# Belarus Infrastructure Monitoring (BIM)

## 2009

Anastasia Glambotskaya, Elena Rakova,
Gleb Shymanovich, Georg Zachmann

Edited by Georg Zachmann

*Anastasiya Glambotskaya*, M.A. in Economics, M.A. in International Political Economy: IPM Research Center, Minsk, Belarus. Special focus on international economics, entrepreneurship and telecommunications.

*Elena Rakova*, Ph.D. in Economics, IPM Research Center, Minsk, Belarus. Special focus on the performance of the Belarusian energy sector, in structural and competition policy and enterprise reform.

*Gleb Shymanovich*, M.A. in Economics, IPM Research Center, Minsk, Belarus. Special focus on the performance of the Belarusian transport sector and public finance.

*Georg Zachmann*, Diploma in Economics, Berlin Economics, member of GET Belarus. Special focus on energy economics and econometrics.

A u t h o r s:
A. Glambotskaya, Dr. E. Rakova, G. Shymanovich, G. Zachmann

Edited by G. Zachmann

R e v i e w e r s:
Dr. R. Giucci; Dr. I. Pelipas

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The work provides analysis of reforms in railway, road, telecommunication, gas and electricity sectors in Belarus in 2007.

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**List of abbreviations**

**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

**EUR** – Euro

## Contents

## Foreword

This is the sixth 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 infrastruc-ture. The second section sets the agenda for the implementation of reforms in the Belarusian electricity sector that are needed to attract private, and in particular foreign, investments in the sector. 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 2008 infrastructure industries have seen no substantial structural changes and a continued reluctance to introduce market based pricing. The regulatory framework in the telecommunications sector became slightly favourable, whilst remaining unchanged in the road and transport sectors. The situation in the natural gas and electricity sectors improved with respect to the cost reflectiveness of prices but still lacks market reforms.

The **railway sector's** index has not changed, remaining at 1.4 with the railway operator Bela-rusian Railways preserving its monopoly status. The main change compared to 2007 is an ab-sence of concessionary tickets (except summer time). Earlier privileged passengers constituted around 20% of all passengers transported. Abolishment of concessionary tickets should lead to an increased share of costs covered by tariffs, but the possible effect was sidelined by freezing all other tariffs. Hence, cost coverage for suburban passenger transportation remained low (around 35%). As a result, cross subsidization between local and international passenger transportations did not decrease. In 2008 no changes in the ownership, structure, operation and state financing of the Belarusian Railways occurred.

The **road sector's** index has not changed either, but there were some changes within sub-indicators. Edict 760 from December 29, 2006 that introduces changes in legislation, that regulates en-trepreneurial activity came in force in 2008. Its provisions significantly worsened operation conditions for private passenger transportation, and lead to the deterioration of the subindex "Potentially competitive business" from 1.7 to 1.3. Private passenger transportation remained the subsector that restrained the road sector index. Another negative trend was a reduction of the Road Fund financing. It did not lead to a reduction of the index as it was offset by a decreasing share of the funds sources spent on agricultural issues. There were also some changes in legislation related to transit and freight transportation, that allowed to reduce the number of obligatory convoys. This allowed to keep the "Access regulation" subindex at the same level, despite a worsened situation in private passenger transportation.

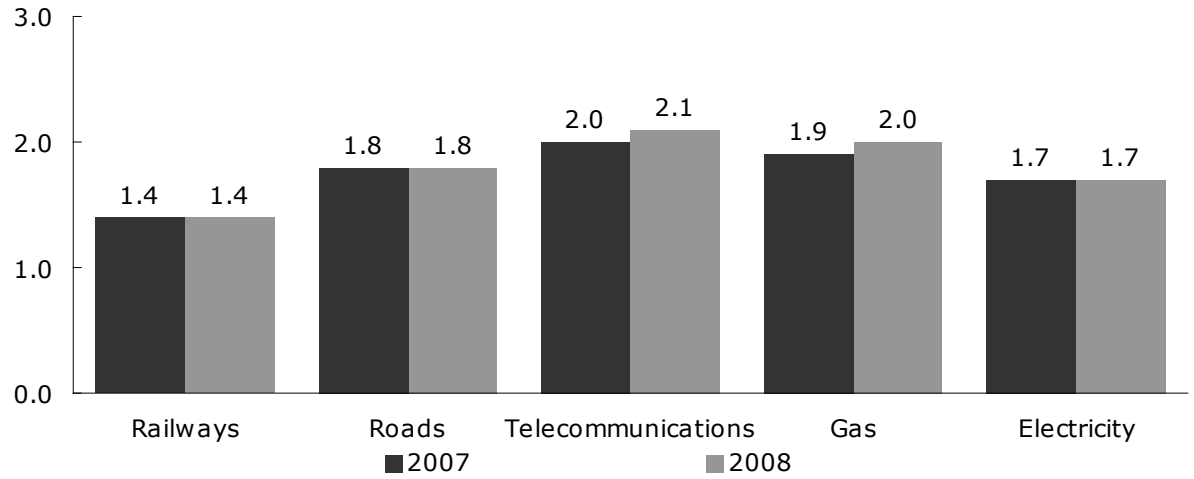
The **telecommunications**' index increased in 2008 comparing to the level of 2007 by 0.1, amounting to 2.1. There were no significant changes in the sector's regulatory environment, as the government postponed changes to the law "On Telecommunications", Beltelecom remained the monopolistic provider of the majority of telecommunications services (except mobile connections), but recent privatization deals and inflow of FDI allowed increasing the indicator somewhat. Some developments in 2008 were primarily associated with an increased competition for customers in the mobile and the internet access segments. The state share of another mobile operator (BeST) was sold to a foreign owner in the second half of the year. It brought some momentum to the market, as the operator aggressively strived to increase its market share. Although the profitability of the companies in the telecommunications sector in Belarus is relatively high, cross-subsidization in the landlines' segment and a high level of government's intrusion in the independent companies' operations lead to overrated tariffs for several telecommunications' services, and impede overall sector development.

In 2008 there were no considerable structural reforms implemented in the **gas sector**. As planned Gazprom acquired another 12.5% of Beltransgaz shares. Households' tariffs increased significantly but are still below cost. The mark up of Beltrasgaz was considerably increased. Improvement in payment discipline continued, although the debts of some consumers for previous year's consumption are not fully repaid yet, thus restricting possible investments in asset modernization. Slight changes in tariff setting policy and ownership allow to increase the index from 1.9 in 2007 to 2.0 in 2008.

No significant change was implemented in the **electricity sector** in 2008. Thus, despite still low natural gas prices and increasing tariffs the cash-flows of Belenergo remain in-

sufficient to finance the necessary investments. Despite three tariff adjustments in 2008 cross-subsidization continues to be an important issue. In general, due to the lack of essential changes, the index remained at the level of 2006 and 2007: 1.7.

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




Source: Own calculations.

# 2. Restructuring the Belarusian Electricity Sector: Setting the Agenda

## 2.1. Introduction

In the last decade, the question of restructuring the Belarusian electricity sector has been intensively discussed by politicians, energy sector actors and consultants. But, so far the discussions have not been conclusive. In addition, also the limited success of electricity sector reforms in neighbouring countries (namely Russia and Ukraine) supported the conservation of the post-Soviet status-quo. As, however, the Belarusian power industry is faced with new challenges the political will for reforming it increased recently. In contrast to some of their neighbours, Belarusian decision makers now have a very important advantage: Due to the late start, they can already rely on a wide international experience for the elaboration and implementation of a successful sector reform. This paper is devoted to the specification of the most critical questions for restructuring the Belarusian electricity sector and to elaborate policy rec-ommendations concerning the reform strategy.

The paper is organized in five parts: In the next section the current structure of the Belarusian electricity sector and the challenges it faces are described. In part three the case for privatization/liberalization in the Belarusian electricity sector is outlined. In the fourth part the questions to be solved in a successful reform process as well as corresponding international experience are introduced. In the fifth section the most critical questions are identified and the sixth section concludes.

## 2.2. Current Situation

*Structure of the Sector*

The electricity sector in Belarus is dominated by the state-owned generation[2], transmission and distribution holding "BELENERGO" that amalgamates the six republican unitary regional power system enterprises (Oblenergo), the central dispatch unit (ODU) as well as a multiplicity of electricity-related businesses (construction, R&D, repair and maintenance etc.).[3] Belarus has no specially appointed Transmission System Operator (TSO). Functions of TSO are distributed between the holding BELENERGO, ODU and the Oblenergos. The transmission assets are in state ownership and the regional power companies are assigned the right of economic management.[4] There are no independent power plants[5] and BELENERGO serves as single buyer of all (including imported) electricity.

