulkovo Airport’s passengers.
- Growth of St. Petersburg’s budget revenues due to raise in airport income and taxes collected.

Project cost (1st phase) – 1 200 mln Euro  
Project term –30 years (April 2010 - April 2040)  
Financial Sources :

*Budget Funds:* financing of reconstruction of two runways, and architectural design.

*Funds involved by Private Investor (mln.€) –*

- *Total* EURO 1 200 mln.
- *Equity* EURO 480 mln. (40%)
- *Bank loans* EURO 720 mln.(60%)

from the pool of Russian and International Commercial Banks and Financial Institutions: *VEB, EBRD, IFC, NIB, BSTDB, EDB*

Private partner (NCG):

*Acquires rights for the period of 30 years:*

- to rent of land plots and airport assets;
- to get 99/100 share of joint ownership with the City for all reconstructed and newly built facilities;
- to operate the only airport in the city

*Takes obligations for:*

- construction of centralized passenger terminal with capacity of 14 mln. passengers and total area of 130 205 sq.m., by 2014;
- reconstruction of existing aprons with increasing of aircraft stands;
- ground handling and aircraft maintenance facilities;
- construction of commercial real-estate;
- provision of new airport infrastructure with level of service C according to IATA classification;
- paying annuity to the City and JSC “Pulkovo Airport”  
City St. Petersburg (directly or through JSC “Pulkovo Airport”):
- Keeps ownership of all assets leased,
- Get 1/100 share of joint ownership with NCG for all reconstructed and newly built assets
- Controls NCG activity in the frame of PPP agreement
- Hand back all the airport infrastructure after PPP-agreement term

Project Implementation – Public Private Partnership (DBFOT)

June, 2005 . “Pulkovo Airport” Development Project was included in the list of Strategic Projects of St. Petersburg .

2006 - Creation of Master Plan for “Pulkovo Airport” by German company Hochtief AG.

2006, 2008. Reconstruction of two runways ensured their compliance with the requirements of international standards.

September, 2007 100% Federal share package of Joint-Stock company “Pulkovo Airport” was transferred in ownership of the City St. Petersburg.

February – September 2007 – realization of international tender for Pulkovo architectural concept creation.

April 2008 – June 2009 - realization of international investment tender for development, reconstruction and operation of “Pulkovo Airport’s ” infrastructure.

30 October 2009 - signing of PPP agreement between the City, JSC “Pulkovo Airport” and the winner of the tender, “Northern Capital Gateway Ltd”(NCG)

April 2010 – PPP agreement coming into force with transferring all operation and development of “Pulkovo Airport” to NCG.

February 2011 – Choosing of general contractor for new terminal and other airport infrastructure construction

Implementing bodies:

- *St. Petersburg Government*
- *JSC “Pulkovo Airport”, 100% owned by the City St. Petersburg*
- *“Northern Capital Gateway Ltd.”- (NCG) , SPV set up by Consortium:*

Shareholders of Consortium:

VTB Capital 57,2%,  
Fraport AG 35,0%,  
Copelouzos Group 7,0%

General contractor: IC Ictas-Astaldi Insaat Anonim Sirketi, joint Italy-Turkey company

**Russia Moscow – St. Petersburg Toll Highway**

Concession agreement (DFBO) for the first section(15km–58 km) of the highway  
<http://www.msp-highway.com/>



**Project purpose:**

- relieve congestion on the current “M10- Russia” link between Moscow’s main airport Sheremetyevo International, and the city centre,
- reduce the number of road accidents due to higher quality and safety of the road ,provide automobilists’ time saving

**Project Implementation**

1971. Design for construction new Moscow – St. Petersburg motor way was elaborated, but not implemented in Soviet time.

2004. Decision of RF Ministry for Transportation “On construction of Moscow – St. Petersburg Toll Highway” was approved.

2007. Tender for the right to negotiate concession contract for the first section of the Moscow-Saint Petersburg toll motorway was announced.

July 2009. “North-Western Concession Company LLC”, (NWCC) was awarded the concession contract for the first section of the Moscow-Saint Petersburg toll motorway.

The contract covers: Design - Financing – Construction - Operation

April 2010. Financial closure was attained. Development of project site was started.

