Belarus Infrastructure Monitoring (BIM)

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The work provides analysis of reforms in railway, road, telecommunication, gas and electricity sectors in Belarus in 2006.

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List of abbreviations

BNT – Belarusian Network of Telecommunications

BR – Belarusian Railways

CPI – Consumer Price Index

EBRD – European Bank for Reconstruction and Development

GET – German Economic Team

MDC – Mobile Digital Communication

MTS – Mobile Telecommunication Systems

PPI – Producer Price Index

Weights, measures and other abbreviations

tcm – thousand cubic meters

bcm – billion cubic meters

bn – billion

BYR – Belarusian ruble

eop – end of period

kW – kilowatt

kWh – kilowatt-hour

m – million

trn – trillion

USD – United States dollar

yoy – year-on-year

Contents

Foreword

This is the fourth issue of the Belarusian Infrastructure Monitoring (BIM). BIM was designed by the IPM Research Center, which is an independent research body, together with the German Economic Team in Belarus (GET). BIM is a tool used to assess the progress of structural reforms in key infrastructure industries and monitors annual changes in the infrastructure sector. The indicators developed within the BIM are intended both for monitoring the government's infrastructure policy and for research purposes.

The methodology used in BIM follows the concept of the Infrastructure Monitoring for Ukraine (IMU) of the Institute for Economic Research and Policy Consulting (IER) in Kiev, Ukraine.[1] This concept is based on the approach developed by the EBRD, which estimates infrastructure indices for all transition countries. Since 1998, these indices have been published annually in the EBRD Transition Report.

This report presents information on the restructuring of five infrastructure sectors of the Belarusian economy in a standardized manner, which allows for cross-industry comparisons. The monitored 21 indicators are qualitative and fall into three broad categories: (1) commercialization, (2) tariff reform, and (3) regulatory and institutional development. The aggregated index calculated on the basis of indicators presenting the status of the reforms in each sector at a given period.

A short summary outlines the major developments within selected sectors of the infrastructure. The second section provides arguments for establishing independent regulatory bodies in the infrastructure sectors. A general analysis of the Belarusian infrastructure policies is presented in the third section. This detailed review of the reforms in each of the five sectors includes not only ex-post analysis, but also an outline of the major challenges and prospects for future sustainable development. A description of the reform progress in each infrastructure sector supplements the numerical evaluation and provides a broader view of the situation. Appendices summarize the evaluation in tabular form and provide methodological explanations and detailed comments for each indicator.

[1] See www.ier.kiev.ua.

1. Summary

During the year 2006 infrastructure industries demonstrated a lack of substantial structural changes and resistance to introduction of market mechanisms. Regulatory framework in the road and transport sectors became slightly favorable, whilst remaining the same for the telecommunications sector. The situation in the natural gas and electricity sectors somewhat improved, but the sectors continued to be resistant to implementing market reforms in general.

The **railway sector's** index has not changed, remaining at the level of 1.4 with the railway operator Belarusian Railways preserving its monopoly status. The main change occurred in operation of the monopoly as Belarusian Railways has become a department of Ministry of Transport and Communication. Before that, the Belarusian Railways was a state holding and thus legally not regulated by the government. However, in practice this has not been the case. Hence, the fact that Belarusian Railways has become a department of Ministry of Transport and Communication has just legitimized the existing practice and not lead to the decrease of the overall index. There were no other changes in the ownership, operation, state financing, or the tariff setting procedure. The process of eliminating cross-subsidization, started in 2001, was continued in 2006.

The **road sector's** index has slightly increased from 1.7 in 2005 to 1.8 in 2006. In general, this sector had been the most reformed sector prior to 2003. In 2004 the situation for private passenger transportation companies became more difficult due to unclear licensing requirements, high import duties on buses, and restrictive technical requirements for buses. This resulted in a decrease of the index. 2006 was a year of a slow progress, such as slight improvement in transit legislation (abolishment of duty on transit on carriers, driving into the country according to the license of European Conference of Transport Ministers) and transport-forwarding legislation framework. As a result the volume of freight transportation has increased by 19% and export of transport services by 17%.

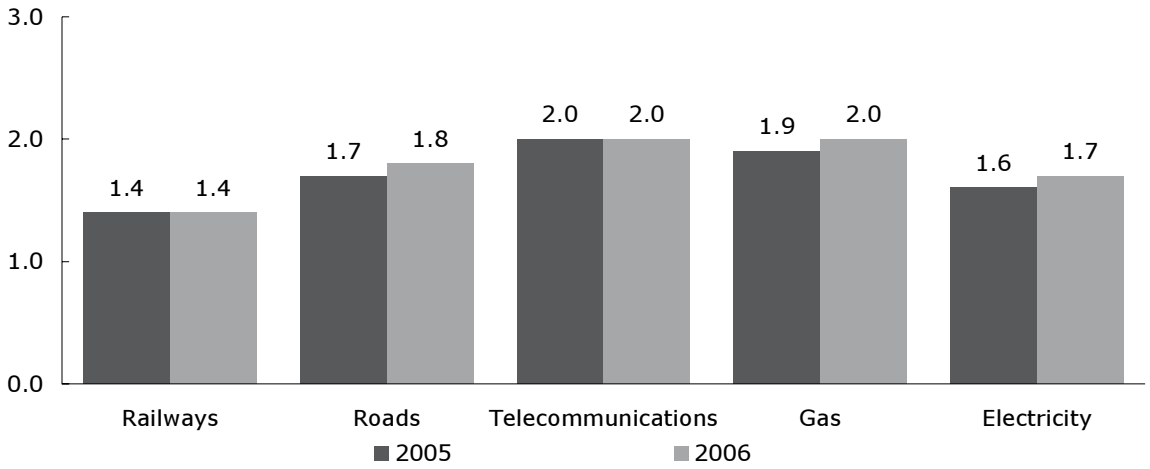
The **telecommunications'** index remained at the level of 2005 at 2.0. There were no significant changes in the sector's environment and operation with Beltelecom remaining the monopoly in the telecommunications sector. Minor developments in 2006 were primarily associated with an increased competition for customers in the mobile and the Internet access segments, and decreasing tariffs for these services. While not denying the possibility of Beltelecom's privatization and selling its shares of mobile operators, the government postponed these steps. Although the profitability of the companies in telecommunications sector in Belarus is relatively high, cross-subsidization in the landlines' segment and a high level of government's involvement in the companies' operations are hindering reforms and sustainable growth of the telecommunication sector.

In 2006 there were no considerable reforms implemented in the **gas sector**. Most households' tariffs remained at a below cost level. In addition, preferential tariffs for some industrial consumers negatively affected the financial standing of energy service providers. Improvement in payment discipline continued, although the debts of some consumers for the previous year's consumption are not fully repaid yet thus restricting possible investments in assets modernization. Gradual work on reducing debts of previous year's consumption and a slow opening of the sector determined the growth of the index from 1.9 to 2.0.

The ability to buy cheap Russian natural gas allowed to further delay any market reforms in the **electricity sector.** Similar to the previous year, some positive changes were made using administrative measures, such as maintenance of full and on time

payments for current electricity consumption. Whereas the company Belenergo liquidated external overdue debts, debts of the domestic consumers remain an issue for Belenergo. The cost coverage of household tariffs remained below costs at the same level as in 2005. The practice of setting preferential tariffs for selected industrial consumers was continued. Indeed, due to the improved payment discipline, the index grew from 1.6 in 2005 to 1.7 in 2006.

Figure 1
IPM Research Center's infrastructure reform indices for Belarus



Source: Own calculations.

2. Public Private Partnership

Introduction

The interdependence between economic growth and infrastructure development is widely recognized. However, in the face of a decline in public expenditures that is incident for most industrial and developing countries in recent decades, governments require the funds to finance new and maintain existing infrastructure in order to support long-term economic growth. The need to find alternative ways of infrastructure financing supports schemes promoting co-operation between the public and private sectors in providing public goods. This cooperation takes the form of Public Private Partnerships (PPP) arrangements, in which the functioning principles of private firms are implemented in public administration.

There are plenty of definitions of PPP ranging from the general opening of state activities to private sector competition through collaboration between the public and private sectors to joint ventures between a private and public body. In collaborations a public body engages a private company for a specific purpose, whereas the risk is shared in joint ventures. In summary, the key features of PPP can be characterized as a long-term partnership between the public and private sectors that usually involve the private sector undertaking investment projects which traditionally have been executed and owned by the public sector.[2]

At the same time, the emergence and proliferation of PPP schemes raises the questions regarding a country's success or failure in the attraction of investments in the form of public-private partnerships, applicability of the certain types of these arrangements in different industries, the determinants and extent of private sector participation, and the short- and long-term costs. Therefore, this paper aims at providing readers with some background information with regard to types and determinants of PPP, as well as lessons that can be drawn from United Kingdom, Central and Eastern Europe and the Russian experience. From there we identify challenges and opportunities for PPP development in Belarus.

Types of PPPs arrangements

The PPP initiatives should be considered not only as a means of financing public infrastructure but also as a powerful tool for generating cost saving schemes, improving the quality and efficiency of public services.

The European Commission (EC) identifies four channels through which the private sector in PPP schemes affects infrastructure development[3]:

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

[2] EIB (2005): Innovative Financing of Infrastructure: The Role of Public Private Partnerships: Lessons From the Early Movers. EIB papers, Volume 10, No 2.

[3] Davies, Steve and Fairbrother, Peter (2003). Private Finance Initiative (PFI) and Public Private
Partnerships (PPPs): Definitions and Sources. School of Social Science, Cardiff University , Working Paper Series, Paper 39.

In addition, the private sector may serve as a safeguard from economically unviable projects, as the underestimation of costs and overestimation of benefits is widely spread in public infrastructure projects. Estimation errors in the range of 50 percent or even more are the rule rather than the exception.[4] For example, in its first year of operation (1994-1995) of the channel tunnel connecting the United Kingdom and France the actual number of passengers was less than 25 percent of what has been predicted by *Service National des Chemins de Fer* (SNCF), the French owned railway company. In 2003, actual revenues from the tolls were only about a third of predicted levels.[5]

PPP may take a wide range of contractual forms depending on the mode of entry, ultimate ownership, risk sharing, and duration of the partnership (see Table 1). Nevertheless, they can be categorized into four main types:

Greenfield projects imply a private company or a public-private joint venture building and operating a new facility for the project period indicated in the contract. It then either transfers it to the government or remains with the company under predetermined conditions.

The most common contractual forms of a *greenfield* project are[6]:

- In a Build Own Operate Transfer (BOOT) project the private entity carries out the capital investment in building of the facility. It then owns and operates it for a period specified in the contract. Following expiration of that period all assets are returned to the public sector.
- In a Build Own Operate (BOO), and Build Lease Own (BLO) contract, a private entity is responsible for the financing and operation of the project. Unlike to the BOOT it becomes the owner of the facility and is not required to hand it back to the government. However, economic activities of a private entity as an owner may be subject to regulatory constraints on operations, pricing and etc.

These contractual forms are characterized by the long term period of operation (30 years and more), therefore a private entity has an incentive to build a facility of good quality, to keep it in good condition and optimize maintenance costs. This type of project presupposes that all market risk associated with production construction and operation costs is shifted to the private sector.

A *divestiture* presupposes that assets, operations and investment obligations are transferred to the private operator. According to this type of contract the asset can transferred in part or full. The private entity may acquire equity of a state-owned enterprise through an asset sale, public offering, or privatization. Most commonly it requires the provision of government guarantees for future tariff increases to achieve full costs recovery or return on capital invested.

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[4] Prud'homme, Remy (2004). Infrastructure and Development. Paper prepared for the Annual World Bank Conference on Development Economics, Washington.

[5] Sadka, Efraim (2006): Public-Private Partnerships: A Public Economics Perspective. IMF Working Paper, WP/06/77.

[6] For a more detailed description of other PPP models see: Nijiru, Cyrus, Merna, Tony (2002). Financing Infrastructure Projects, Thomas Telford, Technology & Industrial Arts 304 p. and Walker, Charles T., Smith, Adrian J. (1995). Privatized Infrastructure: The Build Operate Transfer Approach, Thomas Telford, 304 p.

Table 1:
Characteristics of Main Types of PPPs

Types of PPPs	Acronym	Mode of Entry	Operation and Maintenance	Investment	Ultimate Ownership	Market Risk	Duration (years)
Build, Own and Transfer	BOT	Greenfield	Private	Private	Semi-private	Private	20-30
Build, Own, Operate and Transfer	BOOT	Greenfield	Private	Private	Semi-private	Private	30+
Build, Own and Operate	BOO	Greenfield	Private	Private	Private	Private	30+
Build, Lease and Own	BLO	Greenfield	Private	Private	Private	Private	30+
Partial Privatization		Divesture	Private	Private	Private	Private	30+
Full Privatization		Divesture	Private	Private	Private	Private	Indefinite
Rehabilitate, Operate and Transfer	ROT	Concession	Private	Private	Public	Semi-private	20-30
Rehabilitate, Lease/Rent and Transfer	RLRT	Concession	Private	Private	Public	More-private	20-30
Build, Rehabilitate, Operate and Transfer	BROT	Concession	Private	Private	Public	Private	20-30
Management contract		Contract	Private	Public	Public	Public	3-5
Leasing		Contract	Private	Public	Public	Semi-private	8-15

Source: Thomsen (2005), OECD Secretariat, World Bank's PPI database, and authors' assessments.

With a *concession* a private operator takes over the operation and maintenance of a facility based on lease for the contract period, during which the investment obligations in new equipment or the replacement of the existing infrastructure are required. Thus, commercial risks are imposed completely on the private sector with ownership remaining with the government. Therefore, the tariff level becomes less crucial, as it can be compensated by lower lease payments for the assets, but revenues should be sufficient to cover long-term costs of services and to attain a reasonable return. The most common contractual forms are Rehabilitate, Operate and Transfer (ROT), Rehabilitate, Lease/Rent and Transfer (RLRT), Build, Rehabilitate, Operate and Transfer (BROT). All of these are the long-term contracts which include a detailed list of investment and service obligations.

Management and outsourcing contracts is the simplest form of PPP that does not include any investment obligations. The ownership and investment decisions remain with a public entity while the private company is responsible for management only. Thus, only the operational risk is transferred to the private company by a lease contract. This type of contract for a service is important when it is difficult to attract private investment given the tradition of pricing below costs, and government being reluctant to set a cost-covering tariff (district heating). Management and outsourcing contracts can improve labor productivity, increase operating performance and standards of services, but also have some drawbacks compared to deeper forms of private

participation. As a rule they are short term, and might not lock in improvements in efficiency and productivity.[7]

Another type of PPP arrangements is the French model which has many similarities with the above mentioned forms of the PPP (See Box 1).

According to the World Bank's Private Participation in Infrastructure (PPI) database on projects for developing countries the prevailing type of PPPs to date appears to be the Build Own Operate (38.9 percent of all projects), followed by Build Own Transfer (17.9 percent) and Build Rehabilitate Operate-Transfer (13.2 percent). Jointly, these three represent 70 percent of all projects signed in 1990-2003 (See Figure 2).