Installed generation capacities are geographically distributed and centers of electricity loads are not near to the generation centres. Taking into account that regional power companies (Oblenergos) have a franchise for electricity supply in the corresponding region of the country there are considerable electricity flows (exchanges) between Oblenergos. Thus, some of the Oblenergos are net-consumers (deficit of installed capacities) while others are net-suppliers (extra-capacities) (see Table 1). The tariff on electricity exchanged between Oblenergo is approved by the Ministry of Energy and does not reflect

[2] Two condensing and 31 cogeneration power plants account for 97% of total installed electricity capacities in Belarus. The power system furthermore comprises 31 small hydroelectric plants with a total installed capacity of 12.9 MW (0.2%).

[3] See EnergyCharter (2007).

[4] EURELECTRIC & UCTE (2007).

[5] In January 2007, 7,654 MW of the 7,881 MW of total installed capacity were operated by BELENERGO. The remainder is in the ownership of municipalities and industry. These small power plants might be considered as independent, because they are allowed to sell electricity to the Oblenergos who have to buy it.

the real cost. The main target of the Ministry is to maintain the financial stability of the Oblenergos in accordance with the annual government plans and target values for social and economic activities.

**Table 1:**
Distribution of generation and supply of electricity between regional power companies in Belarus (2007)

| Regional power company (oblenergo) | Generation of electricity | | Supply of electricity to final consumers* | | Net deficit (-) or excess (+) |
|---|---|---|---|---|---|
| | bn kWh | % of total | bn kWh | % of total | bn kWh |
| Brestenergo | 4.3 | 12% | 2.1 | 7% | 2.2 |
| Vitebskenergo | 17.3 | 48% | 4.9 | 16% | 12.4 |
| Gomelenergo | 2.9 | 8% | 4.6 | 15% | -1.7 |
| Grodnoenergo | 1.1 | 3% | 2.8 | 9% | -1.7 |
| Minskenergo | 8.7 | 24% | 11.7 | 38% | -3.0 |
| Mogilevenergo | 1.8 | 5% | 4.6 | 15% | -2.8 |
| Total | 36.1 | 100% | 30.7 | 100% | -- |

* generation from independent power plants placed in the appropriate region included.
*Source*: Belenergo (2008) and authors' calculations.

There is no explicit "electricity law" in Belarus while laws on "trunk pipelines" and "gas supplies" exist. Sector regulation is carried out by the Ministry of Economy and the Ministry of Energy. While the former is responsible for electricity tariff regulation and the implementation of antimonopoly measures (in case of independent power plant construction)[6], the latter is concerned with investment policy and optimal development of the Belarusian power system. In general, electricity tariffs are regulated by the Ministry of Economy. Only one exception exists: Electricity tariffs for households are under regulation of the Council of Ministers of the Republic of Belarus (to protect households against tariffs increases). Tariff rates are adopted for each group of consumers. The classification of consumers for grouping has not principally changed since Soviet times[7]. Electricity prices in the residential, agricultural and commercial sector are subsidized while industry electricity tariffs are at (or above) cost recovering levels.

Currently, privatization of power grids and substations rated at 220 kV or more; power grids and substations rated at 0.4–110 kV etc. is forbidden by the Law of May 5, 1998 (as amended).[8] However, it is unclear to what extend the government itself feels bound to these rules as the sale of BELTRANSGAZ to GAZPROM in 2007 would have also fallen under this legislation.

*Challenges*

The Belarusian electricity sector currently faces various challenges. One of the most pressing concerns is how Belarus might meet the predicted generation capacity requirements. While today's capacity is still sufficient (in 2007 the maximum load was 6,200 MW and the generation capacity was 7,882 MW), the load forecasts (8,000–13,000 MW in 2020)

[6] Consequently, on might conclude with caveats, that a certain department of the Ministry of Economy is a germ of an independent regulatory agency in the energy sector.
[7] There are ten groups of consumers: (1) Industrial and equated consumers with installed capacity 750 kVA and more; (2) Industrial and equated consumers with installed capacity less than 750 kVA; (3) Electrified railway transportation; (4) Electrified urban transportation; (5) Non-industrial consumers; (6) Electricity for heating and hot water supply; (7) Electricity for industrial needs of agricultural consumers; (8) Electricity for auxiliaries of the power engineering; (9) Urban households; (10) Rural households.
[8] See EnergyCharter (2007 p.11f).

as well as the fact that around 60% of the power plant fleet are worn out point towards a severely tightening ca-pacity situation (see Table 2).[9]

**Table 2:**
Peak Load Demand Forecast, MW

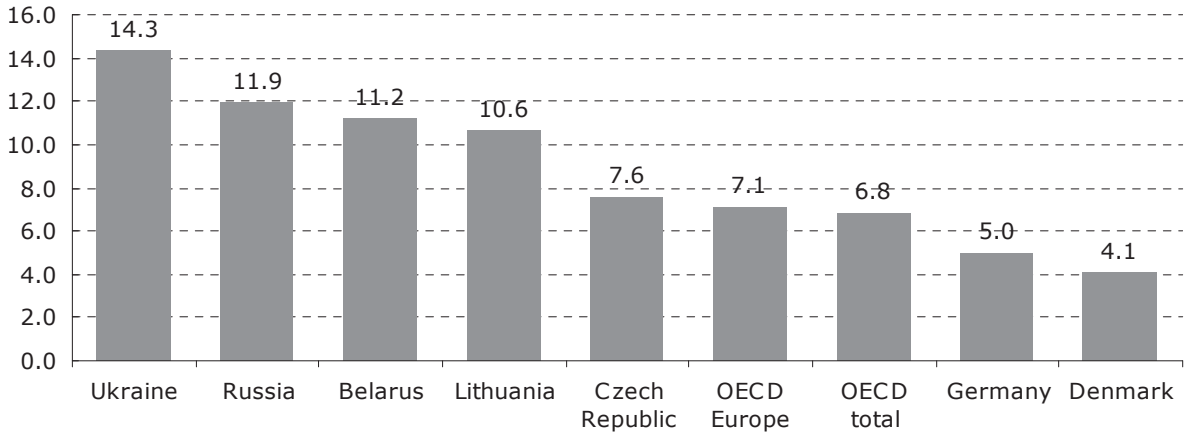
| Year | World Bank | London Economics | IAEA | BTPI (2007), Peak Load | BTPI (2007), Installed Capacity |
|---|---|---|---|---|---|
| 2010 | 9,600–10,390 | 6,610–8,300 | 8,530 | 7,012 | 8,900 |
| 2015 | 10,970–11,760 | 7,450–9,360 | 9,670 | 7,814 | 9,900 |
| 2020 | 12,410–13,310 | 8,400–10,560 | 10,950 | 8,970 | 11,000 |

*Source:* IAEA (2003) and Belarus Thermal and Power Institute (BTPI).

A second challenge for the Belarusian electricity sector is its unbalanced power plant portfolio. Currently, approximately 90% of Belarusian electricity generation capacities are fuelled with natural gas. In times of increasing prices for importing natural gas from Russia[10] and the related international energy policy concerns, Belarus is supposed to develop alternative fuel sources. The problem is aggravated by the fact that the efficiency of most Belarusian generation units is below Western standards. Thus, average generation costs in Belarus are significantly above the regional average. At a natural gas price of USD 200, the pure fuel cost of produc-ing one MWh of electricity amount to USD 58/MWh and USD 65/MWh at the two big non-CHP facilities in the country. Those represent together 46% of the Belarus generation capacity. Thus, it is most likely that they very often act as marginal suppliers.

A third challenge is the low efficiency of the infrastructure part of the Belarusian electricity sector. The Belarusian electricity grid has seen underinvested for more than 10 years which led to huge investment requirements and big electricity losses. For example in Belarus in 2007 the losses of electricity for transportation and distribution reached 11.28% (see Figure 2). While this value is lower than in Russia (11.9%) and Ukraine (14.3%) it is almost twice as much as the OECD average (6.8%). Thus, significant efficiency potential exists. Nevertheless, from 2006 to 2007 the loss rate slightly increased.