August, 2010. Construction works were stopped because of public disturbances, provoked by concerns about cutting down of trees in Khimkinsky Forest, and violations of endorsement procedures by officials responsible for preparation works.

Under pressure of public opinion and public organizations’ activity some changes were introduced in the project documentation. The area of cutting down the forest was reduced from 140 to 90 ha, some restrictions on building were set up, additional protective facilities were provided for the area of Khimkinsky Forest. Additional funds from Federal budget were allocated for rehabilitation of 500 ha of forests.

1 September 2011. After introducing above mentioned alterations in the project, and finalization of contractual details, works were resumed.

**Technical Characteristics**

Total length of the first section - 43,4 km

Five (four)-lane dual carriageway , including 5 multi-level flyover crossings, 5 bridges, and 32 other manufactured erections.

Daily vehicle density (estimation) 85 000 units  
 Payback Period (estimation) 20 years

Project cost: 66 bln. rubles (\$ 2,2 bln. or € 1,6 bln.)

Duration of construction period: 36 months

Duration of concession contract: 31 years

**Implementing bodies:**

- Russian Federation by the State Company “Rosavtodor”, former Federal Road Agency
- North-West Concession Company, LLC. “(NWCC) the winner of the tender, SPV established by Consortium of companies:

**Shareholders of Consortium:**

- “VINCI Concessions” Company 50% (French the world’s leading integrated concession-construction group )
- “N-Trans” group (Russia) 50%

General Contractor : « Mostotrest , JSC»

the biggest diversified Russian company, specialized in construction of bridges and roads, both motorways and railways, operates in 7 Federal Districts of RF.

Independent Technical Expert: “AECOM Russia, Ltd”, subsidiary of British “AECOM Technology Corporation”

**Model for financing**

*Federal Budget funds* (bln.rub.)

- Grant from Federal Investment Fund - 22,8

*Funds involved by Private Investor* (bln.rub.)

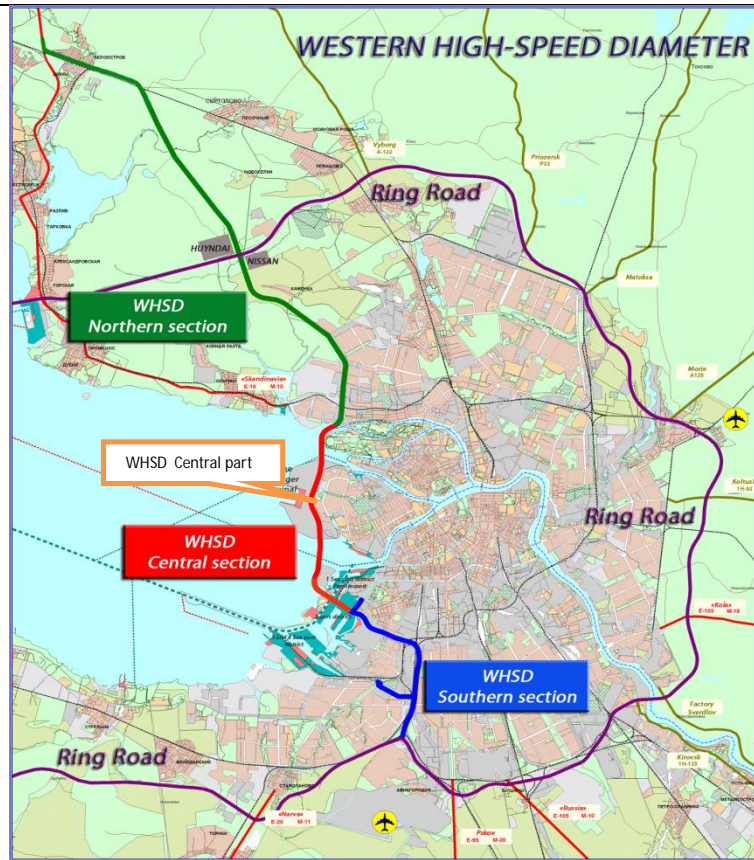
- Equity up to RUB 8,0 bn
- Syndicated 20 years credit up to RUB 29,2bn is granted by two Russian banks: “ Sberbank,Jsc” and the State Corporation “Vnesheconombank”(VEB)
- Bonds 10,0 bln.