Box 1: French model of PPP arrangements

Delegated management (*"gestion déléguée"*) is a system where the delivery of a public service is assigned to a third party. The term "delegated management" applies to a contract concluded for the delivery of a public service, where the remuneration of the delegatee is largely dependent on operating results, and where management of the service is entrusted to a legal entity. This can be a private company, individual, local semi-public company, association, another local authority or a public corporation not controlled by the delegating local authority.

Concession in the strict sense (*"concession"*) is when the private company has complete responsibility for operating the system, making the necessary investments in the infrastructure, and takes responsibility for financing them at its own risk (*"à ses risques et périls"*).

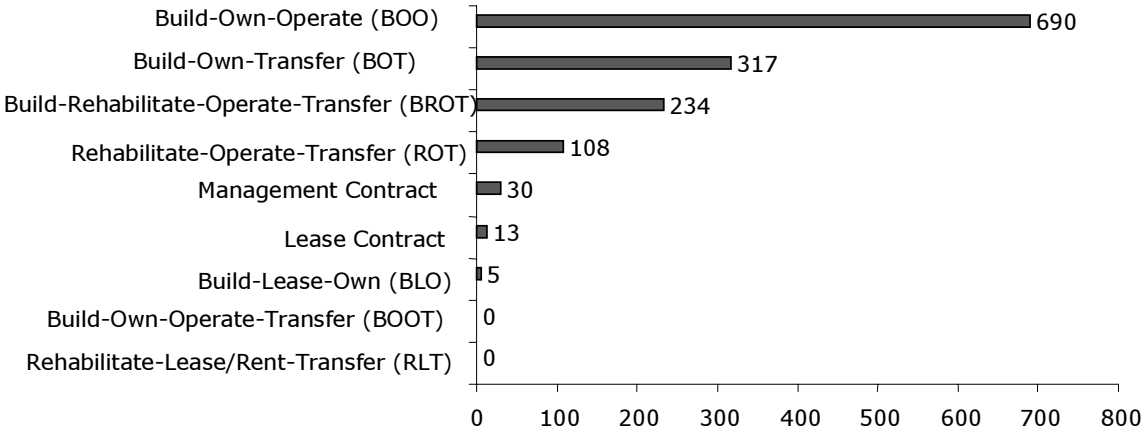
In an ***operating concession*** (*"affermage"*) the private company has to operate the business and carry out maintenance at its own risk, depending on revenue from charges – but the commune remains the owner of the infrastructure, and is responsible for investment in the system.

A ***management contracts*** (*"gérance"*) pays a flat fee to the company for managing the system, without taking on any responsibility or risk for investments.

In practice, the technical distinction between *"concessions"* and *"affermages"* is of great significance with respect to rules on public finances and tendering. According to the French state audit office (*"*Cour des Comptes*"*) rules on public works contracts (*"Code des marchés publics"*) do not apply to contracts as a concession in the strict sense. Works contracts do not have to be tendered.

Source: Davies, Steve and Fairbrother, Peter (2003): Private Finance Initiative (PFI) and Public Private Partnerships (PPPs): Definitions and Sources. Working Paper 39, Cardiff University.

Figure 2
Number of Projects by Types of Contract



Source: Hammami, Mona, Ruhashyankiko, Jean-Francois, and Yehoue, Etienne B (2006): Determinants of Public-Private Partnerships in Infrastructure. IMF Working Paper, WP/06/99.

[7] EBRD (2004). Transition Report 2004, Infrastructure .

Determinants of PPP arrangements

It is widely recognized that public goods are characterized by externalities and market failures in consumption. Therefore, the state should in some way keep control on public service delivery. On the other hand, private firms operate profit oriented and will not be willing to enter in public infrastructure independently unless adequate safeguards are put into place in order to reduce the commercial risk and to recover the costs.

PPP arrangements were signed in the United Kingdom in the early 1980s within the framework of New Public Management initiative. At that time public investment had declined from 5 percent of GDP in the early 1970s to 2 percent of GDP by the early 1980s. The result of which was the so-called infrastructure gap between what government could afford and what people need. The main goal of the PPP initiative was to allocate the necessary resources to infrastructure, to increase the efficiency of the provision of services, to improve the management of public enterprises through introduction the functional principles of private firms and opening up this market for competition. Over the past five years the share of PPP in the UK has reached 15—25 percent of total public investment.[8] Today, governments in industrial and developing countries regard PPP as alternative or complementary ways of financing and managing infrastructure projects. Therefore, it is important to identify factors favorable for PPP and the public services for which these arrangements are the most applicable.

Based on the analysis by IMF using the World Bank's Private Participation in Infrastructure (PPI) database the determinants of PPP can be divided into four groups[9]:

Public finance and state budget

In general, PPP is more likely to be initiated in a country where government has a heavy debt burden, large state budget deficits and therefore, has to cut public expenditures. On the contrary, countries with large sources of exogenous revenues available and soft budget constraints have less reason and need for opening state activities to the private sector.

Macroeconomic conditions

Governments with a credible, predictable macroeconomic policy engendering economic growth based on low inflation and stable exchange rates are more successful in the development of Public Private Partnership as a means of financing public infrastructure. Since infrastructure projects usually require substantial investments, the private sector will engage in PPP only when generating revenues over the time period are sufficient. Therefore, stable macroeconomic conditions are of crucial importance as an indication of adequate tariff regimes and project profitability.

Moreover, PPP projects in developing and emerging market economies are generally supported by multilateral development agencies: the International Finance Corporation (IFC), followed by the World Bank (through the Multilateral Investment Guarantee Agency (MIGA)), the International Bank for Reconstruction and Development (IBRD), the Inter-American Development Bank (IADB), the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB). All these international organizations put liberalization, favorable conditions for investments and

[8] According to the World Bank estimates about 20 percent of infrastructure investment in developing countries comes from private sector through PPP. (World Bank, 2002, "Building Institutions for Markets," *World Development Report 2002*, Washington: World Bank, Chapter 8 on Regulation of Infrastructure, pp. 151–67).

[9] Hammami, Mona, Ruhashyankiko, Jean-Francois, and Yehoue, Etienne B (2006): Determinants of Public-Private Partnerships in Infrastructure. IMF Working Paper, WP/06/99.

macroeconomic stability as preconditions for financing and launching PPP projects under their umbrella.

Market size

Market size is an influential determinant of private sector participation in PPP as demand and purchasing power is essential for cost recovery. In general it can be noticed that the bigger the market, the more likely private entity engagement in PPP.

Institutions

PPP tend to be more common in politically stable countries with strong and effective institutions and legal code protecting investors' rights.

In addition, successful previous PPP experiences positively affect the incentive of private participation in Public Private Partnership.

The nature of public infrastructures, capital intensity, required technology, and risk sharing between the public and private partners govern the extent of private participation in PPP projects. Table 2 provides an overview of infrastructure services depending on appropriateness and attractiveness for PPP. Since the private sector is guided by profit motives PPP may not be suitable for sectors where public safety is the major concern, operating is expensive, marketability of services is low. Accordingly, the most optimal areas for private sector participation are water and waste, roads, bridges and tunnels, telecommunications.

Table 2
Expectations about the sectoral distribution of PPP

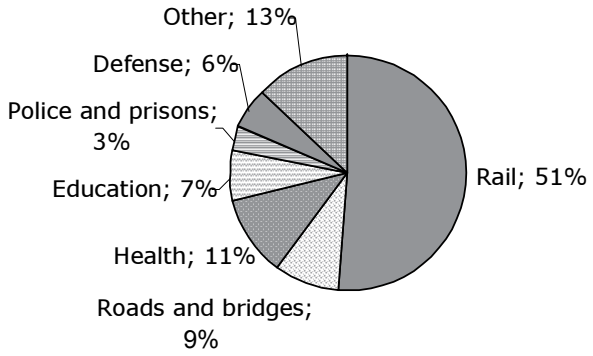
Probably No	Yes	Maybe
Police and prisons	Roads	Railway networks
Defense	Bridges	Air traffic control
	Tunnels	Education
	Water & waste	Health
	Telecommunications	

Source: Own assessments based on Riess, Arnim (2005): Is the PPP model applicable across sectors? EIB papers, Volume 10, No 2.

However, the experience of the United Kingdom suggests that even for infrastructure sectors commonly considered as inapplicable for opening to private sector (i.e. police, prisons, and defense) it appeared possible to provide such public goods by private—for-profit and not-for-profit—firms. This implies that even for the sectors which may seem too weak to be contenders for private investments and in which safety is of particular importance government managed to create a powerful incentive mechanism for the emergence of PPP (See Figure 3). At the same time, the public body placed adequate safeguards against adverse service quality effects.

The largest share of PPP investments in EU countries is rail roads (46 percent) and roads (35 percent), followed by energy (7 percent) and airports (6 percent). Financing of education and health are lagging behind (3 percent each). However, PPP projects in developing countries are mainly carried out in the energy (41.2%) and transport sectors (27%) followed by followed by telecommunications (22%) and water (9.8%) (see Table 3). The most common type of PPP in energy and telecommunication sectors is Greenfield investments; while in transportation and water sectors mainly concessions are used.

Figure 3
PPP by sectors in the UK, 1987-2004



Source: Riess, Armin (2005): Is the PPP model applicable across sectors? EIB papers, Volume 10, No 2.

Table 3
Number of Projects by Industry Sector and Mode of Entry

Industry sector	Total number of projects	Concession	Divestiture	Greenfield	Other mode
Energy	1116	45	428	626	17
Telecommunications	600	8	113	477	2
Transportation	735	406	58	226	45
Water	261	110	20	81	50
	2712				

Source: Calculation provided in IMF working Paper, WP/06/99 based on World Bank's PPI database

Experience with PPP in CEE and Russia

CEE countries experience

The breakdown of the socialist system in early 1990s resulted in bankruptcy of infrastructure and high debts in CEE countries facing the necessity to find a way of financing of infrastructural projects in order to reduce of the infrastructure gaps with Western Europe.[10] This situation forced governments of these countries to privatize or to engage in PPP. It should be mentioned that European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD), and the World Bank highly supported this idea and provided favorable lending conditions for such projects. According to rough estimations the above mentioned international organizations have jointly invested about EUR 35 billion in infrastructure development of eight CEE countries to this day.

The World Bank's PPI database contains information on 217 PPP projects carried out in CEE countries by 2003. Hungary is on the top of the list with 42 projects and investment commitments amounting to EUR 17.4 billion, followed by the Czech Republic (46 projects, EUR 16.4 billion), and Poland (35 projects, EUR 18 billion). These three countries account for 71% of total PPP investments in CEE countries. The sectoral distribution of financing confirms the fact that attractiveness of different infrastructure sectors for PPP varies considerably. The largest share of investment (69 %) went to

[10] According the EC and EBRD estimations the investment needs for the sectors of infrastructure amounted to more than EUR 500 billion by the mid 1990s. (Brenck, Andreas, Beckers, Thorsten, Heinrich, Maria, von Hirschhausen, Christian (2005): Public-private partnerships in new EU member countries of Central and Eastern Europe. EIB papers, Volume 10, No 2.

telecommunications, and reflects the high profit expectations from the side of private sector and minor needed engagement due to deregulation from the side of public sector. The total number of PPP projects was in telecommunications amounted to 71. The energy sector follows with 57 projects in electricity and 17 projects in natural gas. However, the financing of this sector was seriously lagging behind and constitutes 23.6 % of the total investments only. The share of financing of other sectors, such as toll roads, water, and some other accounted for 7.4 %.

The distribution of investments by PPP category shows the dominance of 'divestiture', with 63.9 % of total amount of financing, and nearly half of all projects. Nearly all projects in the energy sector were released through this type of Public Private Partnership and in telecommunications divestiture accounted for more than 50 % of the PPP investments. The share of 'greenfield' type partnership is 29.5 % in total amount of projects and 31 % in investments. The contribution of two other categories, i.e., concessions and management contracts is only 5 % of investments. Toll roads with six projects cover 3.2% of investments, while the share of water and sewerage with 20 projects is 1.8% of investments.

However, the considerable hope that was placed on PPP in CEE countries did not materialized fully. Despite the fact that, due to the backwardness and the urgent need for financing, water and sewage have been prime targets for PPP in CEE countries and international organizations provided the support trying to transfer international best practice, the overall impact has been lower than expected, and the projects in this sector faced difficulties right from the start given the low commercial value. Some projects in water sector were even taken off, e.g. in Budapest, Sofia, and Tallinn.

In general, the first attempt to institutionalize PPP as a key instrument for infrastructure financing of CEE countries were less successful than in other countries and than initially hoped for, mainly due to the ***lack of effective institutions, shortcomings in macroeconomic policy, and unrealistic demand expectations***. Yet, in the context of EU accession CEE countries substantially improved institutions over the last years, and, hence, created a more fertile ground for PPP in the future. Countries now are entering into the second generation of PPP projects that most likely will be more efficient.

Russia

A significant range of the issues which local authorities in Russia face nowadays generates a need to look beyond traditional funding alternatives and attract private sector in delivery and financing of local infrastructure projects aimed at improvement of the urban infrastructure. Taking into consideration that creation of the supportive legal framework is crucial for PPP development the special legislation necessary for implementation of infrastructure projects was established: for concessions it is the Federal Law *"On Concession Agreements"* (July 21, 2005), lease and investment agreements are governed by *"Civil Code of the Russian Federation"* already in place, management and procurement contracts are regulated by the *"Civil Code"* and the Federal Law on *"Placement of Orders for Procurement of Goods, Performing Works, Rendering Services for State and Municipal Needs"* (July 21, 2005).

PPP agreements have been used in Russian infrastructure as follows:

Private operations of municipal utilities:

- Water (Renova-Russia Utility System, Eurasian Water Partnership, Alfa-Rosvodokanal, Interros-Novogor)
- District heating (Renova-Russia Utility System, Interros-Novogor, Basel-Russian Utility Investments, UES subsidiaries)
- Electricity Distribution (local private operations, Renova-Russia Utility System, Interros-Novogor, UES subsidiaries)

- Private operators of airports (Basel Infrastructure – Krasnodar, Gelendzhick, Krasnoyarsk, East Line – Domodevo, Vnukovo TZK –Vnukovo, Alfa Eco, National Reserve Bank)

Today, Russia witnesses an increasing provision of public goods by PPP arrangements. This process is driven by the transformation of public entities into commercial enterprises, e.g. major municipal utilities (water, district heating, public transport, gas) are to be corporatized in Moscow; electricity reform, which increases the role of municipal councils and their willingness to enter in district heating concessions, co-generation BOT projects; devolution of responsibilities for hospitals, schools and colleges to local authorities.

However, there remain obstacles restraining the entering of private investments through PPP. First, public authorities do not have sufficient funds and expertise for preparation of long-term investment programs, thus leading to the lack of well-developed projects, which might be interesting for PPP. Second, since public property is not adequately registered quite often significant up-front investments are needed to settle the differences in order to make it work within a PPP. Third, there remain problems with risk sharing and coverage in PPP. Fourth, the shortcomings in regulation (insurance, tariffs, and etc.) create some additional barriers to proliferation of PPP.

Conclusions

International experience suggests that co-operation between the public and private sectors can be a powerful incentive for improving the quality and efficiency of public services, and a mean of public infrastructure financing. Depending on the mode of entry, ultimate ownership, risk sharing, and duration of the partnership PPP's may take a wide range of contractual forms that can be combined into four main types: Greenfield, divestiture, concessions, and management contracts.