**Figure 2:**
Transmission and distribution losses of electricity in different countries (2006)

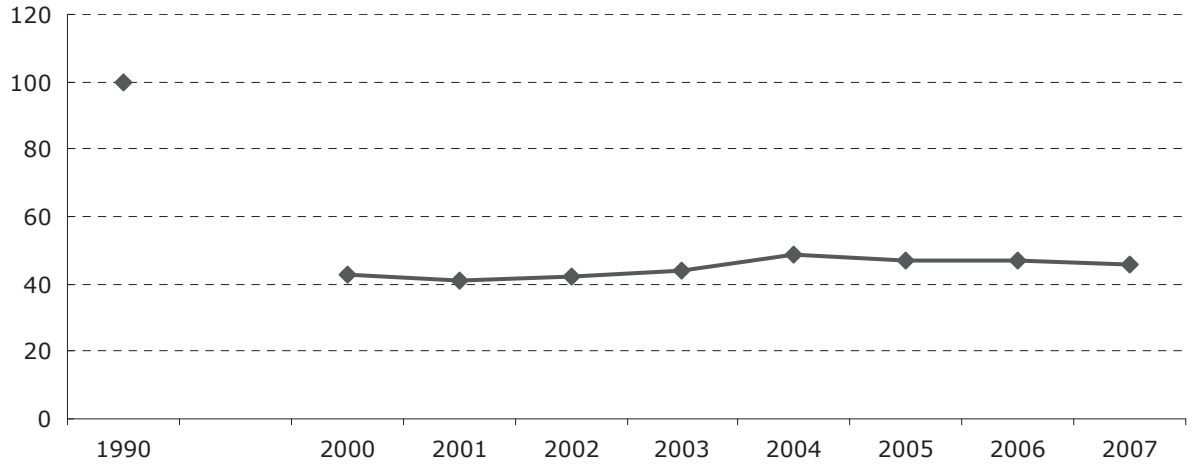



*Source*: IEA (2008) /Electricity information.

[9] On the capital depletion see for example: Hirschhausen and Rumiantseva (2006).
[10] According to a contract with Russia, natural gas prices for Belarus are expected to increase to "European level minus cost of transit" by 2011.

A forth challenge is the low labour productivity in the Belarusian energy industry and the lack of incentives for energy supply cost reductions. One of the most important economic indicators to assess the efficiency in state-regulated companies is the labour productivity. The dynamics of the labour productivity index is presented in Figure 3. In 2007 the labour productivity was 46% of its 1990 value. But even in 1990 the efficiency of the electricity sector was not as high as in Western countries. Thus, significant efforts are necessary to reduce cost and increase labour productivity to attain best practice standards.

**Figure 3:**
Index of labour productivity in the Belarusian electricity sector (1990 = 100)




*Source*: Belstat, authors' calculations.

The fifth challenge is the lack of transparency. Due to the vertical and horizontal integration it is impossible to assess the cost of generation, transmission and distribution on an entity-byentity level. This situation does significantly impede the efficient management of the Belarusian energy sector. Consequently, decisions on investments, scheduling and cost reduction programs cannot be based on an economic comparison of cost. Unstable and comparatively low profitability (see Table 3) discourages investors and barriers to cost reduction result in increasing tariffs. Furthermore, the non-transparent and outdated system of cost accounting does not allow identifying the centers of inefficiency in the electricity supply chain.

**Table 3:**
Profitability and cost dynamic of the Belarusian electricity sector (%)

| | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Profitability of sales | 8.9 | 12.6 | 11.1 | 12.9 | 8.4 |
| Decrease (-), increase (+) of cost to 1000 rubles of productions sold with respect to previous year | -7.7 | 3.7 | -0.3 | -0.9 | 6.9 |

*Source*: Belstat, authors' calculations.

### 2.3. The Case for Privatization/Liberalization in the Belarusian Electricity Sector

Assuming that 60% of the generation capacity (60% of 7,894 MW = 4,700 MW) have to be replaced and additional 2,500 MW have to be installed by 2020, new power plant capacity in the size of 7,200 MW must go online. At an average unit cost of 2,500 USD/kW this would amount to an investment need of USD 18 bn. In addition, 60% of the existing

transmission and distribution system have to be renewed. This implies an additional USD 4.8 bn (60% of USD 8.8 bn = USD 4.8 bn)[11]. Given these rough estimations the total investment needs will be in the environment of USD 20 bn – 30 bn from now to 2020.[12] The official estimation of investment needs tend to be closer to the half of the lower bound of our calculations mostly because a part of the outdated generation and network capacities are planned to be refurbished and not replaced.

The replacement of worn out infrastructure and the necessary capacity extension of the Belarusian electricity system will put significant stress on BELENERGOs budget. Given that the subsidized tariffs did not allow BELENERGO to accumulate sufficient reserves, the required investments cannot be self-financed. In fact, BELENERGO claims that they invested USD 480 m in 2007.[13] Extrapolating this number until 2020 would amount to less than USD 8 bn. As the USD 480 m include state budget funds, credits and are used for investments outside the electricity sector (housing, heat-networks etc.) the true replacement investments in the electricity sector self-financed by BELENERGO are supposed to be significantly lower.

Thus, some form of outside finance will be necessary to prevent a degradation of the Belarusian electricity infrastructure. This finance might either come from the state budget or might be provided by domestic or foreign investors. As the state budget is unlikely to be able to accommodate the corresponding financing requirements of up to 50% of current annual GDP the most promising approach is to attract investors.

This, however, requires significant changes in the electricity industry. Private sector involvement will only occur in conditions where investments are not subject to extensive (regulatory) risk and can be profitably exploited. It is obvious that the willingness to pay for existing electricity infrastructure assets as well as the willingness to invest in this sector strongly depend on the commitment of the administration to provide (and maintain) an adequate set of rules. Changes in price regulation, taxation (of extraordinary profits) or even re-nationalisation are a threat to investors they can hardly insure against. As the break-even periods for electricity infrastructure investments are extremely long, administrative decrees on a case-by-case basis cannot provide the necessary long-term commitment. Rather, it has to be incorporated in the general legislation.

Consequently, an electricity industry reform that targets long-term private sector involvement should not aim to provide short-run profit opportunities for investors but to create a well balanced (and thus durable) compromise of all stakeholders (electricity industry, small and large consumer, environment, administration etc.). Thus, the objective of electricity market reforms is to create an efficient and sustainable electricity sector. Efficiency means that the best use is made of the existing infrastructure while sustainable signifies that the welfare-maximizing in-vestments are carried out.[14]

In Europe, Belarus is one of the last countries that has not attempted to reform its electricity sector. While this might have meant lost opportunities in the past it also allows

[11] For the assumptions of the estimation see Table 4 in the Appendix.

[12] The estimate should be considered with caution. Though the official load forecasts tended to be too high in the past it might underestimate the true investment needs, as only the current replacement investments are considered. In the next 12 years an even larger part of the existing installations might require replacement.

[13] The sources of this USD 480 m are: own resources (52%), the state budget (31%) and credits (17%). As the state budget part consists (due to Belarusian accounting) mainly of reserves set aside by BELENERGO more than 80% of the investment sum is done out of the funds of BELENERGO.

[14] To illustrate this point one might look at international examples: In Chile labor productivity in Endesa's generation business increased from 6.3 GWh generated per employee in 1991 to 34.3 in 2002. (cited from World Bank (2004)). According to OFGEM distribution cost in the UK decreased by 50% in the last 16 years.

Belarus to learn from (the often very mixed) experience in other countries. Though, it quickly becomes clear that the "devil is in the details" (which will be discussed in the next section) some general rules are rather uncontested. Those should be presented here and provide a first outline for a possible reform in Belarus:

**(1) First restructure, than privatize:** As described above, liberalization (i.e., allowing competitors to enter the market) and privatization (i.e., selling state owned enterprises) are interwoven. Thus, each of them can only be successfully accomplished jointly with the other. Selling state owned companies in a fully vertically integrated market would create difficult to regulate private monopolists with low intrinsic investment incentives. Although, the efforts for unbundling would be lower and the privatization revenues might be higher (selling not only the assets but also a monopoly rent) total welfare will significantly decrease. On the other hand, opening a market in which a dominant incumbent is active will not create sustainable competition. New entrants would only enter the market if somebody (usually the government) could assure their profit against market power exercising strategies of the incumbent. Such guarantees are hard to implement without biasing incentives. Therefore, restructuring (i.e. horizontal and vertical unbundling of the business activities) of the incumbent should be followed by chunk wise privatization.