20 years bonds with floating coupon rate were issued by NWCC under guarantees of Russian Government. As result of auction in 2011 coupon rate for the first coupon was defined as 11,15%

**Today’s status:**

During the 1-st year contractor “Mostotrest, JSC” has carried out 34% of earth-moving and construction works, it is in accordance with the schedule.

[www.whsd.ru](http://www.whsd.ru);



Technical Characteristics	
Total length of main road	46,6 km
Including	
South part	8,7 km
Central part	13,8 km
North part	24,7 km
Daily vehicle density	100 000 units
Speed .....	110 km/h
Number of interchanges	14
Overhead road part	55% of total length
Project cost: RUB 212,7 bn	
(US D 7 067 mln. or EUR 5 170 mln.)	
Budget breakdown ( from passport of investment project):	
• Federal Investment Fund	RUB 50,7 bn
• St. Petersburg budget	RUB 54,1 bn
Funds of Private Partner	
• Equity	RUB 16,1 bn
• Liabilities	RUB 91,8 bn
Project term	30 years
Implementation schedule (plan):	2004 - 2015

23 December, 2011 - signing of PPP agreement for building the central segment of the highway between the City, JSC WHSD and the winner of the tender, "Northern Capital Highway Ltd"  
20 December, 2012 -financial closure was achieved  
PPP model:

**Project purpose:**

- Relieve downtown traffic congestion in St. Petersburg ;
- Connect St. Petersburg transport node, including the Big Port with the net of Federal roads M-10 "Russia", M-11"Narva", E-18 "Scandinavia", M-20 "St. Petersburg – Pskov – Belarus"
- Speed up delivery of cargo coming to St. Petersburg port to consumers in different parts of Russia

Build-Finance-Lease-Operate-Transfer  
Implementing bodies:

- St. Petersburg Government ,
- "JSC WHSD," - the owner of WHSD,
- " Northern Capital Highway Ltd" (NCHW) the winner of the tender, SPV, established by Consortium of companies:
- JSC VTB Bank, (Russia),
- JSC Gazprombank (Russia),
- GPB Infrastructure Projects Ltd. (Cyprus)
- Astaldi S.p.A. (Italy),
- IC Ictas Insaat Sanayi ve Ticaret A.S. and
- Mega Yapi Insaat ve Ticaret Ltd. Sti. (Turkey)

**Project implementation :**  
The project was initiated by the Government of St. Petersburg in 1998, was approved by the Federal Government as a PPP project, and was included in the list of projects supported with a grant from Federal Investment Fund (Government Decree N 1708-p, 30.11. 2006)  
Building of Southern and Northern parts of WHSD 1998 – 2012

**Implementing bodies:**

- St. Petersburg Government
- "JSC Western High- Speed Diameter", Special Purpose Company, 100% owned by the City St. Petersburg (WHSD JSC) –

**Financial sources<sup>1)</sup>:**

**Financial sources for building stage<sup>1)</sup>:**

- Grant from Investment Fund RUB 50,7 bln.
- St. Petersburg Budget RUB 1,9 bln.
- Syndicated credit RUB 60,0 bln. from Banking Consortium (VEB, Gazprombank, VTB, EBRD and EDB)
- Equity +Subordinated credit RUB 9, 3bn

• St. Petersburg Budget and subsidies from Federal Budget RUB 51,4 bn

- 20 years coupon bonds, issued by "WHSD JSC" in 2011-2012 under guarantee of VEB Bank and Ministry of Finance RUB 25 bn.

**Models of project financing at the expense of budgets :**

- Contracting for building and other services up to2010
- Contribution into statutory fund of WHSD, JSC – 2010 - 2012,

**Financial sources for operating stage<sup>1)</sup>:**

- Users' payments (tolls)collected by Partner;
- Compensations from St. Petersburg budget to secure minimum level of income for Partner – RUB 9,6 bn/year and service of bonds issued by JSC WHSD;

**Today's status:**

- Southern part is fully set in operation
- Northern part is partly set in operation, (Expected completion - Spring, 2013)

<sup>1)</sup> [www.whsd.ru/raskritie-informazii/10/](http://www.whsd.ru/raskritie-informazii/10/) <http://gov.spb.ru/press/governor/27514/>;