The most common contractual forms of PPP are a *greenfield* and more specifically Build Own Operate Transfer (BOOT) and Build Own Operate (BOO) projects. That is a private entity makes the capital investment in building of the facility, and then owns and operates it for a period specified in the contract. These contractual forms are characterized by the long term period of operation (30 years and more), therefore a private entity has an incentive to build a facility of good quality, to keep it in good condition and optimize maintenance costs.

Governments in industrial and developing countries regard PPP as alternative or complementary ways of financing and managing infrastructure projects. Therefore, it is important to identify the factors that are favorable for PPP's. An analysis carried out by the IMF using the World Bank's Private Participation in Infrastructure (PPI) database revealed that countries that following a market-oriented policy and with a credible, predictable macroeconomic policy that engender economic growth based on low inflation and stable exchange rates are more successful in the development of Public Private Partnership as a means of financing public infrastructure. The finding also suggests that PPP's are more likely to be initiated in a country where government has heavy debt burden or a large state budget deficit and therefore, has to cut public expenditures. Moreover, PPP's tend to be more common in politically stable countries where institutions are strong and effective and the legal code better protects investors' rights.

Market size is an influential determinant of the private sector participation in PPP as both demand and purchasing power are essential for cost recovery. The bigger the market the more likely a private entity is engaged in PPP.

Since the private sector is guided by profit motives, PPP's may not be suitable for sectors where public safety is a major concern, operating is expensive, marketability of services is low. Accordingly, the most optimal and commonly observed areas for private sector participation are water and waste, roads, bridges and tunnels, telecommunications.

3. Belarusian infrastructure policies in 2006

Despite some macroeconomic progress, market oriented structural reforms are still not on the government's agenda in Belarus. Restructuring and privatization of enterprises, and the establishment of a regulatory framework independent of political interference, are no priorities for the government. The general impression that emerges from analyzing the five infrastructure industries in this report (roads, railways, telecommunications, gas and electricity) is a lack of significant changes in the regulatory framework (Figure 4).

Reforms in the **transport sector** remained inconsecutive. No attempts were made to reform Belarusian Railways, a monopolistic railway operator and service provider. Furthermore, the company was reorganized from a state holding company into a department of Ministry of Transport and Communication. By contrast, the automobile transportation is more open to competition. Still, state-owned providers of road transportation services largely have not been privatized and generally received more favorable treatment than their private competitors. High import duties on vehicles hampered development of the freight transportation market. However, a slight improvement in environment for transit via Belarus led to increased export of transportation services.

The government interference in the activity of the **telecommunication sector** preserves. Although the government takes nominal steps in bringing the legislation in the sector towards international standards (WTO in particular), the actual regulatory framework remains the same. Beltelecom operates as a national monopoly in telecommunications. There are no definite plans for privatization and corporatization of the national operator or the creation of an independent regulator.

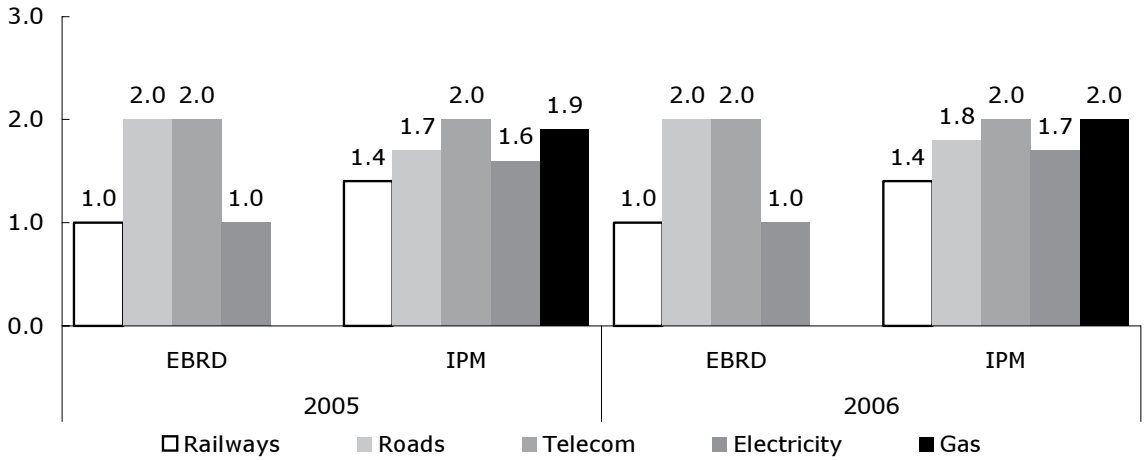
The energy sector (both natural gas and electricity) does not show noticeable progress in implementing market reforms. Slight improvements in payment discipline have occurred. By the use of administrative measures, all current consumption of imported natural gas and electricity is paid on time and mainly in cash. External overdue debts were paid off and current debts for energy consumption were significantly reduced. For internal payments, non-monetary payment schemes constituted less than 3% of total payments. However, the government did not manage to completely eliminate the practice of soft budget constraints and non-payments.

The practice of tariff setting was somewhat contradictive. The tariffs for natural gas for households exceeded the costs while cross-subsidization for liquefied natural gas and electricity remained at the same level as in the previous year. In both sectors the preferential tariffs for some industrial enterprises and incomplete compensation to the service providers by the state for servicing certain household groups at preferential tariffs negatively affect the financial results of the energy enterprises, thus restraining investment in new equipment and technologies.

There are only minor differences between the EBRD and RC IPM indices (Figure 4). Due to more precise scale used by RC IPM the indices of reforms in railway and electricity sectors are higher than those of EBRD, while reforms in the road sector despite some increase receive a lower grade. Both EBRD and RC IPM experts did not find much progress in implementing reforms in any sector of the Belarusian infrastructure, and neither up- nor downgraded the indices relative to 2006.

Despite some divergence of opinion, the EBRD and RC IPM indices do not conflict with each other.

Figure 4
Infrastructure reform indices for Belarus



Sources: EBRD (2005): Business in Transition, Transition report 2005; EBRD (2006): Finance in Transition, Transition report 2006; IPM RC estimates.

3.1. Railways

3.1.1. Progress in 2006

The most significant event in 2006 was a transfer of the Belarusian Railways to the control of Ministry of Transport and Communication. Thereby the ministry tends to become rather a regulating institution than an economic one. The Belarusian Railways remains a sole operator and provider of transport services. From 2006 Belarusian Railways (BR) has taken part in the creation of a joint venture "Eurasia Rail Logistic" with Germany, Poland and Russia on providing forwarding services. The joint venture will simplify transit through this corridor and thus increase freight traffic.

The structure of BR remained unchanged. It is still engaged in many non-core activities including 39 healthcare and education institutions and some sport, cultural units and farms. This implies that a substantial part of the revenues, gained from transportation services, is spent on financing non-core activities.

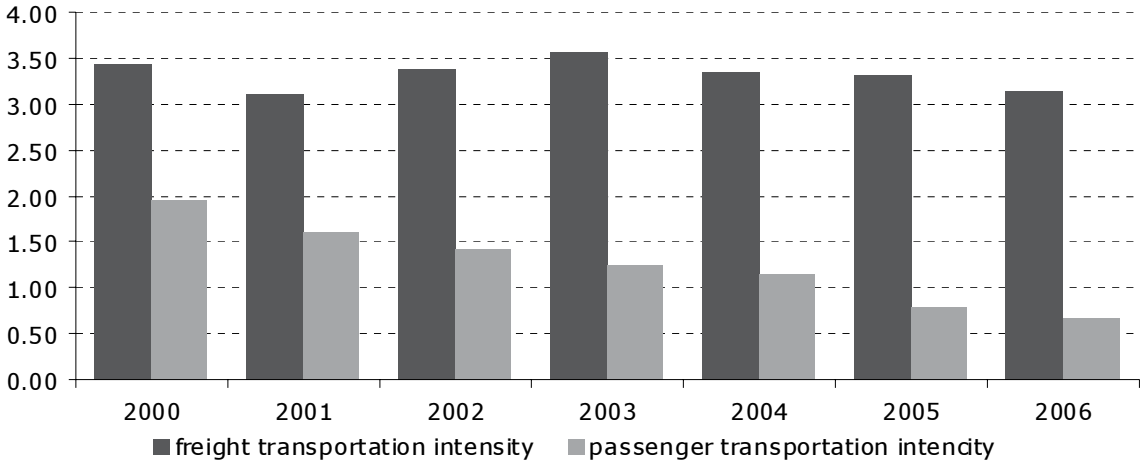
Despite the fact that freight traffic grew by 4.8% in nominal values, its intensity has fallen by 4.7%.[11] This can be related to the fact that railway loses its attractiveness in comparison to automobile freight transportation. The volume of passenger traffic has decreased by 3.6% and its intensity by 12.3%. Intensity of passenger traffic in general has fallen more than in 2.8 times since 2000 (Figure 5).

Reduction of passenger traffic was caused mainly by the tariff growth. It refers mainly to passenger transportation in suburban commuting. In 2006 suburban tariffs grew by 20.4%, while service prices increased by 13.2% and consumption prices only by 7.0% (Table 4). The trend of accelerated growth of passenger tariffs can be observed during the whole period. Due to the high elasticity of demand on passenger freights this led to a decrease in solvent demand on them. Tariffs still cover only 35–37% of costs of internal passenger transportation. International tariffs also remarkably grew by 17.3% in 2006.

[11] Freight traffic intensity is measured as a share of freight volume to GDP in real terms (tonne-km per 1000 BYR of 2000). Passenger transportation traffic intensity is measured as a share of passenger traffic volume to GDP (passenger km to 1000 BYR of 2000).

National and international freight tariffs in 2006 grew by 9.3% and 14.4% respectively. These rates correspond to the inflation rate in Belarus (Table 4). Earlier, especially in 2002–2003, freight tariffs grew slower then service prices in general. Such dynamics, of accelerated growth of passenger tariffs and slower growth of freight tariffs, imply the reduction of cross-subsidization between them.

Figure 5
Railway transportation intensity, units-km per 1000 BYR of 2000



Source: Own calculations.

As a result, the environment of railway transportation has improved since 2000. This can be shown for the dynamics of traffic mix proportion of passengers and traffic density.[12] The share of passenger transportation in 2006 has decreased to 17.9%, i.e. more than twice since 2000 (Figure 6). It is considerably lower than in countries of Central and Eastern Europe, but higher than in other CIS countries. Traffic density increased by 3.2% and has reached 12.9 mln units per km. Only Russia among all countries of CIS and CEE has a higher density rate.[13] As a result, this guarantees lower fixed costs, related to maintenance and operation of railway network.

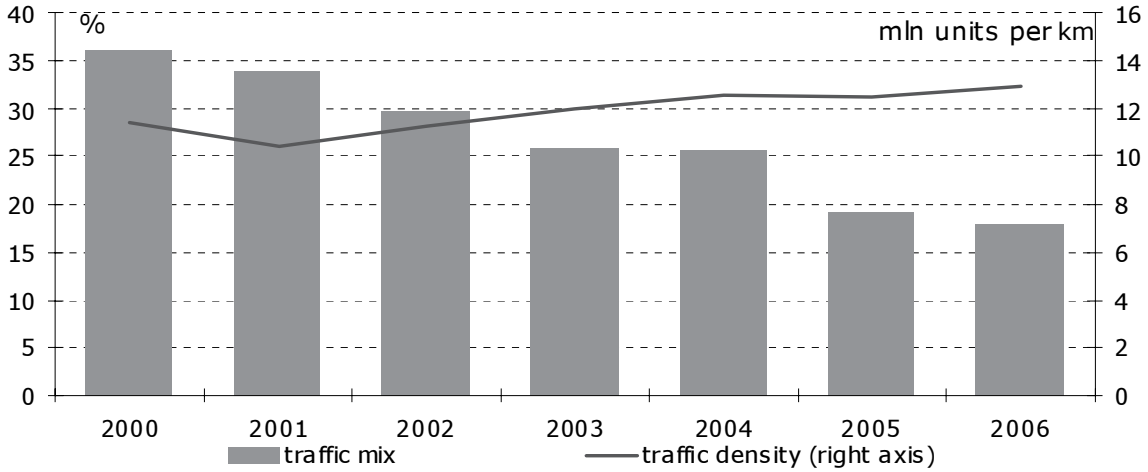
Table 4
Price indices of railway transportation services, yoy

	2001	2002	2003	2004	2005	2006
Freight transportation						
international	230.5	118.2	117.6	107.1	106.2	114.4
domestic	207.8	139.2	135.5	157.5	113.0	109.3
Passenger transportation						
international	183.7	140.2	132.4	151.5	112.1	117.3
national	251.4	197.4	141.7	117.0	109.5	111.3
suburban	269.2	202.9	162.0	134.8	120.0	120.4
Consumer price index	161.1	142.6	128.4	118.1	110.3	107.0
Service price index	216.8	193.4	161.9	121.2	112.0	113.2

Source: Ministry of Statistics and Analysis.

[12] Traffic mix characterizes the share of passenger traffic in total traffic (sum of passenger and freight traffics).
[13] See Amos, P. (2005): Reform, Commercialization and Private Sector Participation in Railways in Eastern Europe and Central Asia. The World Bank Group Transport Paper No. 4, p. 2.

Figure 6
Trends in railway transportation environment



Source: Own calculations.

3.1.2. Reform agenda

Belarusian Railways functions in a relatively favorable environment that is characterized by high volumes of energy resources transit from East to West and a reduction of passenger transportation. As a result it guarantees high profitability of railway transportation in general (17%), but the sector needs ongoing reforms for further development.

The most acute problem faced by railways is an abolishment of cross-subsidization between passenger and freight transportation. This can be achieved by forcing passengers to cover a greater share of costs and at the same time providing the most sensitive (to an increase in railway tariffs) part of population with direct income compensation. Another important reform issue is an abolishment of all no-core activities and splitting of core activities into separate lines of business. The enterprise should be freed from the burden of social support and be able to persuade efficiency of operation as its primary goal. Division of Belarusian Railways into several enterprises dealing with passenger transportation, freight transportation and infrastructure operation will promote separation of profitable lines of business from unprofitable ones. The government should take the burden of subsidizing the last ones.

The following steps should be taken to carry out the reforms:

- Initially, Belarusian Railways should pass its social infrastructure holdings such as housing facilities, hospitals and kindergartens to the state or local governments. Production plants, farms and service companies should be separated from the company;
- The state should create a clear regulatory framework by separating regulation from the economic activities of the railways. This can be achieved by creating an independent regulator for the sector. Such an independent regulator would ensure that investment and other decisions are not influenced by the concerted interests of the consumers of transportation services or by railway construction companies. Later on it should also regulate access to the market of private carriers and forwarding companies. A transparent tariff setting policy, which would not be influenced by Belarusian Railways, should be the responsibility of the regulator;

- Finally, economic activities in this sector should be divided into separate companies. Initially these companies should form a holding. Then, after a suitable regulatory framework is in place and incorporation has occurred, it will be possible to consider privatization of the sector.

3.2. Roads

3.2.1. Progress in 2006

The main event in the road sector was the adoption of the "Belarus Roads" program for 2006–2015. It proclaims modernization of international transport corridors as its main goal. It includes improvement of load-carrying ability to 11.5 tonne on an axle, construction of bypasses of 12 cities and improvement of road-service quality by raising the evenness rate to 3.6 m/km.