**(2) State-owned transmission grid:** So far, no country has (to our knowledge) be able to create proper competition based incentives for network extensions. Relying on merchant transmission investments (investors build a line out of their own pocket to generate arbitrage gains from buying cheap in one region and selling expensive in another) leads to significant underinvestment as the positive externalities of network enforcements are not remunerated. These positive externalities can only be centrally calculated which makes effective "competitive network extensions" unfeasible. As furthermore the transmission system is considered as a natural monopoly, either strong handed regulation of a private independent transmission system company or a transmission system under direct state control are sensible choices. The privatization of the transmission system suffers of the information asymmetries between the regulator(s) and the company. The corresponding cost might surpass the efficiency gains from the leaner organization of private companies. This is illustrated by the fact that allocating human capital to "regulation departments" often has higher payoffs for companies than allocating manpower to efficiency improvement measures. On the other hand state owned transmission companies might be faced with potential political involvement and inefficiently bureaucratic management structures. Regional policy (uneconomic lines to remote areas), labour policy (offer-staffing), industrial policy (subsidies to certain consumer), social policy (subsidies to the residential sector) as well as nepotism might be tempting playing fields for politicians to muddle in management decisions of transmission companies. Despite these caveats (that equally apply to the current situation of a state-owned vertically integrated model) many countries have demonstrated that a good regulatory framework and its enforcement are able to make state owned transmission companies a success (e.g., Nordic markets).

**(3) Regulate distribution grids:** In Western Europe (Germany, United Kingdom) good experience has been collected for regulating privatized distribution system operators (DSOs). Yardstick competition has been made operational with modern efficiency frontier methodologies and private investments in central Europe (Czech Republic, Hungary) demonstrate that companies are willing to invest in their quality of service if proper incentives are in place. The Oblenergo might for example be transferred into (well regulated) DSOs.

**(4) Privatize horizontally unbundled generation:** Privatizing generation not only provides funds for the state budget it also stipulates efficiency enhancement investments and generation extension. But privatizing the generation branch of the incumbent as one company would mean creating an incontestable monopolist. International experience

shows that this monopolist will have lower efficiency investment incentives and higher prices and has thus to be heavily regulated (Belgium).

**(5) No subsidies:** A sustainable market is only possible if the cost of consuming electricity is signalled to the consumer via prices. Neither social and industrial policy nor artificial price smoothing should be carried out via electricity price (cross-) subsidization. Their existence hampers investments, distorts production and consumption decisions and gives additional power to the incumbents that organize them.[15] Price distortions for households, to give one example, imply incentives for switching from district heating to electric heating. This is not only inefficient (double conversion of energy) it also puts the district heating system (under usage) as well as the electricity distribution system (over usage) in danger.

**(6) Do not wait too long:** Currently the interested investors from Western Europe have very deep pockets due to the potential exercise of market power (Germany, France) as well as the windfall profits generated by the free allocation of emission allowances (Germany, France) and their low cost power plants (France). Thus, E.on, RWE, EdF and others are desperately searching for new investment opportunities to not exaggerate their annual profits which might increase political pressure in favour of horizontal (France) or vertical (Germany) unbundling or even (partial) expropriation.

### 2.4. Questions to be solved for a successful Liberalization of the Belarusian Electricity Sector

Liberalization and privatization of an electricity sector is a large-scale and risky endeavour. Examples from other countries show that both, brilliant success (United Kingdom) and terrible failure (California) are possible. However, the high economic importance of the electricity sector makes failed reform-experiments an expensive undertaking. Therefore, the complexity of such a reform should not be underestimated – it is again highlighted, that the devil of electricity market restructuring is in the detail. Taken the general reform blueprint from the last chapter as given, the main questions to be solved for a successful electricity sector reform in Belarus should be outlined but not answered in this section:

*Generation*

**(1) Number of Companies:** Taken as given that the generation branch of BELENERGO will be vertically and horizontally unbundled the question arises how many generation companies should be created. This decision has to balance the scale efficiencies of fewer bigger units with the lower market power potential of a greater number of smaller units. Due to its high concen-tration – 3 condensing power plants account for about 50% of installed capacities and the 6 largest power plants account for more than 75% – the Belarusian electricity sector will remain concentrated. For a sensible decision, the potential of cross-border competition from Ukraine and Russia has to be taken into account. As scale efficiencies of power generation vanish above 4,000 MW, two to three companies might sustainably compete in the Belarusian market.

**(2) Monopoly on the fuel side (natural gas):** One difficulty for a fragmented generation sector in Belarus would be its dependence on Russian natural gas. If (what is not completely unlikely) one generation company is sold to GAZPROM (or its Belarusian affiliate BELTRANSGAS) this might create significant market power problems. GAZPPROM might have the ability to control the fuel prices of its electricity generation competitors in Belarus as those rely almost completely on natural gas imported from Russia. Consequently legislation should be prepared to circumvent the corresponding problems.

[15] On the effects of replacing flat tariffs (a form of subsidizing peak-consumer) by time differentiation see Zachmann and Zaborovskiy (2008).

**(3) Cost attribution of CHPs:** In Belarus 52% of installed electricity capacity is situated in combined heat and power plants (CHPs). After restructuring the vertically integrated regional companies the "heating assets" will probably have to be split out (at least legally). But some of the CHPs are outdated and uneconomic. Due to local resistance and their role in centralized heating it will be very difficult to implement closing decisions even though they might be economically justified. Thus, a very significant challenge in reforming the Belarusian electricity sector is the handling of CHPs. This is especially important in an environment of shrinking heat demand (increasing energy efficiency, deindustrialization). Consequently, the development of a viable heat market model for Belarus is crucial. European countries with important shares of CHP might provide a role-model here. Denmark was able to set up viable cost-attribution schemes that took into account that heat markets are natural regional monopolies while electricity is sold in wider competitive markets.[16] Those were complemented by tools to discourage the installation of secondary electric and gas heating.[17]

**(4) Horizontal reintegration:** For the government body who decides on the initial unbundling the number and size of new entrants, the extent of cross-border trade, the development of demand etc. are impossible to predict correctly. Thus, the unbundling decision might turn out suboptimal ex post. Thus, the question arises whether the initial choice might be revised and who is responsible for allowing companies to (partly) reintegrate. Therefore, a certain flexibility to revise ineffective structures has to be carefully weighted against a credible commitment of the legislator to defend the market layout. An independent merger control authority might thus be the right place to situate this responsibility.

*Wholesale Market*

**(5) Cross-border trade:** Belarus is and will be an electricity importing (and sometimes exporting) country. Therefore, the organization of cross-border trade with its closely linked neighbours (Russia, Ukraine) is of high importance. Currently, trading is carried out by BELENERGO. In periodic negotiations with Russia and Ukraine volumes and prices of baseload bands are agreed upon. This is not very efficient given the high variability of electricity demand and the differences in the generation portfolios of these three countries. Short-run scheduling of international flows based on hour-sharp price signals could be significantly more economical for both, exporters and importers. In situations, for example, where Belarus has problems to absorb all the electricity its CHP produce in a heating-period night or where its gas-fired condensing plants do not run at full capacity (and thus below their technical efficiency) in peak period it might consider exporting electricity if prices in Russia are sufficiently high. Organization of cross-border trade depends on the selected market model. If the current model was maintained electricity trade could continue to be centrally organized. But even in this case BELENERGO might consider short-run scheduling of imports when Russian electricity prices are below marginal generation cost. If, however, a model with supply side bidding was chosen the question arises how transmission capacities are allocated. Experience from the Nordic markets and BELPEX shows that in highly interconnected markets, implicit auctioning of transmission capacities is a sensible choice. This is however only possible if market structures in the involved countries are sufficiently homogenized (See also Box 1).

[16] Note, that the elasticity of demand at the centralized heating systems is lower that at the wholesale electricity markets, so if generation companies can posses heating assets they will able exercise market power at the heat market establishing special margin to heat tariffs and lowering electricity price in competitive environment.

[17] Municipalities have the right to impose compulsory connection to DH networks and to forbid new electrical heating installations in DH areas.

**Box 1: Joining the Russian electricity market**

*Advantages:*

— Belarus could rely on a readily established (and reality tested) set of rules.

— Russia is already the main electricity trading partner with strong interconnections.