**Russia “Marine Façade”– Marine Passenger Port of St. Petersburg for hosting passenger ferries and cruise ships**

Appendix XXXIII

[www.portspb.ru](http://www.portspb.ru)



**Technical Characteristics of the Port:**

4 terminals, 7 quays:  
 5 - for serving cruise ships,  
 1 – universal, both for cruise ships and ferries,  
 1 - for serving ferries  
 Total length of quay wall – 2 172 m,  
 Depth of water area – 10,7 m  
 Depth of the channel – 11 m  
 Capacity of Terminals’ buildings – 12000 pass/day  
 Maximum size of seagoing ships:  
 length - 330 m  
 width – no restriction  
 ship draught – 8,7 m

**Project purpose:**  
 There are 2 interrelated large-scale projects under common name “Marine Façade” in St. Petersburg.  
 The first one is a coastal territory development project, and its main goal is

- To form a new hydraulic-filled plot of land (476,7 hectare) in the water area of Finish Gulf for greenfield development. This parcel is designed for building up more than 4 mln. square meters of residential and commercial real estate.

The second one is a project of developing transport infrastructure. It aims

- to build up Marine Passenger Port (MPP) with modern complex of facilities for hosting large size passenger ferries and cruise ships in the North-West end of Vasiljevsky Island.

Both projects are realized under the guidance of private Management Company “Marine Façade, Ltd.”

**Project cost:** RUR 19559 mln.  
 (about USD 652 mln. or EURO 488 mln.)  
**Financial Sources:**

- Federal budget RUR 9 721 mln.
- Private investor RUR 9 874,3 mln.

**Implementation schedule :** 2005 - 2010

**Financial Sources and Models of Financing**

- Federal Budget Funds. Direct budget financing. Federal funds covered costs for dredging, construction of a new and reconstruction of the old sea channels, equipment of frontier pass points.
- Private Funds. Project financing. Private funds covered costs for land plot formation, construction and equipment of quays and terminal buildings.

**Project implementation:**  
 2002 - The decision on construction of a new passenger marine port in St. Petersburg was made by the Government of St. Petersburg.  
 2005 - Dredging, construction of a new and reconstruction of the old channel were started for the expenses of Federal budget.  
 2006 – The company “Terra Nova, Ltd.” was registered, and soon became a winner of the auction for the right to lease a land plot for development. Leasing contract was signed, the company was awarded with the title of a strategic investor of St. Petersburg. Formation of development area was started.  
 2006 –Goal-oriented Program of St. Petersburg “Implementation of the Investment Project on Developing Marine Passenger Terminal on Vasiljevsky Island in St. Petersburg” was approved by the Legislative Assembly of St. Petersburg (The Law of St. Petersburg №464-75, from 13.10.2006).  
 The Program defined a complex of activities, the volume of private investments and the schedule of building up constructions of MPP by the private Company JSC “Passenger Port of St. Petersburg Marine Façade” in 2006 – 2010, as well as the plan of financing step by step buy-out of the Company by the city St. Petersburg in 2008 – 2011.

**Funds involved by Private Investor:**

- Equity RUR 560,0 mln.
- Bank loans RUR 902,2 mln.
- Shareholder’s loans RUR 1063,8 mln.
- Convertible secured bonds RUR 7348,3 mln.

**Total** RUR 9874,3 mln.

- St. Petersburg Budget’s Funds were used for buy-out of the project company (mln.rub.).

**Buy out of convertible bonds:**

2008	RUR 1495,0 mln.
2009	RUR 3505,5 mln.
2010	RUR 4422,0 mln.
2011 Buy-out of common shares	RUR 914,2 mln.

Pay-off bonds by converting into common shares

2008, September 10 - Italian ocean liner Costa Mediterranea arrived the first to open a new port.

**Implementing bodies:**  
 St. Petersburg Government represented by:

- Committee for Construction,
- Committee for Finance,
- Committee for City Property Management,
- Private Company JSC “Passenger Port of St. Petersburg Marine Façade” (“Marine Façade”)

**Today’s status:**  
 JSC “Passenger Port of St. Petersburg Marine Façade” belongs the City of St. Petersburg, but is managed by private Management Company “Marine Façade, Ltd.”  
 Passengers traffic (passengers)

2009	– 250 000
2010	- 370 000
2011	- 405 200
2012	- 422 664




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