All road programs are financed through the Road Fund. In 2006 it accumulated BYR 1667.7 bn or 2.1% of GDP (2.3% in 2005). The greatest contribution to the fund was made by the turnover tax on road users (58.4%) and fuel excises (35.3%). At the same time only 35.2% of fuel excises were accumulated in road fund. Other taxes and duties, including duty on transit through territory of Belarus by foreign carriers, tax on auto purchasing, revenues from toll road M1/E30 and others, constituted only 6.4% of the Road Fund.

The revenues of the Road Fund amounting to 2% of GDP are considered sufficient for developed countries, but it is not the case for transition economies. Besides, in 2006 20.3% of the fund was spent on agricultural issues not related to the road industry. As a result only 32.4% of the main roads are in good conditions, while 50.2% are in fair and 17.4% in unsatisfactory. Such ratios are also observed in Latvia and Lithuania but at the same time roads capital non-repair rose from 51% to 56% (for main roads in particular from 67% to 82%).[14] The program also includes the construction of more than 600 roadside service objects in order to enhance transit potential and raise attractiveness of Belarusian roads. However, it will have to be financed on budget costs. Private companies are not interested in investing into roadside service as it is unprofitable. This business can be efficient only if traffic density amounts to 8,000 vehicles a day, and at the busiest M1/E30 road average traffic density is about 6,000 vehicles a day. Low traffic density also slightly constrains opportunities for private-public partnership in building and operating toll roads. In case of constructing new road profitability can be achieved based on a traffic density at about 10,000 vehicles a day, and 6,000 vehicles a day in case of concessionary agreement.

Low traffic intensity can be partly explained by the high density of roads per capita. There is a strong correlation between level of GDP per capita and paved road density per million inhabitants. Their ratio is usually around 1:1.[15] In Belarus the ratio is 1:1.9 (road density is 7,307 km per mln inhabitants and GDP per capita is 3806 USD). However this index does not take into account quality of the road surface.

Growth of the traffic intensity could be achieved by enhancing transit. Edict 536 persuaded this purpose: it abolished duty on transit through the territory of Belarus by foreign carriers, driving into the country according to the license of European conference of transport ministers.

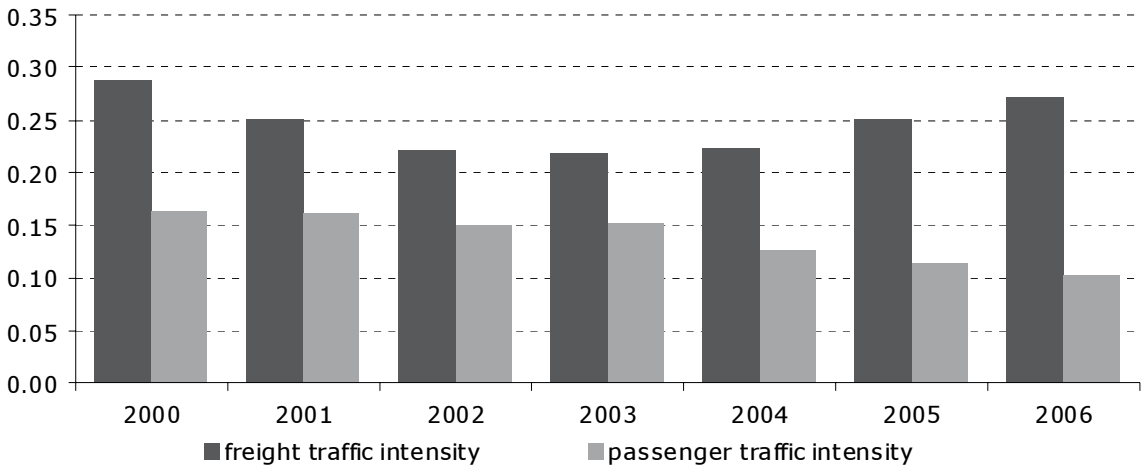
In 2006 there were several changes in legislation in transport-forwarding activity. The law "On transport-forwarding activity" and rules of transport-forwarding activity adopted by the Council of Ministers made up a deficiency in legislation. Before that there

[14] See World Bank (2004): Roads in Europe and Central Asia Measuring Financial Performance, Efficiency and Service Provision. Draft Report, p. 11.
[15] Ibid, p. 10.

were no special legislation framework dealing with the forwarding activity. However, new legislation did not bring sizeable improvements to the freight transportation market. It continued to be depressed by unfavorable regulations regarding the import of heavy trucks: The import duty for trucks older than 3 years is prohibitively high (EUR 2.2 per cm^3 of the engine).

Local state-owned transportation companies preserved their statuses: No attempts were made to incorporate these companies, to change the system of management or the way of tariff setting. Only the "Service and Supply Center" based in Grodno and dealing with freight transportation and auto service was announced to be transformed into a joint stock company and privatized. Despite of unfavorable circumstances, the volume of freight transportation increased by 19.1% and its intensity grew by 8.4% (Figure 7). Besides, export of freight transport services rose by 17% partly due to tariff growth. As shown in Table 5, freight tariffs grew by 8.7% (international by 6.7% and internal by 9.6%) that slightly exceeds the level of CPI.

Figure 7
Auto transportation intensity, units-km per 1000 BYR of 2000



Source: Own calculations.

Table 5
Price indices of auto transportation services, yoy

	2001	2002	2003	2004	2005	2006
Freight transportation, incl.	163.6	137.2	138.4	125.8	111.6	108.7
international	--	--	--	--	106.8	106.7
domestic	--	--	--	--	113.7	109.6
Passenger transportation						
suburban	172.5	213.7	151	150.4	123.3	119.6
interurban bus	168.5	175.3	136.7	135.9	126.2	113.5
Consumer price index	161.1	142.6	128.4	118.1	110.3	107.0
Service price index	216.8	193.4	161.9	121.2	112.0	113.2

Source: Ministry of Statistics and Analysis.

On the passenger transportation market the policy of forcing out private carriers continued. The legislature failure to divide functions of the principal (contractor) and operator contributed much to this process. State transportation companies are set to fulfill operator functions and it makes fair competition between them and private sector providers impossible. Besides, edict 760 seriously hampered private passenger

transport perspectives. Transition of private service providers into juridical persons within the current framework of simplified tax system makes their operation unprofitable. The positive moment in 2006 was a refusal of forcing private providers into check-in system at their costs. Still, the necessity of this system remains dubious.

As a result, the volume of passenger transportation has decreased by 1.3%. This is also connected to passenger tariffs growth: suburban tariffs soared by 19.6% and intercity by 13.5% (consumer price index in 2006 was 7.0%). However despite significant growth of tariffs and subsidies auto transportation suffered losses of 0.5%.

3.2.2. Reform agenda

A sustainable development of road network implies the improvement of financing of road construction and maintenance. The room for improvement lies in abolishment of practice to finance activities not related to road industry on the costs of the Road Fund and in increase of transit freight volumes. Latter is possible only in the case of creating more attractive environment. The natural monopoly operator Belavtodor should be given more independence from the Ministry of Transport to ensure that decisions on financing road construction and maintenance are less influenced by the transport lobby. There is a sense to revise the sources of the Road Fund in terms of abolishing turnover tax on rode users and increase the share of fuel excises accumulated in the fund.

High import duties on vehicles hamper the competitiveness of Belarusian carriers compared to railways and carriers of other countries. To improve the competition, it is necessary to lower the duties on imported trucks. An ideal way would be to introduce the "temporary import regime" for leased imported vehicles used in international transportation. At the same time it is equally important to start with the restructuring and privatization of state-owned trucking companies.

To develop the urban passenger transportation markets further, the government has to ensure equal treatment of private providers and public companies (including the same requirements for the technical characteristics of vehicles, the use of cash registers, and equal access to routes etc). It should legislatively clearly define the roles of contractors and operators of transportation services. The right to operate the market should not be granted to companies that provide transportation services. Instead, a regulatory body should be established independent both from state administration and service providers. Regional councils should not be involved in regulating the tariffs of private firms. It must also be ensured that transportation companies pay their 'fair share' to the local Road Funds in a transparent manner.

Since all public transportation companies now operate at a loss, the government needs a restructuring strategy. If the losses are incurred because of government intervention (rather than organizational inefficiencies) these losses should be reimbursed from the public purse. A first step would be to sell off all freight transport vehicles and other redundant assets, since private sector firms provide the major part of the overall volume of service. A considerable part of the redundant assets could be sold to private transportation companies. Also, the subsidization policy must be shifted towards compensating the income of privileged consumers instead of providing price compensation.

3.3. Telecommunications

3.3.1. Progress in 2006

There were no considerable changes in the Belarusian telecommunications sector environment in 2006. It performed within the framework of the Law "On Telecommunications", adopted in 2005, as well as the Program of Telecommunications Development

in Belarus for 2006-2010, and the State Program of the Rural Sector Development for 2005-2010.[16] Additional increases of state ownership in the mobile sector did not take place in 2006. The last year has also been characterized by an increased number of mobile phone users, introduction of new tariff plans for various income groups by mobile operators, and decreases in tariffs for mobile connections and the Internet.

Although the law "On Telecommunications" adopted in 2005 was targeted at transforming the state legislation in telecommunications towards WTO standards, it contains norms that preserve the monopoly status of Beltelecom in the telecommunications sector, in particular for long-distance calls.[17] According to officials (I. Rak, first deputy minister of communications and information), it is the necessary transitory stage, that should fulfill the social programs of telecommunications development in the rural areas and in agro-towns, preferential telephone provision for some groups of population in accordance with the socially oriented state policy. The monopoly of Beltelecom for long-distance calls allows it to cover losses in local calls provision by the overrated long-distance calls' tariffs.

Local calls are regulated by the government. According to statistics dated October, 2006, the level of Beltelecom costs compensation in the sector accounted for 62.2% of local telephone connections (urban - 76.8%, rural – 26.9%) and 92.5% of inter-city calls within the country. Costs compensation by legal entities is higher, but still does not cover them in full. Thus, cross-subsidization remains within the sector. The Program of Telecommunications Development for 2006-2010 targets at adjusting telecommunications tariffs according to costs.

In 2006, edict No. 473 was adopted and established the Governmental Committee on Radio Frequencies by the Security Council of the Republic of Belarus.[18] The Governmental Committee on Radio Frequencies by the Ministry of Communications and Information was liquidated simultaneously. According to officials, this measure should rule out the narrow focus in the allocation of radio-frequencies and their use. In addition, it is envisaged to respond better to the demand of citizens and private and state-owned organizations. Taking into account the Committee's composition where representatives of various Belarusian ministries and departments will still be present as in the previous Committee, fundamental changes in the Committee's functioning are unlikely.

In 2006 the profitability of the telecommunication sector increased. The net profit of the companies accounted for BYR 637.7 bln, which is an increase by 43.9% from 2005.[19] The sector in general is highly profitable[20], despite the government's interfer-

[16] Resolution of the Council of Ministries of the Republic of Belarus No. 1395, dated 23.10.2006 "On the Ratification of Program of Telecommunications Development in the Republic of Belarus for 2006-2010". Law of the Republic of Belarus No. 45-3, dated 19.07.2005 "On Telecommunication". Edict of the President of the Republic of Belarus No. 150, dated 25.03.2005 (with changes from 12.01.2007) "On the State Program of Rural Development for 2005-2010".

[17] Beltelecom belongs to the Ministry of Communications and Informatization and operates under its direct supervision. Beltelecom is the national telecommunications operator. Beltelecom's monopoly applies primarily to external telecommunication networks. All mobile operators providing international calls are obliged to rent Beltelecom's network channels.

[18] Edict of the President of the Republic of Belarus No. 473, dated 31.07.2006 "On the Governmental Committee on Radio Frequencies by the Security Council of the Republic of Belarus".

[19] In 2006 inflation was 7% implying that the sector's profitability was growing in real terms.

[20] Profitability of telecommunication services is calculated as the ratio of the profit from sales of telecommunication products, works and services to the prime cost of products, works and services sold.

ence in its operations (Table 6). Overall, Belarusian economy's profitability was 13.6% in 2006. Beltelecom's profitability is supposedly lower than the overall sector profitability (e.g. mobile operators, Internet providers), since the company is overloaded with the social responsibilities of having the status of the national telecommunications operator.

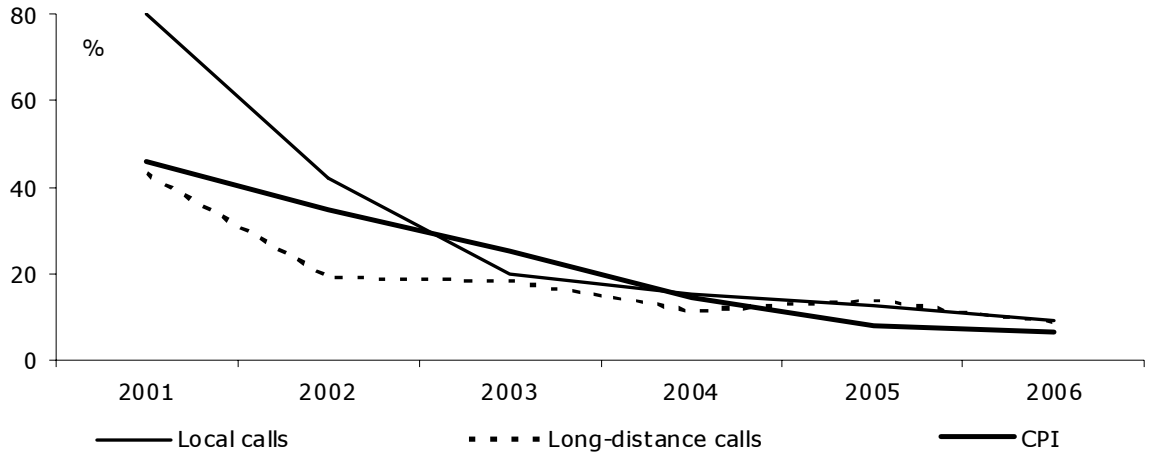
Tariffs for individuals' long-distance calls (as provided by Beltelecom) increased by 8.9%, for local calls by 9.3%; for legal persons by 1.7% and 3.7% respectively in 2006. The tariffs' increases surpassed inflation by no more than 3%, thus not indicating any substantial decrease in cross-subsidization in the sector in 2006 (Figure 8).

Table 6
Profitability of telecommunication services (in %, 2000-2006)

	2000	2001	2002	2003	2004	2005	2006
Telecommunications sector	23.6	12.3	17.0	13.5	26.9	37.5	44.8

Source: Beltelecom Annual Reports and Ministry of Statistics and Analysis

Figure 8
Annual Growth of Telephone Communication Tariffs for Households and CPI



Note: Indices, end of period cumulative.
Source: Own calculation based on data from the Ministry of Statistics and Analysis.

In 2006 telephone density reached 36 telephones per one hundred persons and the number of telephones of fixed network increased by 124,983 and amounted to 3.5 m (Figure 9). Telephone density in Russia was 30 telephones per one hundred persons, 28 in Moldova, and 25 in the Ukraine. Thus, Belarus passes ahead of the neighboring countries with this indicator.