— Joining the Russian marked would increase the number of competitors and the market liquidity at the relatively small Belarusian market.

*Disadvantages:*

— Loss of regulatory power over certain decisions

**(6) Market model:** Another important question is the selection of an adequate market model. Single buyer models (See Box 2) as well as voluntary (United Kingdom) or obligatory pools (Spain, Italy) have been implemented in many markets around the globe.[18] The most common approach in Europe is currently voluntary pools. At those, the contracting is mainly carried out by a parallel system of power exchanges and over-the-counter (OTC) trading. But, it is unclear whether the relatively small Belarusian market (with its maybe three generation companies and some importers) might successfully accommodate a power exchange. The Slovenian and the Polish example show that either a certain number of generators or sufficient transmission capacities (to functioning neighbouring markets) are necessary to create adequate liquidity at the power exchange. Consequently, Belarus might be tempted to follow the Belgium and Danish example to join a bigger market area via implicit auctions (e.g. Russia). Or Belarus might go for an OMEL type (Spain) obligatory pool with strong handed market monitoring to hamper collusive behaviour.

**Box 2: Is the Single Buyer Model (SBM) an option?**

The SBM consists of a (usually government-owned or guaranteed) entity that contracts the electricity of independent producers and potentially a state-owned incumbent. In many developing and transition as well as in some developed countries the SBM was considered as a valid solution for pressing electricity sector problems. The general perception is that the SBM might solve capacity problems relatively quickly, while the long-term cost exceeds those of a market approach.

*Advantages:*

— As no sector restructuring is necessary the SBM
does not require human capital,
does not create political resistance;

— Makes capital available relatively quickly;

— Can be combined with numerous features of planned economies:
subsidies, discretionary interventions in scheduling and investment decisions.

*Disadvantages:*

— Usually manifests a non-market based electricity sector for the long-run
(long term PPA are difficult to settle under market conditions);

— Excludes all the important "by-products" of market solutions
(efficiency gains, subsidies, etc);

— Usually required government guarantees for the single buyer company implying long-term obligation of the state (quasi fiscal deficit). This might become crucial if electricity does not develop as expected;

— Direct government interference in investment decisions and scheduling decisions are more difficult to rule out under the SBM and might produce unwanted results;

— Tendency of the SB to over-invest on the expense of the consumers (or tax payers).

[18] On the already existing quasi-fiscal deficits see Tochitskaya, I. (2007).

**(7) How to provide short-term and long-term price signals:** To our knowledge the question of efficient investment stipulating long-term prices remains unsolved in all electricity markets. Second best solutions like long-term contracts or third best solutions like state guarantees and vertical integration are still discussed in Western markets. It is too early to conclude if capacity markets like those in the US and Russia are appropriate tools to assure efficient investment decisions at reasonable cost.

**(8) Interrelation between market and system operator:** Currently, ODU is a single system operator responsible for optimal scheduling the power plant fleet. In a new environment the functions of electricity trading and power system operation will be separated. Thus, a mechanism for an optimal interaction of these two services has to be developed.

*Transmission, Distribution and Supply*

**(9) How to handle transmission congestion:** Internal congestion is not a big issue in Belarus. Thus it is unclear whether the effort to introduce local marginal prices (LMP) would be justified. Instead, unlikely cases of congestion might be for instance solved by the system operator and included in the transmission tariffs. But it should be noted that congestion handling will become an issue if vertical separation does not take place. In this case, their might be incentives for the incumbent to use congestion management to increase its generation market share by creating congestion for the new entrants.

**(10) Vertical integration:** While it is widely agreed that the transmission and distribution grid operations should be separated from the rest of the sector, there are two views on vertical integration of suppliers and generators. The first camp underlines the scale economies and risk-reduction of such a structure and the second one highlights its market power potential. As also in the most advanced market (the UK) the reintegration of suppliers into generators is allowed and actually carried out the potential benefits of integration outweigh the associated risks. A market oversight authority might be empowered to examine complaints of independent suppliers that feel discriminated by integrated generator-suppliers.

**(11) Retail Competition:** The question on what is a good threshold for market opening has been widely discussed in Europe. However, the different thresholds have had no dramatically different effects. In fact, commercial and industrial consumer do switch while residential consumer mainly do not, even if allowed. Thus, no prohibiting switching is a sensible approach as it is a market based regulative for incumbent suppliers not to inflate prices.

*Regulation Authority*

**(12) Responsibility:** Electricity sector regulation encompasses different tasks: network price regulation, market monitoring, anti-trust, etc. A responsible institution for each task has to be determined. These duties might either be merged into a one-stop agency or be established in independent organizations. In the latter case it should be assured that tasks among different agencies do not overlap to a large extend as this generates costly regulatory uncertainty.[19] The obligations and powers of all oversight institutions have to be clearly defined and match their responsibilities. It should be assured that adequate powers are given to the regulators to allow them to bargain with the electricity industry. Furthermore, regulation without sufficient information is impossible. Therefore, regulators should have the right to obtain the relevant data while assuring the privacy of commercially sensible information.

**(13) Independence:** It is important to assure independence from government, political pressure and industry while providing the agency/ies incentives for proper work. The imple-

[19] Like in Germany, where we see a coexistence of regional and central regulation authorities, an anti-trust authority as well as regional and central ministerial powers with respect to electricity price setting.

mentation of corresponding incentive structures and legal hierarchies is a challenging task. Obtaining and maintaining skilled, motivated and independent personal is another critical issue for regulatory authorities especially in countries with underfinanced public sectors.

**(14) Future of the Ministry of Energy:** After restructuring the Ministry of Energy will be transformed and its functions will be changed significantly. A clear understanding of the possible transformation is necessary.

*Other Issues*

**(15) Supply Security:** For final customers it is important that clearly defined delivery targets, and penalties for failure to meet them are determined.

**(16) Balancing:** The establishment of liberalized markets creates the necessity for determining balancing requirements for certain market participants. In the reform process it has to be decided who is responsible and by which means (physical, financial) he can meet its obligations. Furthermore it must be decided who provides balancing and other ancillary services, how the corresponding cost are calculated and who has to pay them.

*Process of privatization*

**(17) Tender, auction or "beauty contest":** Privatizing large infrastructure assets is a legally complex matter. Obtaining the maximum revenue for the state while assuring the compliance with certain side-conditions (e.g. employment guaranties) can be attained by different procedures. The World Bank has in 2007 identified the following lessons for a transaction strategy, which emerged from the privatization experience in the power sectors of Eastern Europe: "(1) Privatization through transparent international competitive bidding among prequalified investors results in the most sustainable privatization deals. Negotiated privatization does not even save time (for example, Estonia) and often leads to unsatisfactory terms to the sellers. (2) Offer majority shares to attract strategic investors in a manner that enables them to implement prudent investment and operating decisions. In any case, the strategic investor must have management control.

**(18) Evaluation of the potential value:** In the process of privatization it will be important to know for both, the government and the investors, what the value of the corresponding assets is. Otherwise, overly optimistic expectations might delay privatization or (intentional) underestimation might result in state property being sold below value. Thus, a transparent estimation of the asset value is also helpful to prevent corruption.

**(19) Treatment of existing debts and obligations:** When unbundling BELENERGO the question must be solved to which party existing debts, obligations and arrays are attributed. The more clear this question is solved in advance, the lower the legal uncertainty and thus the higher the potential privatization revenues.

**(20) General feasibility of privatization:** Before all privatization attempts, a general question has to be answered positively: Could the current Belarusian administration credibly commit to a long-lasting sector restructuring and insure investors against expropriation under potentially changing political circumstances?[20] If this is not the case, investors will only acquire assets at a significant discount with respect to their true value. This discount will represent a risk premium.

**(21) Existing legislative and non-legislative barriers:** Laws are, as a rule, complemented by decrees, ordinances, rules and other normative acts that establish procedure and conditions of application. Those often introduce additional burdens on investors and a considerable uncertainty. Thus Belarus should strive to continue its effort towards streamlining procedures and regulations which is already showing first results.[21] Examples include way-rights, land ownership, taxation etc.

[20] For certain central European countries the (planned) membership in the EU provided, despite volatile political leadership, a credible commitment.

*Social cost of liberalization/privatization*

To complete such a large scale reform will necessarily produce winners and losers. Thus, decision-makers will have to make sure to have sufficient support for the reform to not to be interrupted at the half-way.

**(22) Identification of potential loser:** On important step to increase the political acceptability of such a large-scale reform is to identify the potential loser. Resistance to the reform is usually expected from potentially redundant employees in the overstaffed electricity industry, currently subsidized customers and certain political actors that might lose responsibilities in the process.

**(23) How can they be compensated:** The subsequent question is then, how these losers can be compensated to not jeopardize the success of the reform. Social tariffs and subsidization of certain industries can be replaced by lump sum transfers; former employees might obtain some compensation etc.

**(24) Emission Reduction:** To reduce regulatory uncertainty the administration should endeavour to credibly commit to an emission reduction target and scheme. Otherwise investment decisions might be distorted or postponed.[22]

### 2.5. Identification of Critical Questions and Outlook

All considered questions are very important for a successful restructuring of the Belarusian electricity sector. And the list is far from being comprehensive. Each of these subjects must be carefully studied at some point in time. However, one can select six questions that should necessarily be addressed first as they are decisive for the subsequent analysis.

These questions are: 1) The model of competitive electricity market; 2) The right of access to the wholesale trade; 3) The type of retail competition (if this competition necessary); 4) The price mechanism for wholesalers and retailers; 5) The investment mechanism after restructuring (how investments will work); and 6) The heat market organization.

To answer these questions, and more importantly to gain broad support for the answer found to be optimal, a quantitative assessment of the following scenarios is required:

**(1) Status-quo conservation:** This scenario is necessary to be able to compare all reform scenarios to the current situation. Moreover, it is required to demonstrate the necessity of restructuring the Belarusian electricity sector.

**(2) Regulated single buyer:** This scenario implies vertical integration of the incumbent with possible long-term contracts for independent suppliers. Special guarantees for foreign and domestic investors are assumed.

**(3) Unregulated single buyer:** Competition at the supply side only. Retail consumers are not allowed to purchase electricity at the wholesale market and regional companies have franchise for electricity supply in the corresponding region.

**(4) Competition at the supply and demand side at the wholesale market, but monopoly at the retail market:** At the demand side operate electricity distribution companies to have franchise for electricity supply in the corresponding area. The third party access to the transmission (high-voltage grid) is established.

**(5) Fully competitive model:** Third party access to the transmission and distribution grid, competition at the wholesale and retail markets.

The task for the future is thus to test the models described above in order to obtain quantitative answers that can be use in the decision making process.

[21] Doing Business Report of the World Bank 2008.

[22] The "Atomausstieg" (nuclear phase-out) of the German government is a good "bad example". As the electricity industry is unsure whether this decision is credible it postpones investments in other (less economic) generation technologies to see what happens first.

## 2.6. Conclusion

Restructuring and privatization is necessary to assure future electricity supply at reasonable cost. The success of privatization is mainly dependent upon prior restructuring, which is needed to provide a legal background, transparency, and appropriate market conditions for investors to enter the market. Credible long run political commitment is essential to stimulate appropriate investments. Therefore, the initial electricity market design should reflect best international experiences, i.e. "a trial and error approach" is not suggested.

The above outlined questions should be addressed in close cooperation of Belarusian stake-holders and international experts. Starting with the general problems one can subsequently address the more specific technical questions. Ignoring the rich international experience provided by dozens of successful and failed electricity sector reforms would be an expensive waste of public funds.

As a first step to overcome political resistance the general economic favourability should be demonstrated quantitatively by comparing the potential outcomes of certain reform options with the status quo.

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**Table 4:**
Transmission and Distribution network replacement value

| | Existing lines in km | Assumed cost in USD/km | Replacement value of existing network in US Dollar |
|---|---|---|---|
| 220–750 kV transmission lines | 6,950 | 500,000 | 3,475,000,000 |
| 110 kV transmission lines | 16,570 | 150,000 | 2,485,500,000 |
| 35 kV transmission lines | 11,920 | 20,000 | 238,400,000 |
| Air-voltage power lines 0,4–10 kV | 204,250 | 10,000 | 2,042,500,000 |
| Cable lines | 28,540 | 20,000 | 570,800,000 |
| **Total** | **268,200** | | **8,812,200,000** |

## 3. Belarusian Infrastructure Policies in 2008

Belarus' economic system can be characterized as a state directed economy with private participation in some sectors. The infrastructure sector remains almost entirely in state ownership with only minor – strongly regulated – private participation in telecommunication (mobile) and transportation (street transport).

Reforms in infrastructure in 2008 were mainly concerned with tariff policy (increases tariffs for households, reduction of cross subsidization, policy towards equal and even tariffs for different customers) and the maintenance of strict payment discipline. The efforts in this domain are important, however, not sufficient and consistent. Extensively discussed ownership reforms in infrastructure industries have still not been implemented, however, there are plans to start corporatization and privatization (mainly in railways and telecommunications). Lack of competition, overregulation, state dominance, numerous distortions and weak incentives and insufficient investment are among main characteristics of the sectors.

The corresponding lack of proper incentives and foreign investments partly explains the decreasing performance of the infrastructure industry. Especially the lack of investments exacerbates the current difficulties of Belarus economy, namely negative trade and payment balances. Nevertheless, market oriented structural reforms in industries and infrastructure are no priority of the government.

The economic crisis could be a catalyst which fasten implementation of reforms. Lack of foreign currency and budget financing would stimulate tariff increases and search for foreign investment. Privatization of some assets could be a sound decision. However, in order to attract investor, the government would have to change different regulation and reform the "rules of the game" in the sectors. Still we do not expect further restructuring and privatization to be realized in 2009 due to the time-consuming governmental procedures of discussion and approvals.

Reforms in the **transport sector** remained inconsecutive. No attempts were made to reform Belarusian Railways, a monopolistic railway operator and service provider, nor public street transportation companies. However, there were discussions on the necessity to reorganize Belarusian railways into a state-owned joint-stock company and separate the social infrastructure. The concept of this reorganization was prepared jointly by the Belarusian railways and the National Academy of Science, but it has not been approved yet. Until now, the automobile transportation is more open to competition compared to the railway transportation, though state-owned providers of road transportation services generally receive more favourable treatment than their private competitors. Besides, private passenger road transportation is suppressed by the forced transformation from the status of private entrepreneurs to the status of legal entities, which implies more bureaucracy, more restrictions and higher charges/taxes. The positive moment in transport sector regulation was the increase of guarantees on TIR carnet for Belarus to EU levels, which helped to reduce the number of cases of obligatory convoy, which was the main factor hindering transit through Belarus.

Although the government takes some nominal steps in bringing **telecommunication sector** developments towards international standards (WTO in particular), e.g., by selling shares in the mobile operators to foreign owners, the real competition in the sector remains inexistent, and an outdated regulatory framework persists. Although the changes to the law "On Telecommunications" were prepared with the aim to liberalize and demonopolize the sector, they were minor and did not actually rule out the monopoly status of Beltelecom[23]. The changes were approved by the Council of Ministers in October 2008.

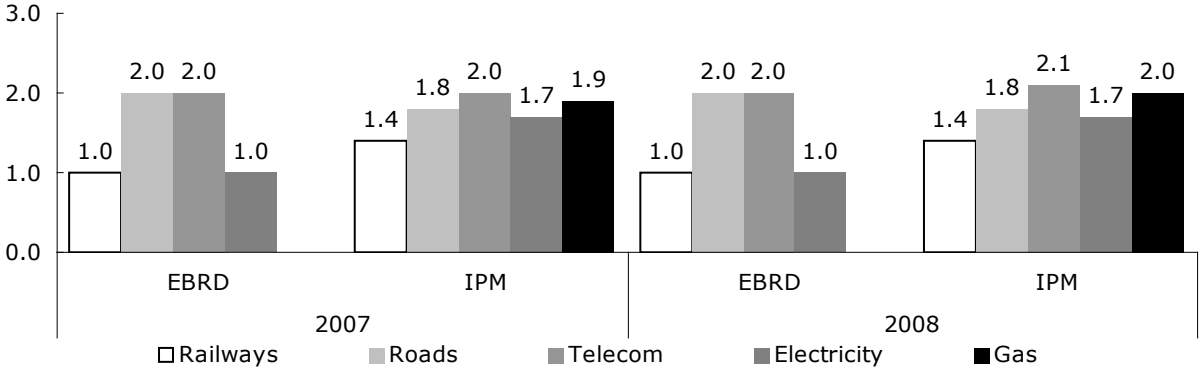
[23] The draft of the law included changes to the procedure of networks' linking within the country;

The president declined the changes to the law in December, 2008 for the reason of prematurity of such changes. According to state officials, this transition should be steady not to bring problems for the citizens.[24] Thus, there are no clear plans for real liberalisation in the sector, 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. Current consumption of imported natural gas and electricity was paid on time and in cash. External overdue debts were paid off and current debts for energy consumption were significantly reduced. The practice of tariff setting kept being non-market while cross-subsidization remains. The government keeps household tariffs at artificially low levels. Besides, there is cross subsidization of heat by electricity. As a result, most industrial consumers face high electricity tariffs which hurt their competitiveness. The generally low end user energy prices affected the financial results of the energy enterprises, thus restraining investment in new equipment and technologies. At the beginning of 2009 the Ministry of Energy offered to the government a scheme of electricity sector restructuring (vertical unbundling), however, it was rejected due to lack of argumentation and technical shortcomings. The government does not see restructuring per se as a mechanism for improving efficiency in the sector while for comprehensive reforms and changes it seems to be not yet ready. Privatisation and setting up an independent regulatory organ in the sector are not in the discussion.