The State Program of the Rural Sector Development for 2005-2010 aims to cover rural areas with fixed or mobile networks by 2010. The aims of the Program for 2006 were fulfilled. Telephones density in the rural areas per 100 persons reached 26.8; fixed line networks cover 94.4% of rural territories.

In 2006, Beltelecom was replacing and modernizing old telecommunications equipment with digital ones. Digital equipment accounted for 67%. Physical infrastructure for the telecommunications sector is being constantly improved in the country.

Figure 9
Number of telephones of fixed network in urban and rural areas

Source: Ministry of Statistics and Analysis.

During 2006 the number of mobile subscribers increased to 6.3 mln, more than half of total population. Despite various subscribers being connected to more than one mobile operator simultaneously, the number of population accessing mobile services increased. Thus, the mobile penetration rate amounted to 60% in 2006.[21] It is supposed that the mobile network market capacity in Belarus is 5-6 mln subscribers. Hence, the market is close to saturation and increasing competition between mobile operators.

Mobile subscribers were offered various connection plans in 2006 (including those without advance payment) and promotions with tariffs reduction took place. The lowest tariffs were offered by the state-owned mobile operator BeST[22], but its network coverage is low within the country. New high-tech services were also popular, including GPRS, MMS, UMTS and EDGE. Individualized approaches towards customers were offered, taking into account their various needs.

Government-imposed social obligations of the mobile operators were kept in place during 2006. The Ministry of Communication and Informatization instructed operators to cover "agro-towns" with the GSM mobile connection and to introduce social tariffs plans for these places, within the State Program of the Rural Sector Development for 2005-2010. In response, the joint venture Mobile Digital Communications Ltd. (the trade mark Velcom)[23] and Mobile TeleSystems (MTS) Ltd.[24], in which the government

[21] In 2005 the mobile penetration rate was 40.9%, and as low as 24.2% in 2004.

[22] In 2006 BeST was servicing 62 thsd. subscribers. The biggest subscribers' influx appeared in the last months of 2006, primarily due to promotions. Taking into account the low number of subscribers at the beginning of the year (0.4 thsd.), the growth was 61.6 thsd. subscribers, or +15.400%. BeST had 111 network stations, radio coverage represented 1.2% of the territory, and covered more than 40% of the population. The founders are Beltelecom holding 25% of the shares and NPO Agat owning the remaining 75%.

[23] In 2006 Velcom was servicing 2.6 mln subscribers. Velcom had 1.668 network stations, radio coverage was 75% of the territory, accounting for more than 92% of the population. International roaming was available in 123 countries. After the redistribution of shares in 2004 the Samauwi Brothers Telecom (SB Telecom), one of the founders of Velcom, lost its controlling shareholding and now holds only 49% of the stock. 51% of the shares of Velcom belong to state bodies (State Ownership Fund by the Ministry of Economics, Beltexport and Beltelecom).

[24] In 2006 MTS was servicing 3.2 mln. subscribers. MTS had 2.210 network stations, radio coverage represented 64% of the territory, with more than 90% of the population. International roaming was available in 116 countries. The founders are Beltelecom holding 51% of the shares and Mobilnye Telesistemy owning the remaining 49%.

owns the majority share, and the state-owned operator Belarusian Network of Telecommunications BeST have continued to participate in the Program, providing the population of the rural areas and regions with favorable tariff plans (e.g. "AgroKorporazija", "Privet, Gorodok", and "Sozialnyj" by Velcom).

The year 2006 was also characterized by the intensive development of the Internet access provision. Beltelecom remains the primary Internet provider in Belarus. All external traffic goes through a channel controlled by Beltelecom. External Internet gateways at the end of 2006 accounted for 1.8 GBit per second, and increased by 80% during the year thus increasing the accessibility of Internet services in the country.

According to Beltelecom, Internet users in Belarus amount to 41 per 100 inhabitants. Market experts estimate Internet penetration to be about 30% of inhabitants, of which 15% are constant users (every day or several times per week).

At present the main Internet access mode in the country is the dial-up access (provided at large by Beltelecom). Beltelecom aims to decrease the dial-up access growth rate by shifting the focus in its marketing strategy towards the broad band Internet, ADSL (Asymmetric Digital Subscriber Line) in particular.

ADSL connections in Belarus are booming (providers connect through ADSL up to 1,000 new Internet subscribers per month). The largest share in the ADSL market in Belarus belonged to Beltelecom in 2006 (about 53%, including regions; after introducing the new product «byfly» (broadband Internet access) in autumn 2006). Atlant-Telecom owns 12% of the market, the rest is distributed between smaller secondary providers.

Beltelecom was extending fiber-optic networks in the country, including the regions that could facilitate further development of secondary providers' networks. Thus, one of the main priorities of the telecommunications sector development in Belarus is the facilitation of Internet access services development.

Despite the monopoly status of Beltelecom in the telecommunications market, in 2006 it was simultaneously providing cheap landline calls, and constantly decreasing tariffs for Internet connection (average decrease of tariffs for all kinds of Internet connection accounted for 10% in total during the year).

Thus, developments in telecommunications sector in 2006 were characterized by the following features:

- Primarily social orientation preserved in the government's policy in the sector;
- Government retained majority shares in the numerous telecommunications sector companies;
- Belarusian regions gained better access to the fixed and mobile communication networks, as well as the Internet;
- Quality and spectrum of telecommunications services increased (the focus shifted from purely voice communication services to the high-tech services, e.g. mobile Internet); but lagging behind other countries (including the neighbors) especially with in terms of progressive telecommunication services.

3.3.2. Reform agenda

The active government interference in the decision making in the telecommunications sector at the micro and macro level constraints the sector development, which

is one of the most dynamic of the Belarusian infrastructure sectors. The strategy of the telecommunications sector development should be directed towards the creation of a competitive and attractive investment environment. In this regard the following telecommunications sector reforms are important:

- Monetization of benefits for separate population groups. Social benefits should be provided in the form of direct money compensations.
- Cross-subsidization removal for local connections at the cost of long-distance connections. Prices should be set at cost covering levels. This step would facilitate competition, lowering tariffs for the long-distance calls, increase investments attraction, convergence with the international norms in telecommunications regulation, and integration in the world's telecommunications market.
- Pursuing profitability and operational efficiency in the telecommunications sector. Companies should provide social benefits only if these are directly compensated from the state budget.
- Removing the monopoly on the delivery of long-distance, international calls and IP-telephony services. Access of private companies to these segments will foster price competition and ensure a dynamic development of the fixed telephony sector.
- Corporatization of Beltelecom in order to remove the state's monopoly in the sector. This step will provide transparency of its activity and will increase management's motivation and efficiency within the sector.
- Creation of an independent regulator in the telecommunication sector shielding market participants from political interventions in order to ensure long-term market stability and a level playing field. The regulator should also ensure market discipline while protecting consumer interests and facilitating open access to the core infrastructure of the network. The independence of such a body from direct political intervention has often been cited as means of building trust among investors in a newly liberalized sector.

3.4. Gas

3.4.1. Reforms in 2006

2006 has been a year with no meaningful changes in the principles and the results of the Belarusian natural gas sector functioning. Supplies of cheap Russian natural gas and confidence in maintenance of these deliveries in the nearest future predetermined the absence of structural reforms and "conservation" of the situation within the energy sector and the economy in general.

The natural gas sector in Belarus was dominated by the state owned Beltopgaz, managed and controlled by the Ministry of Energy of Belarus, and Beltransgaz. While Beltransgaz is responsible for natural gas transportation to Belarus and for managing natural gas transit, Beltopgaz deals with the distribution and retail sales of natural gas to final consumers inside Belarus.

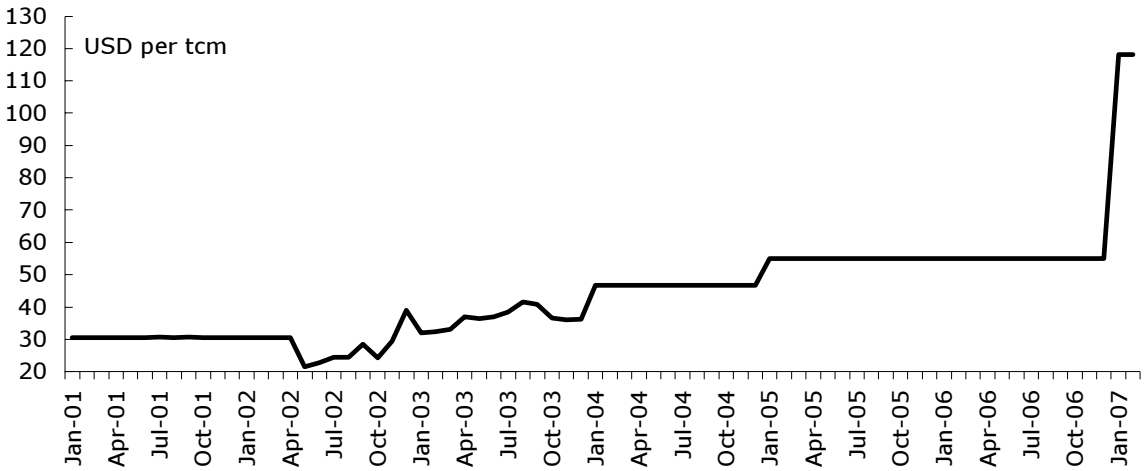
Gazprom and Beltransgaz[25] signed a contract for natural gas supply and transit on December 27, 2005. The price for the gas and tariff for its transit remained of the same as in the previous year. According to the contract in 2006 Gazprom was supposed to supply 21 bcm of natural gas.

[25] JSC "Beltransgaz" transits gas through Belarus with length of 7000 km of pipelines, including 575 km of the Yamal-Europe pipeline.

Belarus consumed 20.8 bcm of gas in 2006, which is an increase by 3.3% from 2005 (20.12 bcm). Gas transit through the country amounted to 44.2 bcm (growth by 11% compared to 2005). Indeed, the main increase of transit was achieved on the Russian Yamal-Europe pipeline, the share of which consisted 70% of all amount of transit (31 bcm).

The price of natural gas for Belarusian imports was set in the contract at USD 46.68 per tcm (Figure 10). Transit prices remained constant from the previous year: USD 0.75 per tcm of natural gas per 100 km through the Beltransgaz pipeline and USD 0.46 per tcm via the Russian Yamal-Europe pipeline.

Figure 10
The development of prices for imported gas from Russia, 2001-2007



Note: Including VAT.
Source: The Ministry of Statistics and Analysis.

Representatives of Gazprom stated an application of market principles of cooperation to all importing countries. Indeed, in 2006 the country has imported gas from Russia paying a very preferential price compared to other CIS countries.[26] Several factors contributed to this situation according to Gazprom position. First, Russia and Belarus have been building the Union State which assumes equal standards of economic policies. Second, in 2005 all documentations, according to which Gazprom owns the Belarusian part of the "Yamal-Europe" pipeline (more than 60% of all transit gas to Europe use these capacities via Belarus) were finally prepared and signed. Besides, the treaty between Gazprom and Beltransgaz provides long-term rent land under that pipeline. Third, in 2005 the negotiations on setting up a joint venture with the Belarusian party (between Beltransgaz and Gazprom) were renewed[27].

Despite making agreements, during 2006 the negotiations on setting up the joint venture and privatization of JSC Beltransgaz did not succeed. However talks intensified at the end of the year, when both sides were signing the gas contract for 2007.

In July, the Belarusian and Russian sides signed an agreement on market evaluation of Beltransgaz. For more than two years both sides could not find a proper evaluator, whose evaluation would be trusted. The compromise was found in the Dutch bank

[26] Price for natural gas for Azerbaijan amounted to USD 140 per tcm, for Armenia, Georgia, Moldova it was USD 110 per tcm, and for the Ukraine USD 95 per tcm.
[27] Indeed, the Belarusian side did not give any juridical guarantees to create such a joint venture in 2006.

ABM Amro. On November, 24, the results of the valuation of Beltransgaz made by ABN-Amro bank were privately presented to the government.[28]

Due to tough negotiation on Beltransgaz' evaluation, privatization, and conditions of a contract for natural gas supply in 2007, Beltransgaz fully paid for current consumption in 2006. The current external natural gas debt for Russian suppliers was absent.

Indeed, the situation with final (internal) consumers' payments was not that favorable. The main debtors of the natural gas sector were the electricity sector and some industrial and agricultural enterprises. The main share of all outstanding amounts for natural gas was accounted for by the electricity producing company Belenergo. The company was not able to pay the arrears of previous years due to the difficult financial state and existence of its own debtors for consumed electricity. However, debts of internal consumers fell by 30% or USD 55.47 m during 2006 (Table 7).

Table 7
Arrears for natural gas (USD m)

	As of January 1, 2003	As of January 1, 2004	As of January 1, 2005	As of January 1, 2006	As of January 1, 2007
Total, including	874.11	708.16	248.66	186.05	131.03
Arrears of domestic consumers	774.63	594.48	247.51	186.05	131.03
External consumers	99.48	113.68	-	-	-

Source: The Ministry of Statistics and Analysis.

Although the import price for Russian natural gas did not increase, the price for gas for the majority of consumers increased by 4% since March 1, 2006 (see Table 2).[29] However some preferential prices at a level of about 50-80% of the official price were kept for some selected enterprises (Belenergo, some state plants of chemistry, peat, light, porcelain and other industries). Natural gas prices were kept at the same level following March, when the Belarusian government hoped until the last moment that in 2007 there would be not considerable increase in importing prices.[30]

Indeed, according to the new contract the price more than doubled (USD 100 per tcm without VAT), incurring a price shock for consumers and economy in general. Already in January 2007, the average natural gas price for industrial consumers increased to USD 120 per tcm without VAT (BYR 257.460).

Natural gas tariffs for households increased by 6% in April and amounted to BYR 201.700 per tcm (USD 94).[31] The cost recovery for all natural gas consumed by households by the end of the year amounted to 95.8% (70.3% for liquefied (condensed) gas and 115.6% for natural gas), which is more than in 2005 where total cost recovery for natural gas consumed by households amounted to 90.9% (104% for natural gas and 68% for liquefied gas).

[28] ABN-Amro Bank offered few estimations of possible market price of Beltrangaz. Finally, Belarusian and Russian sides agreed on the price at USD 5 bn. Together with the contract on gas supply to Belarus in 2007, which was signed on December 31, 2006, the heads of Beltransgaz and Gazprom signed a protocol on intention to create a joint venture in the nearest future. According to the document, Gazprom would buy every year 12.5% of shares and pay in cash USD 625 m. So, by 2011 Gazprom would have 50% of Beltransgaz shares having paid USD 2.5 bn.

[29] See the Resolution of the Ministry of Economy No. 32, April 13, 2006

[30] The contract on natural gas supply was signed at 23.50 hrs on December 31, 2006.

[31] The resolution of the Council of Ministries No. 505, April 13, 2006.

Table 8
Price dynamics for natural gas and its structure for industrial enterprises, USD per tcm

Resolution of the Ministry of Economy	13.06.02 №124	25.11.02 №251	24.01.03 №25	25.09.03 №6194	28.01.04 №21	02.02.05 №20	24.02.06 №32
Purchase price for imported gas	24.52	33.59	34.37	37.59	46.68	55.08	55.08
Markup of Beltransgaz	10.03	9.14	6.99	6.92	8.14	8.07*	7.9*
The price of Beltransgaz	34.55	42.73	41.36	44.51	54.82	63.15	62.98
Markup of Beltopgaz	13.38	9.17	9.53	9.43	12.18	12.76	16.28
The price of Beltopgaz	47.93	51.90	50.89	53.94	67.00	72.3	75.16

Note: Including VAT.
* the markup was reduced by USD 3.61 in 2005 and USD 4.1 in 2006 as a budget subsidy to Beltransgaz (i.e. without that subsidy the final prices would be higher and amount to USD 75.91 and USD 79.26 per tcm accordingly).
Source: The Ministry of Energy.

3.4.2 Reform agenda

The crucial importance of natural gas to the Belarusian economy requires a stable and affordable gas prices and a secure gas supply. On the other hand, required investments in infrastructure and equipment should – at least partially – be financed by private investors. This is in particular true given the limited availability of public funds. Inevitably rising prices for imported natural gas enhances the importance of possible costs reduction and efficiency increases within the sector. Hence, a natural gas industry oriented policy should be directed towards a sustainable, profit-oriented development whilst providing sufficient investment incentives to the private sector.[32] In this context the following changes seems to be required:

- Tariffs for final consumers must become cost-reflective for households and for industries without allowing for cross-subsidization. Prices for all industrial consumers should be equal and costs should account for investment needs;
- If providing social privileges to some groups of households remains a priority of the government, it should be dealt with in a transparent manner. Here, targeted aid or direct income subsidization might be considered;
- Efforts to improve payment discipline must be continued without any exceptions across all consumers groups, using economic as well as administrative measures;
- Significant and deep restructuring of Beltopgaz and Beltransgaz is needed. Both companies are overburdened with non-productive assets, and (although in part already officially corporatized) are not independent to make financial and investment decisions. Restructuring and corporatization also includes the necessity and the possibility to divest all ancillary enterprises that are not related to the core business. The current policy of implementing investments for achieving different social and political goals should be stopped.

[32] For more detailed suggestions for reforms in the natural gas sector see RC IPM-GET Policy Paper 15/04 Gas Sector Restructuring in Belarus: Necessity and Directions, http://www.research.by/pdf/pp2004e15.pdf

- In order to avoid cross-subsidization between different activities within a single firm (a particularly severe impediment for the development of competition between different activities), full corporatization must include a strict legal separation (unbundling) of network operations and natural gas supply (retail) activities within each company, and for the case of Beltransgaz also a separation into international transit and domestic transmission. Furthermore, in order to ensure creditworthiness, all companies should provide a sufficient degree of transparency, e.g. through regular independent audits according to international standards.
- In order to avoid excessive interference, the sector needs a regulator that is independent of both the natural gas industry and government. This body should define the rules of the game, and consider the interests of all groups involved. Among its first actions, the regulator should make changes to the tariff policy for final customers that will bring more competition into the sector.

3.5 Electricity

3.5.1 Reforms in 2006

State owned Belenergo[33] generated 31.8 bn kWh (increase by 2.7% from 2005) and imported 5.48 bn kWh (up 11% since 2005). Imports came from Russia (2.34 bn kWh), Ukraine (2.5 bn kWh), and Lithuania (0.63 bn kWh). In 2006, following an interruption, import from Ukraine was continued, while import from Lithuania nearly stopped. Brestenergo, the enterprise of the concern Belenergo, exported 1.1 bn kWh of electricity to Poland (an increase by 24.5% from the year before).

The payment discipline remained strict; non-money schemes have been almost liquidated (representing 2.1% only). The collection rate for electricity paid by final consumers amounted 100.3% on average (consumers paid back part of the previous year's debts). Nevertheless, the situation regarding payments within the country remained difficult as the existing arrears of the final consumers to Belenergo were reduced by USD 71 m only (Table 9). Overdue debts for electricity represented 56.2% of all overdue debts for fuel resources. The main debtors of Belenergo are the companies of the Ministry of agriculture (accounting for 62% of all debts to Belenergo).

Table 9
Debts for electricity consumption

	As of January 1, 2003	As of January 1, 2004	As of January 1, 2005	As of January 1, 2006	As of January 1, 2007
Total, including	812.6	721.38	331.48	293.92	222.52
Domestic consumers	758.59	692.25	328.62	293.92	222.52
Foreign consumers	54.01	29.13	2.86	-	-

Source: The Ministry of Statistics and Analysis.

In 2006, tariffs for electricity for industrial consumers were increased by 16% and fixed at the level of US cents 7.78 per 1 kWh (Table 10). This was mainly driven by an increase in price for imported electricity and other costs (increase in the price of natural gas and other suppliers). At the same time, some preferential pricing persisted. The list of companies eligible for reduced tariffs was compiled by the Ministry of economy and it included such main tax payers as the Belarusian metallurgical plants, Svetlogorsk PO Khimvolokno, Grodno PO Khimvolokno, Grodno-Azot Inc., Minsk Bearing plant Inc., JSC Beltransgaz and its affiliates, enterprises of the Beltopgaz and

[33] The Belarusian power system (concern Belenergo) consists of six independent regional companies (one for each oblast – oblenergos).

some other energy intensive companies.[34] Agricultural consumers – as the main problematic payers – continued to delay payments for the debts of previous years (under the condition of full and on-time payments for current consumption). However, such privileges usually do not help agricultural enterprises to improve their financial state and pay back overdue debts.

Table 10
Electricity production costs and prices for different groups of consumers (US cents per kWh)

	As of January 2003	As of January 2004	As of January 2005	As of January 2006	As of March 2006	Since January 2007
Costs	2.32	3.21	3.50	4.40	4.53	5.86
Prices for:						
State financed organizations	3.00	4.02	4.02	4.90	5.91	7.15
Industry	4.41	6.02	6.02	6.70	7.78	9.21
Households	2.39	3.32	3.45	4.09	4.36	5.23
Agriculture	2.44	2.66	2.66	2.90	3.56	4.32
Other enterprises	4.41	6.02	6.02	6.70	7.78	9.21

Source: The Ministry of Energy.

Electricity tariffs for households during 2006 were revised once and since 01.05.2006 amounted 4.09 US cents per 1kWh.[35] As a result, cost coverage amounted 92.6% by the end of the year, which is the same as in the previous year (92.8%).

At the governmental meeting taken place on December 1, 2006, A. Lukashenko approved the suggestions of the National Academy of Science and of the government on building nuclear power station in the country. It would be built in the Chauss region of Mogilev oblast. According to the concept of national energy security the first energy block should start working in 2013, already. According to the plans of the government, start-up of 2 blocks of the nuclear power station with total capacity of 2000 MW would allow to Belarus to substitute around 5.0 bcm of natural gas. However, some scientists and experts have expressed doubts of the economic efficiency and advisability of such project.[36]

3.5.2. Reform agenda

Inevitable price increases for imported Russian natural gas requires urgent measures to prevent sharply escalating electricity costs and tariffs. Industrial tariffs are already set at the level close to Poland or Baltic countries while the price for natural gas remains 2-3 times lower. Modernizing some of the power plants in order to use domestic/renewable energy sources is useful, but can only provide a partial solution. A nuclear power station (if a decision for building it is made) will not be active before 2012.

Firstly, the tariff policy should be changed. Industrial tariffs are too high (significantly above cost) due to cross-subsidization, privileged pricing for some industrial consumers, debts, etc., while tariffs for households are below cost. The policy of eliminating cross-subsidies has been inconsistent and incomplete, and a complete elimination of household cross-subsidization has not been achieved.

[34] Altogether, there were more then 60 enterprises in this list.
[35] The resolution of the Council of Ministries No. 505 on April 13, 2006.
[36] For more detailed information on a nuclear power station building in Belarus see RC IPM-GET Policy Paper 03/06 "Economics of Nuclear Power Development in Belarus", http://research.by/pdf/pp2006e03.pdf

Subsidized energy prices for other groups, mostly industrial and agricultural enterprises remain an important issue. Moreover, a tariff policy vis-a-vis privileged industrial enterprises remains unpredictable and subject to political influence. Tariff eligibility criteria are often vague, leading to misallocations of resources, rent seeking and inconsistent information for future planning. All this creates numerous distortions to the market.

Furthermore, electricity tariffs are low by international comparison and also very likely below their long-run marginal costs.[37] Hence, the electricity sector operates inefficiently with large deferred investments. There seems to be no need for further reduction in profits of energy enterprises. Moreover, the existing cost plus practice of tariff formation does not provide adequate cost-cutting incentives to the energy sector.

The following measures are needed to enable the electricity sector to provide the desired outcomes:

- Tariffs should be set at cost-reflecting levels without permitting cross-subsidization, and at equal levels for all consumers without any price privileges;
- If providing social privileges to some groups of households remains a priority of the government, it should be dealt with in a transparent manner with the help of targeted aid or better via direct income subsidization;
- An independent regulator creating incentives for cost cutting should be established. The system should be transformed from a centrally planned one into a self-developing market, where the state only guarantees that no single market actor or the state itself abuse market power;
- The policy of further and stricter hard budget constraints for consumers should be continued. It is therefore reasonable to permit non-paying consumers, including public utilities etc., to be disconnected;
- Guaranteed third party access to the transport and distribution networks should be gradually opened on a clear non-discriminatory basis;
- Corporatization and restructuring of all regional branches of the concern Belenergo (oblenergos) and of all ancillary businesses should gradually start. This would make it possible to reduce the current 'politically fixed costs'[38] and increase management's motivation to cut costs.

Once these steps have been taken, the government will be in a position to address the next important issue, i.e. to increase efficiency within the sector (lowering costs). International experience shows several ways of improving efficiency within the sector through increasing competition and changes in motivating management (e.g. systems of pool or bilateral contracts).

[37] For more detailed information on reforms in the electricity sector see RC IPM-GET Policy Paper 03/05 "Reforms in the Belarusian electricity sector: How to reduce costs and dependence on imported resources", http://research.by/pdf/pp2005e03.pdf

[38] We call some costs 'politically fixed', because they could be reduced if it was politically possible. For example, enterprises cannot reduce the number of employees, as there exists an informal ban; many social objects or ancillary businesses cannot be separated, corporatized or privatized, etc.

Appendix 1

General description of the infrastructure indicators

This appendix presents a brief description of the criteria for scoring each indicator on a scale of 1 to 4.

1. Commercialization and privatization

1.1. Ownership

1.1.1. Natural monopoly. A natural monopoly is a network operator. A score of one means that the whole network is state owned; the score increases with an increasing share of corporatized, privatized and newly constructed private fixed networks in the total length of networks. The maximum score 4.0 is reached with private ownership of all networks.

1.1.2. Potentially competitive business. A potentially competitive business is an operator using networks to provide its services; it is a market related to a natural monopoly. A score of one implies that the businesses are part of the state owned natural monopoly. The score increases with separation, corporatization and privatization of existing operators, or with increased market penetration by newly established private agents. The maximum is reached when all the businesses are in private ownership.

1.1.3. Ancillary business. Ancillary businesses are concerned with network construction, its maintenance, inputs supplies, and social infrastructure. A score of one implies that these businesses are state owned. The score increases with the degree of separation, corporatization and privatization, or with increases in new private establishments.

1.2. Operation

1.2.1. Natural monopoly. A score of one is given when the natural monopoly is operated as a government department. The score increases with reorganization into an independent state agency or a company and establishment of an independent regulator. The maximum score is assigned if a private company manages the natural monopoly, subject only to an independent regulator, established by law.

1.2.2. Natural monopoly planning and investment decisions. A score of one implies political interference in business and investment decisions. The score increases as commercial objectives such as profitability and operational efficiency grow in importance. The highest score applies if network extensions and new investment projects are realized solely based on profitability considerations and reflect marginal social costs.

1.2.3. Private sector participation in service contracts. A score of one means that the private sector does not participate in construction, maintenance or rehabilitation, etc. The score increases with increasing participation in these activities by the private sector.

1.3. Organizational structure

1.3.1. Separation of natural monopoly and potentially competitive businesses. A score of one means separation neither between the infrastructure and the service providers' managements, nor between the managements of different service providers. The score increases with unbundling of the industry. The highest score applies when different services are provided by separate private companies.

1.3.2. Separation of ancillary businesses. A score of one means no separation of ancillary businesses from the natural monopoly or potentially competitive businesses. The score increases with increasing degrees of separation. The maximum score is assigned when ancillary services for the natural monopoly and for potentially competitive businesses are supplied by the market.

1.3.3. Decentralization. A score of one implies no or minimal decentralization and increases with increasing decentralization. Decentralization is both regional and functional and implies autonomy of decision making at the regional level concerning tariffs and investments. The highest score is assigned when the industry is divided into competing regional operators.

2. Tariff reform

2.1. Structure of tariffs

2.1.1. Political vs. regulated operators. A score of one implies strong political interference in tariff setting. The score increases with declining political interference and its transfer from the central government to the corresponding government agency and finally to the regulatory body. The maximum score is reached for full cost reflective tariff setting by an infrastructure operator regulated by an independent regulator.

2.1.2. Natural monopoly pricing. A score of one corresponds to pricing below cost accompanied by a substantial amount of cross-subsidization. The score increases as the tariff approaches the long-run marginal cost reflecting cost covering levels, with cross-subsidization declining.

2.1.3. Potentially competitive businesses pricing. A score of one means a lack of cost reflective pricing. The score increases with markets becoming increasingly competitive and prices approaching market equilibrium levels.

2.2. Payments

2.2.1. Intra-industry payment ratios. A score of one implies that arrears are constantly accumulating and transactions between companies within an industry are basically non-monetary. The score increases as monetary settlements are carried out and arrears approach zero.

2.2.2. Final consumer collection rates. A score of one means low revenue collection from final consumers (households, companies, state organizations) and constantly accumulating arrears. The score increases as progress with revenue collection is made and services are fully paid for.

2.2.3. State indebtedness. A score of one corresponds to growing arrears for state compensations to privileged consumers. The score increases as this indebtedness is reduced zero.

2.3. State funding

2.3.1. Subsidies level. A score of one means that some groups of consumers are heavily subsidized by the state in an explicit or implicit form. Both the depth of the subsidization and the distribution of subsidies are important. The government may pursue a constant practice of debt forgiving and restructuring. Abstention from implicit and explicit subsidies leads to improved scores.

2.3.2. Subsidies procedure. A score of one is assigned when the subsidies are directed to service suppliers and are provided in non-transparent ways. The score improves as the process becomes more transparent and income compensations replace price compensations.

3. Regulatory and institutional development

3.1. Effective regulatory institutions

3.1.1. Management selection of competitive businesses. A score of one means that the management is appointed by state officials. The score increases when the management is elected by shareholders and reaches its maximum when the shareholders are private companies or individuals.

3.1.2. Independence of regulator, insulation from political influence. A score of one is assigned when a government department provides the service. The score increases as a state commission is introduced and an independent regulator is established. The highest score applies when an independent regulator acts according to law.

3.1.3. Transparency of regulation. A score of one implies an absence of legislation defining clear rules of the game for businesses, and the obligations of government bodies. The score increases with the development of legislation and its enforcement, including when the decision-making becomes public. The maximum score is reached when the performance of natural monopolies in an industry is regulated only by an independent regulator in accordance with law, and all decisions are disclosed.