There are only minor differences between the EBRD and the IPM Research Center indices (Figure 4). Due to the finer scale used by the IPM Research Center the indices of reforms in railway and electricity sectors are higher than those of EBRD, while reforms in the road sector received a slightly lower grade. Both EBRD and the IPM Research Center experts did not find much progress in implementing reforms in any sector of the Belarusian infrastructure.

**Figure 4:**
Infrastructure reform indices for Belarus




*Sources*: EBRD (2008): Growth in Transition, Transition report 2008; EBRD (2007): People in Transition, Transition report 2007; IPM RC estimates.

provisions for the elimination of underrated tariffs (lower than costs); removal of limitations on the number of telecommunications operators. At the same time, the draft preserved the monopoly of Beltelecom in international connections and other fields. (Ministry of Economics, Draft of the law "On Telecommunications", http://www.mpt.gov.by/new/modules/news/article.php?storyid=338).

[24] Belarusian News, dated 20.12.2008, "Lukashenko did not support changes to the law "On Telecommu-nications" http://news.tut.by/it/124709.html.

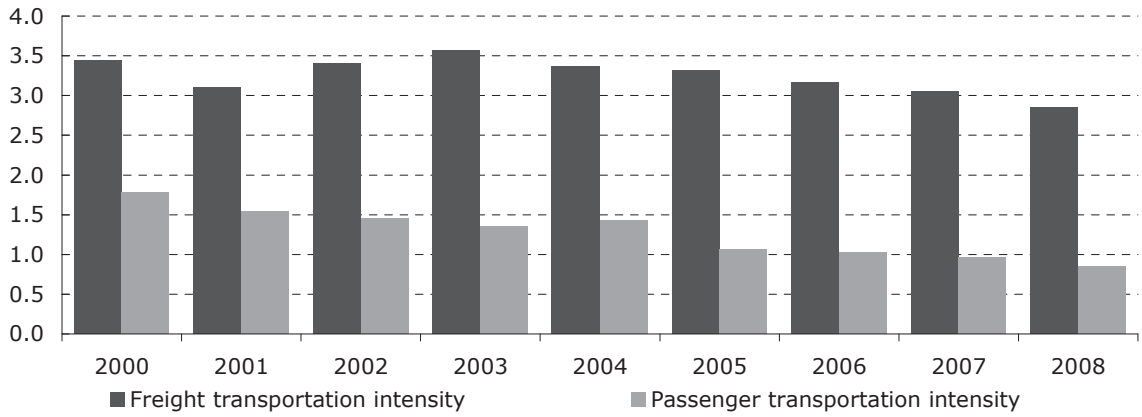
## 3.1. Railways

### 3.1.1. Progress in 2008

Belarusian Railways (BR) remains a sole operator and provider of transport services. Its structure remained unchanged in 2008. It is still engaged in many non-core activities including 29 healthcare institutions, 14 cultural units, some sport and education institutions as well as farms. Thus, a substantial part of revenues gained from transportation services is still being spent on financing non-core activities.

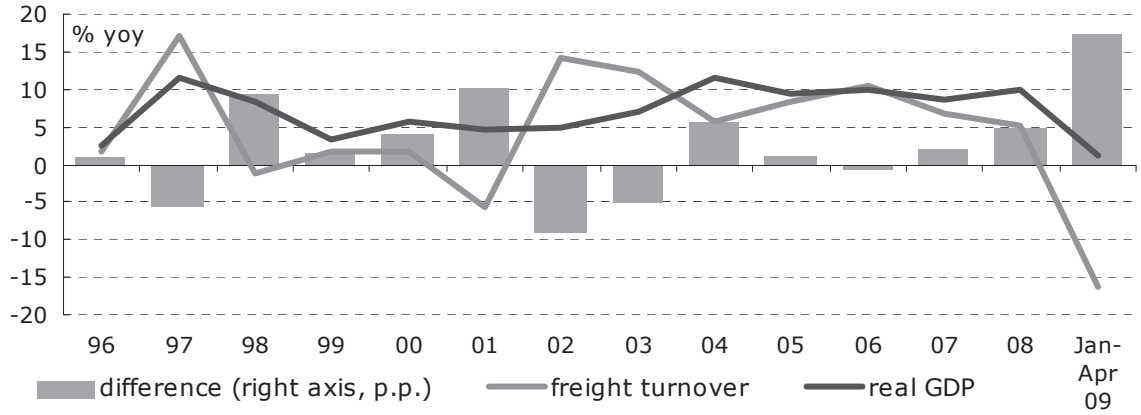
The freight traffic of BR grew in 2008 just by 2.4%. Most of this growth was accumulated in the first quarter of 2008, while in the second half of the year the traffic was actually equal to the one of 2007. At the same time the economy of Belarus was reported to keep high growth rates (10% real GDP growth in 2008). These circumstances implied steep reduction of freight transportation intensity by 7.0% (Figure 5).[25] The global economic crisis took a further toll on the Belarusian economy in the beginning of 2009 and railway freight traffic fell further by 17.4% yoy in the first quarter. This led to an overall freight traffic reduction by 15.8%. However, GDP grew at the same time by 1.1%. This gap between growth of transportation and GDP, which are usually highly correlated (see Figure 6), is explained by the fact that GDP growth in early 2009 was fuelled by changes in inventories.

**Figure 5:**
Railway transportation intensity




*Source*: own calculations based on data of Belstat.

**Figure 6:**
Freight turnover and real GDP growth




*Source*: own calculations based on data of Belstat.

[25] Fright traffic intensity is measured as a ratio of freight volume to GDP in real terms (tone-km per 1.000 BYR of 2000). Passenger transportation traffic intensity is measured as a ratio of passenger traffic volume to population (thsd passenger km per capita).

The volume of passenger traffic kept on falling in 2008. It decreased by 12.4% and its intensity by 12.3% respectively (Figure 5). There are numerous factors that caused this decline. It is growing income of population (in the first half of 2008) and a resulting preference to travel on personal cars; declining mobility of population, as rural areas are dying out and younger generations are losing motivation to visit their places of birth; an abolishment of concessionary tickets (excluding summer time, when concessionary tickets are still available for pensioners) in case of suburban transportation, that fell by 24.3%. Besides, global economic crisis reduced volumes of international transportation (3.2% reduction). Another factor, affecting the volume of international railroad passengers is growing tariffs. In 2008 they grew by 23.6% that exceeds both the consumer and service price index.

Tariffs for suburban and national passenger transportation remained unchanged. The outcome of such price stability are growing losses of BR (as price levels in Belarus, measured in CPI, grew by 14.8% yoy), which are partly compensated by the gains from abolished concessionary tickets, and increasing cross-subsidization between passenger and freight transportation. Currently tariffs cover only 35% of the costs of internal passenger transportation (the same rate as in 2006, and a bit higher than in 2007). Besides, growing tariffs for international passenger transportation increase the cross-subsidies of domestic passenger transportation by international one.