3.2. Access regulation. A score of one means that the access right is arbitrarily determined by the state or the state-owned operator. The score increases as access is regulated by an independent regulator, later negotiated, and finally determined by market mechanisms.

Appendix 2

Explanations for the infrastructure indicator evaluations

RAILWAYS

1. Commercialization and privatization

1.1. Ownership

1.1.1. The basic rail network is 100% state owned. Rails linking enterprises to the basic network are owned by the enterprises. 2006: 1.3.

1.1.2. Passenger and freight transportation is 100% state owned. However, companies belonging to Belarusian Railways are separated and are independent legal entities. There are a number of private forwarding companies operating at the market. 2006: 1.3.

1.1.3. All ancillary businesses are state owned and constitute a part of Belarusian Railways, though they are divided into separated legal entities. 2006: 1.3.

1.2. Operation

1.2.1. In May 2006 a natural monopoly Belarusian Railways became a department of Ministry of Transport and Communication. Earlier Belarusian Railways was a state holding, according to law, not directly regulated by the government. In practice it was not the case. So the fact that Belarusian Railways has become a department of Ministry of Transport and Communication has just legitimized existing practice and has lead to the sleight decrease of index. 2006: 1.3.

1.2.2. According to the statute of Belarusian Railways the primary objective is satisfying the needs of producers and of the population concerning transportation services. Achieving profitability is secondary to the primary objective. There is also a certain amount of state interference in the business and its investment decisions. 2006: 2.0.

1.2.3. There is private sector participation in service contracts. The tendering procedure is quite transparent including postings of announcements on the Internet. Nevertheless the scale of outsourcing has not yet reached satisfactory levels. 2006: 1.7.

1.3. Organizational structure

1.3.1. No separation of potentially competitive businesses from the natural monopoly operators has taken place so far. 2006: 1.0.

1.3.2. Ancillary businesses are independent legal entities within the structure of Belarusian Railways. The share of non-core businesses in the structure of Belarusian Railways is very high. They include 39 healthcare and education institutions. 2006: 1.3.

1.3.3. Belarusian Railways consist of 6 regional companies. Altogether the company unites 93 legal entities. 2006: 2.0.

2. Tariff reform

2.1. Structure of tariffs

2.1.1. Tariffs for domestic transportation services are set independently from the railways by the Ministry of Economy. Transit transportation tariffs are determined by international agreements. However, there is strong political influence on the tariff setting process, as they are believed to affect the standard of living in the country. 2006: 1.7.

2.1.2. According to law, tariffs should cover cost of the service provided and allow development of the railway network. As BR is both a natural monopoly operator and a transportation services provider it is impossible to assess the percentage of revenues channelled into railway network maintenance. Though, there is a considerable amount of cross-subsidization especially towards suburban transportation (diesel and electric trains): it's the most loss-making (in 2006 revenues, excluding subsidies, covered only 36% of costs). Between 2001 and 2006 tariffs for suburban transportation grew faster than for other kinds of passenger and freight transportation. 2006: 1.7.

2.1.3. Belarusian Railways consistently makes profits (the 2007 rate of return was 17.0%). Due to the distorted structure of tariffs, however, the amount of cross-subsidization is still very high. 2006: 1.7.

2.2. Payments

2.2.1. A certain amount of indebtedness exists between the different enterprises within Belarusian Railways. 2006: 2.0.

2.2.2. Revenue collection for passenger transportation is 100%. A large percentage of consumers have privileges, especially on suburban transport. However starting from May 20, 2006 a number of privileged passengers has been cut and control over the documents proving privileges is being exercised directly when buying a ticket. Privileged passengers still constituted 19.7% of all passengers transported Free rider practices on suburban transport are common. Some firms that use freight transportation services are regularly indebted to Belarusian Railways. 2006: 2.0.

2.2.3. In practice the government covered only 14.8% of losses of Belarusian Railways caused by providing privileged consumers with service. 2006: 1.0.

2.3. State funding

2.3.1. Some consumer groups, especially users of suburban and intercity trains, are subsidized at the expense of enterprises that ship their goods by railway. Coverage by the state of losses resulting from the provision of services to privileged consumers is low. It resulted in uncovered losses of Belarusian Railways of BYR 28.7 bn. 2006: 1.0.

2.3.2. According to law the government is obliged to cover all railway expenses, which are incurred as a result of providing privileges to certain categories of consumers. In practice the procedure of price compensation is not disclosed. 2006: 1.0.

3. Regulatory and institutional development

3.1. Effective regulatory institutions

3.1.1. The CEO of Belarusian Railways is appointed directly by the President. His deputies are appointed by the Council of Ministers. 2006: 1.3.

3.1.2. Since 2006 Belarusian Railways is a department of Ministry of Transport and Communication with rights of legal entity. Thus, existed practice of administrative intervention in particular activities of the company was legitimized. The index remained the same. 2006: 1.3.

3.1.3. The rules for operating Belarusian Railways are clearly defined in a number of legislative documents. Yet the decision-making procedures have not been made open to the public. 2006: 1.7.

3.2. Access regulation: Access by outside firms to the market is not possible. 2006: 1.0.

ROADS

1. Commercialization and privatization

1.1. Ownership

1.1.1. Roads are 100% in state and communal ownership. 2006: 1.0.

1.1.2. State transportation enterprises are separated into independent legal entities, each of which operates in a certain region. Private urban transportation is highly developed in some towns, reaching 50% market share. Private freight transportation enterprises and individual entrepreneurs provide about 80% of the total amount of services. 2006: 1.7.

1.1.3. Ancillary businesses are state owned. All of them are independent legal entities separated from road management and approximately 23% are incorporated. 2006: 1.7.

1.2. Operation

1.2.1. The natural monopoly operator Belavtodor operates as a government agency, i.e. as part of the Ministry of Transport and Communications. 2006: 1.3.

1.2.2. There is political interference in the business and investment decisions of state owned firms by state administrations including local offices. 2006: 1.3.

1.2.3. Road construction and maintenance is provided by state owned firms, 23% of which are incorporated. There is private sector participation in service contracts through tenders. Yet the scale of outsourcing has not reached satisfactory levels. 2006: 1.7.

1.3. Organizational structure

1.3.1. Road management is completely separated from freight and passenger transportation services. 2006: 3.0.

1.3.2. Road construction and maintenance are separated from the natural monopoly operators. Cooperation between them is based on tendering procedures. 2006: 2.0.

1.3.3. The natural monopoly operators are divided into regional monopolies, although these monopolies are heavily regulated by the central and local administrations. The state road operator Belavtodor was reorganized, but the changes were not significant enough to upgrade the indicator. 2006: 1.7.

2. Tariff reform

2.1. Structure of tariffs

2.1.1. Although tariffs are politically determined, state owned firms have some freedom in setting their own tariffs. This happens in towns where competition with private contractors is stronger and the tariffs charged by state owned firms are lower. Investment decisions are highly influenced by the state administrations. 2006: 2.0.

2.1.2. According to state legislation, road funding should derive from contributions, which are applied to the price of all products and paid by producers, and from other payments such as the tax on fuel. Also, user fees are levied on truck companies depending on the distance traveled and the truck's parameters. There is one state owned toll road (M1/E30 Brest – Minsk – Russian Federation border), but revenues do not cover operational costs on this road. According to Belavtodor state financing reaches only 40% of the needed amount. 2006: 2.0.

2.1.3. The trucking and bus transportation markets are competitive, though competition in the urban transportation market is limited by excessively strict permit requirements. Tariffs on passenger transportation services of state-owned enterprises are set by the Ministry of Economy, although the enterprises have some freedom to change them. The maximum tariffs for private passenger transportation are set by oblast councils. Private freight transportation companies are free to set their own tariffs. 2006: 1.7.

2.2. Payments

2.2.1. A certain, but not a significantly large amount of indebtedness between ancillary services providers persists. 2006: 2.3.

2.2.2. Revenue collection for passenger transportation is close to 100%, though price compensation for serving privileged passengers remains an issue. Free rider practices in urban transport are also common. The revenues of public transport enterprises relative to their costs continue to be low. 2006: 2.0.

2.2.3. State financing of road construction and repair in 2006 has not improved. The revenues of the Road Fund have fallen by 0.2% of GDP. A serious problem constituted its inappropriate use. More than 20.3% of the fund was spent on agricultural issues. 2006: 2.0.

2.3. State funding

2.3.1. The government uses the cost-plus approach to cover loses of public transport firms instead of compensating them for the cost of providing services to privileged consumers, which would be in accordance with the law. State subsidies did not fully cover costs of public transportation companies: The whole transport industry suffered losses of -0.5%. Private firms generally are not obliged to provide privileges. In many cases the prices charged by private firms resemble those of their public competitors (price discrimination). 2006: 1.3.

2.3.2. Subsidies are directed straight to the service providers in a non-transparent way. 2006: 1.3.

3. Regulatory and institutional development

3.1. Effective regulatory institutions

3.1.1. Management of all state owned companies is appointed by the state administrations, either central or local. 2006: 2.0.

3.1.2. Belavtodor, the monopoly road operator is a department of the Ministry of Transport. Road maintenance companies and transportation companies are separate legal entities. 2006: 1.7.

3.1.3. There are clear rules of operation for the natural monopoly described in legislative acts. However, the decision making process is not disclosed to the public. Decisions are highly politically influenced. 2006: 1.3.

3.2. Access regulation: Access is regulated by licensing. At the local level route tendering procedures are not transparent. The rules of sharing out routes among various contractors are not clearly defined and public control is lacking. The regulatory framework continued to be unfavorable for urban transportation firms and entrepreneurs during 2006. Compared with public firms they receive unequal treatment. However the market share of private providers of passenger transportation services[39] increased from 8.4% in 2005 to 8.9% in 2006. The regulatory

[39] Official Ministry of Statistics data. The category "private providers" in this case includes only private entrepreneurs, while firms are not counted.

framework in freight transportation slightly improved due to new legislation acts that clarified some issues of transport-forwarding activity (especially interactions within transport companies). As a result the index rose to 2.0. 2006: 2.0.

TELECOMMUNICATIONS

1. Commercialization and Privatization

1.1. Ownership

1.1.1. The cable infrastructure is primarily owned by Beltelecom. There was no change in the Beltelecom ownership structure. Still, during 2006 fiber-optic channels were extended further to the regions that will allow easier potential connection of other providers. 2006: 1.7 (1.3 in 2005).

1.1.2. Regional telecommunication enterprises, the Minsk city telephone network, and long-distance communications are branches of Beltelecom. Mobile phone operators are corporatized, but the state has majority ownership in most of them. Internet providers are privately owned (except Beltelecom), some of which have a state share, and competing with each other. The indicator remains the same as in 2005, 1.7 in 2006.

1.1.3. Some construction, infrastructure maintenance and other ancillary enterprises are state owned, others are private. Beltelecom is solely responsible for the maintenance of its networks. 2006: 2.0.

1.2. Operation

1.2.1. Beltelecom is an independent financial unit, but the Ministry of Communication and Information regulates the activities of Beltelecom. 2006: 1.3.

1.2.2. Officially, Beltelecom's long-term target is increasing its earnings and profitability. In reality, investment decisions are made upon approval of the Ministry of Communication and Information. Participation in the socially oriented governmental policies in the sphere of telecommunications are obligatory for Beltelecom. 2006: 1.7.

1.2.3. The mobile phone networks were developed by private operators. Private sector participates in service contracts and equipment supply by means of tenders. The state owned company Giprosvyas performs project works for Beltelecom. Private enterprises, as a rule, supply equipment for telecommunications; however, they are rarely assigned service contracts. 2006: 2.0.

1.3. Organizational structure

1.3.1. Only Beltelecom's hardware facilities can be employed for international traffic transfer. The network operation and phone user services are integrated. Beltelecom provides local, long-distance and international calls. Private companies provide mobile phone services, while long distance and international roaming to mobile operators belongs to Beltelecom. Beltelecom is the only primary Internet provider, while secondary Internet providers are mainly private companies that compete with Beltelecom for services. Beltelecom strengthens its positions in the Internet provision segment by providing new up-to-date services; competition in the sector in the segment of Internet with the state monopoly becomes more intense. Thus, the indicator for this parameter decreased somewhat in 2006 comparing to 2005: 1.7.

1.3.2. Ancillary businesses are independent legal entities. Cooperation between them and Beltelecom is based on tendering procedures, some of which are announced via the Beltelecom website. 2006: 2.3.

1.3.3. Regional companies remain integrated into Beltelecom. Local, long-distance and international phone services are centralized. There are no competing regional operators in telecommunications. 2006: 1.3.

2. Tariff reform

2.1. Structure of tariffs

2.1.1. Beltelecom's tariff policy remains under strong political influence. It is determined by the state policy priorities. Tariffs for local phone calls are set by the Ministry of Economy. Rates for international phone calls and charges for fixed network customer connections to the mobile networks are defined by Beltelecom. Internet tariffs and prices for mobile communications are set by providers. 2006: 2.7.

2.1.2. Local calls are subsidized by international calls. 2006: 2.3.

2.1.3. Mobile and Internet provider charges are competitive and cover costs. Charges for mobile and Internet services are constantly decreasing. 2006: 3.7.

2.2. Payments

2.2.1. Payments within the sector are regular. A certain level of indebtedness still persists in telecommunications, however it is gradually decreasing. 2006: 3.3.

2.2.2. Households cover the costs of telephone communications, charged by Beltelecom. In the case of non-payment they are disconnected. The arrears of legal entities are not significant and falling. 2006: 3.3.

2.2.3. The indebtedness level is low but is still not eliminated. 2006: 3.3.

2.3. State funding

2.3.1. The below-cost tariffs for local phone calls and the provision of other services to privileged customers are covered by profits generated by other Beltelecom activities (long-distance calls and Internet, e.g.). Some debt restructuring has taken place in the sector. Telephones used by state enterprises are not disconnected for nonpayment. 2006: 2.7.

2.3.2. State subsidies are not significant and primarily aid the building of new telecommunications networks and improving the access to telecommunication services in rural areas. 2006: 1.3.

3. Regulatory and institutional development

3.1. Effective regulatory institutions

3.1.1. The top management of Beltelecom is appointed by the Ministry of Communication and Information. The managements of the mobile phone operators and the Internet providers are selected by their shareholders. 2006: 2.0.

3.1.2. Beltelecom is a state enterprise. The telecommunications sector activities are regulated and controlled by the Ministry of Communication and Information. Mobile phone operators are not subordinated to the Ministry of Communication and Information, but the state (represented by Beltelecom) being the majority shareholder in them influences the decision-making. 2006: 1.3.

3.1.3. The rules of the sector's operation are determined by the legal acts. Administrative regulation is strong. The decision-making process is not open to the public scrutiny and is influenced by the government policies. 2006: 1.3.

3.2. Access regulation. Access is provided through tender allocation and operations licensing. 2006: 1.7.

GAS

1. Commercialisation and privatisation

1.1. Ownership

1.1.1 The main gas and distribution gas pipelines are mainly 100% state property despite Beltransgaz corporatization (the state owns 100% of shares). 2006: 1.7.

1.1.2. Transportation and distribution of gas are unbundled. Enterprises that form the concern Beltopgaz are mostly state enterprises. 2006: 1.3.

1.1.3. Construction, infrastructure maintenance and other ancillary enterprises are mostly state owned and/or are controlled by the state concerns. 2006: 1.3.

1.2. Operation

1.2.1. The Ministry of Energy regulates activities of Beltransgaz and Beltopgaz regional organizations (Oblgaz), but the enterprises function as independent financial units. 2006: 1.3.

1.2.2. Commercial goals are weak. Political influence on management and investment decisions prevail. 2006: 1.7.

1.2.3. The role of private sector grew in providing service for the gas sector. Therefore, the indicator was increased from 1.7 in 2005 to 2.3 in 2006.

1.3. Organizational structure

1.3.1. Gas transportation is separated from distribution and sales. The concern Beltopgaz deals with transportation and sales of gas to consumers. 2006: 1.7.

1.3.2. The enterprises that provide supporting services (delivery, installation) are separated economically and organizationally. Some of them left the holding. The indicator was increased from 1.7 in 2005 to 2.0 in 2006.

2. Tariff reform

2.1. Structure of tariffs

2.1.1. Price and tariff setting is still subject to strong political influence, and determined by state priorities in economic development. Economic activities are separated from regulatory functions. All important prices and tariffs are set by the Ministry of Economy. This ministry performs some functions of the regulatory body. 2006: 2.0.

2.1.2. Beltransgaz prices cover average costs. In 2006 the policy of cross subsidization was continued. Beltransgaz continued to receive a budget subsidy for reducing the mark-up. 2006: 2.0.

2.1.3. Overall revenues of enterprises that make up Beltopgaz cover costs. In general the system of price formation is based on the cost plus method. Gas prices for domestic consumers do not depend on the distance of gas delivery. Prices for some industrial consumers are below costs. There is no cross subsidization of households by industry. As cost recovery by tariffs increased, the indicator was also increased from 2.7 in 2005 to 3.0 in 2006.

2.2. Payments

2.2.1. In 2006, debts were reduced and the share of cash payments increased. The indicator was increased from 3.0 in 2005 to 3.3 in 2006.

2.2.2. Enterprises, especially in industrial sector, improved their gas payments. Nevertheless overdue debts of various consumers remain. 2006: 3.3.

2.2.3. Budget debts are low and they do not exceed the level of payment for monthly gas consumption. 2006: 3.3.

2.3. State funding

2.3.1. Some categories of consumers buy gas at preferential prices. In 2006 debt write-off were not practiced and the amount of state funding was reduced. The indicator grew from 2.0 in 2005 to 2.7 in 2006.

2.3.2. The procedure of granting subsidies lacks transparency and it does not target individual consumers. However, one-time subsidies were not given. The indicator was increased from 2.3 in 2005 to 2.7 in 2006.

3. Regulatory and institutional development

3.1. Effective regulatory institutions

3.1.1. The top management of Beltransgaz and enterprises of the concern Beltopgaz are appointed by the Ministry of Energy subject to approval by the President. 2006: 1.0.

3.1.2. The Ministry of Economy performs some regulatory functions in the sector. 2006: 1.0.

3.1.3. Administrative regulation is strong not only in management and decision making, but also in contract performance both of suppliers and consumers. There is no specific legislation that regulates the sector. 2006: 1.0.

3.2. Access regulation. In 2004 in order to increase openness and transparency in the sector, the tariff for gas transportation via the Beltransgaz pipeline was established. As well, network access to the low-pressure network of Beltopgaz by third parties was established. However, despite considerable improvements in access regulation there are still numerous administrative barriers for third parties access. 2006: 2.0.

ELECTRICITY

1. Commercialisation and privatisation

1.1. Ownership

1.1.1. The enterprises of Belenergo are mainly 100% state property. 2006: 1.3.

1.1.2. Generation, transportation and distribution of electric power are not unbundled and are mainly carried out by mostly state enterprises. 2006: 1.0.

1.1.3. Construction, infrastructure maintenance and other ancillary enterprises are mostly state owned and/or are controlled by state concern. 2006: 1.3.

1.2. Operation

1.2.1. Ministry of Energy regulates the activities of the Belenergo enterprises, but the enterprises function as independent financial units. 2006:1.3.

1.2.2. Commercial goals are weak. Political influence on management and investment decisions is prevalent. 2006: 1.7.

1.2.3. Construction and infrastructure maintenance are provided not only by the enterprises of Belenergo, some of which are private. The indicator was increased from 2.0 in 2005 to 2.3 in 2006.

1.3. Organizational Structure

1.3.1. There is no separation between production, distribution and sales. 2006: 1.0.

1.3.2. The enterprises that provide supporting services (delivery, installation) are separated economically and organizationally, some of them are parts of the concern. The indicator was increased from 1.7 in 2005 to 2.0 in 2006.

2. Tariff reform

2.1. Structure of Tariffs

2.1.1. The price and tariff setting is still strongly politically influenced. The Ministry of Economy sets all important prices and tariffs. Economic activities are separated from regulatory functions, some of which the Ministry of Economy is responsible for. 2006: 2.0.

2.1.2. Prices cover average costs of Belenergo. However, cross subsidization of heating by electricity still takes place. 2006: 2.3.

2.1.3. Overall revenues cover Belenergo's costs. In general, the system of price setting is based on the cost plus method. Electricity prices for domestic consumers do not depend on the distance of electricity transmission. In 2006, prices for some consumers were below costs. Tariffs for households remained to be maintained at the level below costs over the year. 2006: 2.0.

2.2. Payments

2.2.1. Since 2004, debts inside the sector were reduced and the share of non-cash payments among enterprises of the sector practically was liquidated. The indicator for 2006 was increased from 3.0 to 3.3.

2.2.2. The level of payments, especially among industrial enterprises, increased. In 2006 they paid fully for current electricity consumption. Nevertheless debts of various consumers remain. 2006: 3.3.

2.2.3. Budget debts are low and they do not exceed the average level of payment for monthly electricity consumption. 2006: 3.3.

2.3. State funding

2.3.1. Some categories of consumers buy electricity at preferential prices. New debts are restructured. In 2006 debt write-off were not practiced. The indicator was increased from 2.0 in 2005 to 2.7 in 2006.

2.3.2. The procedure of granting subsidies lacks transparency and it does not target individual consumers. One-time subsidies sometimes were not given. The indicator grew from 2.3 in 2005 to 2.7 in 2006.

3. Regulatory and institutional development

3.1. Effective regulatory institutions

3.1.1. Top management of the enterprises of Belenergo are appointed by the Ministry of Energy subject to approval by the President. 2006:1.0.

3.1.2. Only household tariffs are set externally from Belenergo (by the Council of Ministries). Belenergo declares tariffs to the Ministry of Economy. Belenergo is managed by the Ministry of Energy. 2006: 1.0.

3.1.3. Administrative regulation is strong not just in management and decision making, but also in the contract performance both of suppliers and consumers. There is no specific legislation that regulates the sector. 2006: 1.0.

3.2. Access regulation to the power lines network is provided by Belenergo, nevertheless it is not closed. 2006: 1.0.

Appendix 3
Infrastructure Indicators Evaluation

	Indicator	Railway		Roads		Telecommunications		Gas		Power	
		2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
1.	**Commercialization and privatization**	**1.5**	**1.5**	**1.7**	**1.7**	**1.7**	**1.7**	**1.6**	**1.7**	**1.4**	**1.5**
1.1.	**Ownership**	*1.3*	*1.3*	*1.5*	*1.5*	*1.7*	*1.8*	*1.4*	*1.4*	*1.2*	*1.2*
1.1.1.	Natural monopoly	1.3	1.3	1.0	1.0	1.3	1.7	1.7	1.7	1.3	1.3
1.1.2.	Potentially competitive businesses	1.3	1.3	1.7	1.7	1.7	1.7	1.3	1.3	1.0	1.0
1.1.3.	Ancillary businesses	1.3	1.3	1.7	1.7	2.0	2.0	1.3	1.3	1.3	1.3
1.2.	**Operation**	*1.8*	*1.7*	*1.4*	*1.4*	*1.7*	*1.7*	*1.6*	*1.7*	*1.7*	*1.7*
1.2.1.	Natural monopoly	1.7	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1.2.2.	Natural monopoly planning and investment decisions	2.0	2.0	1.3	1.3	1.7	1.7	1.7	1.7	1.7	1.7
1.2.3.	Private sector participation in service contracts	1.7	1.7	1.7	1.7	2.0	2.0	1.7	2.3	2.0	2.3
1.3.	**Organizational structure**	*1.4*	*1.4*	*2.2*	*2.2*	*1.9*	*1.8*	*1.7*	*1.9*	*1.4*	*1.5*
1.3.1.	Separation of natural monopoly and potentially competitive businesses	1.0	1.0	3.0	3.0	2.0	1.7	1.7	1.7	1.0	1.0
1.3.2.	Separation of ancillary businesses	1.3	1.3	2.0	2.0	2.3	2.3	1.7	2.0	1.7	2.0
1.3.3.	Decentralization	2.0	2.0	1.7	1.7	1.3	1.3	–	-	–	-
2.	**Tariff reform**	**1.5**	**1.5**	**1.8**	**1.8**	**2.7**	**2.7**	**2.5**	**2.7**	**2.5**	**2.7**
2.1.	**Structure of tariffs**	*1.7*	*1.7*	*1.9*	*1.9*	*2.8*	*2.9*	*2.2*	*2.4*	*2.1*	*2.1*
2.1.1.	Political vs. regulated operator's	1.7	1.7	2.0	2.0	2.7	2.7	2.0	2.0	2.0	2.0
2.1.2.	Natural monopoly pricing	1.7	1.7	2.0	2.0	2.3	2.3	2.0	2.3	2.3	2.3
2.1.3.	Potentially competitive businesses pricing	1.7	1.7	1.7	1.7	3.3	3.7	2.7	3.0	2.0	2.0
2.2.	**Payments**	*1.7*	*1.7*	*2.1*	*2.1*	*3.3*	*3.3*	*3.2*	*3.2*	*3.2*	*3.3*
2.2.1.	Intra-industry payments ratios	2.0	2.0	2.3	2.3	3.3	3.3	3.0	3.3	3.0	3.3
2.2.2.	Final consumers collection ratios	2.0	2.0	2.0	2.0	3.3	3.3	3.3	3.3	3.3	3.3
2.2.3.	Budget indebtedness	1.0	1.0	2.0	2.0	3.3	3.3	3.3	3.3	3.3	3.3
2.3.	**Budgetary funding**	*1.0*	*1.0*	*1.3*	*1.3*	*2.0*	*2.0*	*2.2*	*2.4*	*2.2*	*2.7*
2.3.1.	Subsidies level	1.0	1.0	1.3	1.3	2.7	2.7	2.0	2.0	2.0	2.7
2.3.2.	Subsidies procedure	1.0	1.0	1.3	1.3	1.3	1.3	2.3	2.7	2.3	2.7
3.	**Regulatory and institutional development**	**1.2**	**1.2**	**1.8**	**1.9**	**1.6**	**1.6**	**1.5**	**1.5**	**1.0**	**1.0**
3.1.	**Effective regulatory institution**	*1.4*	*1.4*	*1.8*	*1.8*	*1.5*	*1.5*	*1.0*	*1.0*	*1.0*	*1.0*
3.1.1.	Management selection of competitive businesses	1.3	1.3	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
3.1.2.	Independence of regulator, insulation from political influence	1.3	1.3	1.7	1.7	1.3	1.3	1.0	1.0	1.0	1.0
3.1.3.	Transparency of regulation	1.7	1.7	1.7	1.7	1.3	1.3	1.0	1.0	1.0	1.0
3.2.	**Access regulation**	*1.0*	*1.0*	*1.7*	*2.0*	*1.7*	*1.7*	*1.0*	*2.0*	*1.0*	*1.0*
	RC IPM indicator	**1.4**	**1.4**	**1.7**	**1.8**	**2.0**	**2.0**	**1.9**	**2.0**	**1.6**	**1.7**
	EBRD indicator	**1.0**	**1.0**	**2.0**	**2.0**	**2.0**	**2.0**	**-**	**-**	**1.0**	**1.0**

Sources: EBRD (2005): Business in Transition. Transition report 2005; EBRD (2006): Finance in Transition. Transition report 2006; IPM Research Centre estimates.

About the project

The joint project of the German Economic Team in Belarus and the IPM Research Center was launched in May 2003 with support of the Ministry of Economy (Germany) under the TRANSFORM program. The main objective of the project is to support the Belarusian government in the field of economic policy. To achieve this, the team of experts regularly prepares analytical papers on different topical issues and presents recommendations to the officials from the National Bank, the Ministry of Finance, the Ministry of Economy, the Ministry of Foreign Affairs and other institutions involved in the process of formation and implementation of economic policy.

Activities

- Regular analysis of the economy of Belarus;
- Monitoring of main sectors of the economy;
- Promotion of professional dialogue between Belarusian and German experts on important issues for the economic development of Belarus.

Team

German Economic Team in Belarus

Prof. Dr. Stephan von Cramon-Taubadel, agriculture and real sector, co-leader

Dr. Ricardo Giucci, macroeconomy and financial sector, co-leader

Robert Kirchner, macroeconomy and financial sector, consultant

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Dr. Igor Pelipas, monetary economics and applied econometrics, Director of the IPM Research Center

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Alexander Chubrik, M.A. in Economics, economic growth and monetary policy

Dzmitry Kruk, M.A. in Economics, banking sector

Anastasiya Glambotskaya, M.A. in Economics, M.A. in International Political Economy, international economics, entrepreneurship, telecommunications

Gleb Shymanovich, M.A. in Economics, transport sector and public finance

Analytical materials

Current research products and publications of the project group are available via the Internet (http://research.by/eng/get).

Belarusian Monthly Economic Review (BMER)

A monthly bulletin has been published since October 2002. It provides readers with recent news on politics and economics, covering such sectors of the economy as the real sector, structural trends, the external sector, public finance, monetary policy and the banking sector.

Policy Papers

Analytical materials on specific economic issues providing policy recommendations for the government and other organizations involved in the process of creating and implementing economic policy.

PP/01/05 *Guarantee Funds for SME Loans*

PP/02/05 *Presumptive Taxation of Agriculture: International Experiences and Implications for Belarus*

PP/03/05 *Reforms in the Belarusian Electricity Sector: How to Reduce Costs and Dependence on Imported Resources*

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PP/02/0 *Major impediments to private participation in urban transportation in Belarus*

PP/03/06 *Economics of Nuclear Power Development in Belarus*

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PP/05/06 *Abolishment of Turnover Taxes in Belarus: Economic and Fiscal Implications*

PP/06/06 *Independent Regulation in Infrastructure Sectors: The Case for Regulating Local Transportation Markets in Belarus*

PP/07/06 *The Telecommunications Market in Belarus: Problems and Recommendations*

PP/08/06 *The Effects on International Road Freight Transportation of the Protectionist Policies Concerning the Truck Manufacturing Industry in Belarus*

PP/09/06 *The Development of Credit Unions in Belarus*

PP/10/06 *The Macroeconomic Impact of Gas Price Increase in Belarus: Quantitative Assessment*

Belarus Infrastructure Monitoring

Monitoring of the current situation and the perspectives for the development of the energy, telecommunications and transport sectors in Belarus. The following sectors are monitored: electricity, gas, communication and communication services, railways and roads.