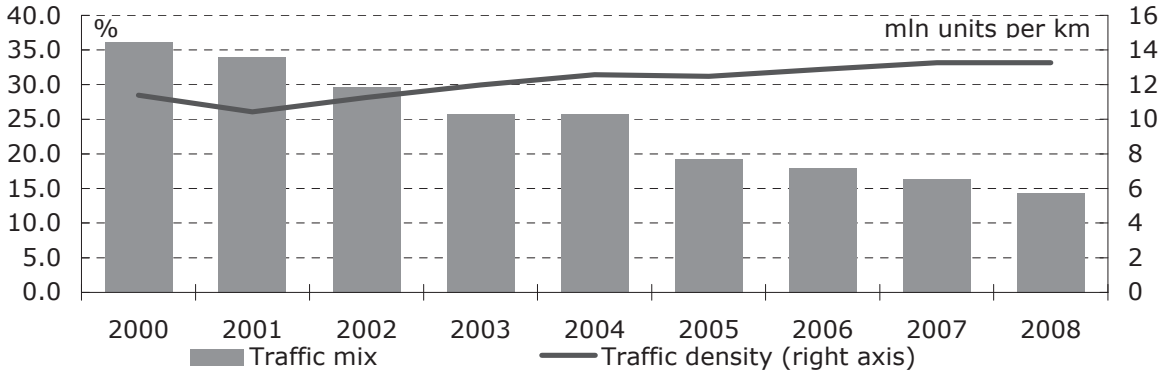
National and international freight tariffs in 2008 grew by 18.3% and 26.1% respectively. The growth rate of national freights tariffs exceeded both the consumer and service price index. At the same time it was the third consecutive year in which tariffs for domestic freights grew slower than for international (Table 5), thus increasing the corresponding cross-subsidization.

**Table 5:**
Price indices of railway transportation services, yoy

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|
| Freight transportation | | | | | | | | |
| international | 230.5 | 118.2 | 117.6 | 107.1 | 106.2 | 114.4 | 116.5 | 126.1 |
| domestic | 207.8 | 139.2 | 135.5 | 157.5 | 113.0 | 109.3 | 111.4 | 118.3 |
| Passenger transportation | | | | | | | | |
| international | 183.7 | 140.2 | 132.4 | 151.5 | 112.1 | 117.3 | 128.6 | 123.6 |
| national | 251.4 | 197.4 | 141.7 | 117.0 | 109.5 | 111.3 | 113.3 | 100.0 |
| suburban | 269.2 | 202.9 | 162.0 | 134.8 | 120.0 | 120.4 | 117.9 | 100.0 |
| Consumer price index | 161.1 | 142.6 | 128.4 | 118.1 | 110.3 | 107.0 | 108.4 | 114.8 |
| Service price index | 216.8 | 193.4 | 161.9 | 121.2 | 112.0 | 113.2 | 108.8 | 106.9 |

*Source*: Belstat.

**Figure 7:**
Trends in railway transportation environment




*Source*: own calculations based on data of Belstat.

Overall conditions for railway operations remained favourable in 2008.[26] The share of passenger transportation significantly decreased to 14.3% (Figure 7), while traffic density remained unchanged at 13.3 m units per km, which is a high level compared to other CEE and CIS countries.[27] Such developments guarantee, on the one hand, a declining need for cross-subsidization, and on the other, lower fixed costs related to maintenance and operation of the railway network. Despite these positive trends, BR suffered losses of BYR 677 bn (BYR 129 bn of national freights, BYR 294 bn of suburban passenger transportation, and BYR 252 bn of national passenger transportation). Consequently, BR requires timely reforms to sustain the global economic crisis and the corresponding decline in available public financing.

### 3.1.2. Reform agenda

The most discussed problem faced by railways is the abolishment of cross-subsidization between passenger and freight transportation, that causes losses for BR. This can be achieved by forcing passengers to cover a greater share of costs while providing the most sensitive (to railway tariffs increase) part of population with direct income compensation, and by increasing national freight tariffs (that are much lower compared to Russia or Ukraine).

Another important reform issue is the abolishment of all non-core activities and splitting of core activities into separate lines of business. In the beginning of 2008 these issues were officially raised by BR top-management. It proposed to restructure BR into a state-owned joint-stock company, separate social infrastructure from the company, and allow private carriers to operate on the railways. So the dialogue regarding the reform agenda has begun, but whether, how and when they will be implemented is still unclear. By the end of 2008 a reorganization concept was prepared by BR and National Academy of Science, but it has not been approved yet. So far, no concrete steps were made or even announced. However, there are discussions of the inevitable participation of Russian Railways in a potential privatization of BR.

The restructuring can be carried out in the following steps:

— Initially, Belarusian Railways should pass its social infrastructure holdings such as housing facilities, hospitals and kindergartens to state or local governments. Production plants, farms and service companies should be separated from the company;

— Government should create a clear regulatory framework by separating the economic activities of the railways from its regulation. An independent regulator for this sector would ensure that investment and other decisions are not influenced by the concerted interests of consumers of transportation services or by railway construction companies. Later on it could 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, the economic activities in this sector should be divided into separate companies. Initially these companies should form a holding. Then, with a suitable regulatory frame-work in place and occurring incorporation, it will be possible to consider privatization in the sector.

[26] These conditions can be evaluated by traffic mix proportion of passengers and traffic density Traffic mix characterizes the share of passenger traffic in total traffic (sum of passenger and freight traffics). Traffic density is a ratio of total traffic per 1km of railroads.

[27] For international comparison see Amos, P. (2005). Reform, Commercialization and Private Sector Participation in Railways in Eastern Europe and Central Asia. The World Bank Group Transport paper #4, p. 2. The highest traffic density is in Russia (19.4 m units per km m units per km), while Belarus holds the second place. The traffic mix ratio in Russia, for instance, is 9% (21% in Ukraine).

## 3.2. Roads

### 3.2.1. Progress in 2008

The situation in the road sector remained largely unchanged in 2008 compared to previous years.[28] The road fund, main source of financing road programs, accumulated BYR 1903.1 bn or 1.5% of GDP. It is 0.8% of GDP less than in 2005, when the fund reached its maximum volume. This quite sharp reduction forced Belavtodor to start attracting credit resources to finance its programs. As a result in 2008 2.7% of the road fund was spent on interest payments (according to data from the last version of the law "On road fund expenditures" in 2008). The practice of spending road fund resources on agricultural issues was preserved in 2008 and accounted for 13.7% of the fund total expenditures. The direct result of this is that 93.3% of the roads are operated with the delayed interrepair period[29].

In 2008 the freight transportation sector suffered from external shocks. At the beginning of the year the carriers felt pressure from the high prices for petroleum products. The sharp decrease of oil prices in autumn was accompanied by the economic crisis that lead to a significant reduction of production worldwide, trade and freights respectively. Another outcome of the crisis was increasing arrears in the freight payments. Despite the described unfavourable circumstances the volume of freight transportation in Belarus increased by 23.1% and its intensity grew by 11.9% (Figure 8). Export of freight transport services rose by 39.5% which is only partially explained by tariff growth: As shown in Table 6 international freight tariffs grew by 13.9%. The domestic freight tariffs growth rate (15.1%) slightly exceeds the CPI level. The growth of freight volumes can to some extend be attributed to the liberalization of registration, licensing and other procedures that started in Belarus in 2008. Besides, the foreign visa issuing procedure for drivers was simplified thanks to efforts of the Ministries of Transport and Foreign Affairs. Another important issue was, that the State Transport Committee managed to persuade International Union of Auto Transport to increase the sum of guarantees on the TIR Carnet for Belarus from USD 50 thsd to EUR 60 thsd, the level that meets EU requirements.[30] Another issue, that influences the development of freight transportation, is the number of licenses that Russia issues to Belarusian carriers. In 2008 the number of these licenses was increased by 12% and it remained unchanged in the first quarter of 2009, despite the Russian policy to decrease the overall number by 10% each year (and by 30% in 2009[31]).

The policy of forcing out private carriers from the passenger transportation market continued. The edict 760[32] that seriously hampered private passenger transport perspectives remained in force. It made private carriers either to close the business, or to register drivers as separate individual entrepreneurs, which is costly, or to reregister as a legal entity (usually as a private unitary enterprise). The latter usually made business suffer losses due to high administration costs, taxes, increasing costs for technical inspection and repair due to cashless settlements. While private carriers, that remained individual entrepreneurs, lost long-term transportation contracts, as they are allowed to drive the

[28] For more detailed analysis see IPM Research Center (2007). Belarus Infrastructure Monitoring 2007, Minsk http://www.research.by/eng/bim/2007/.

[29] http://neg.by/publication/2008_11_04_10529.html.

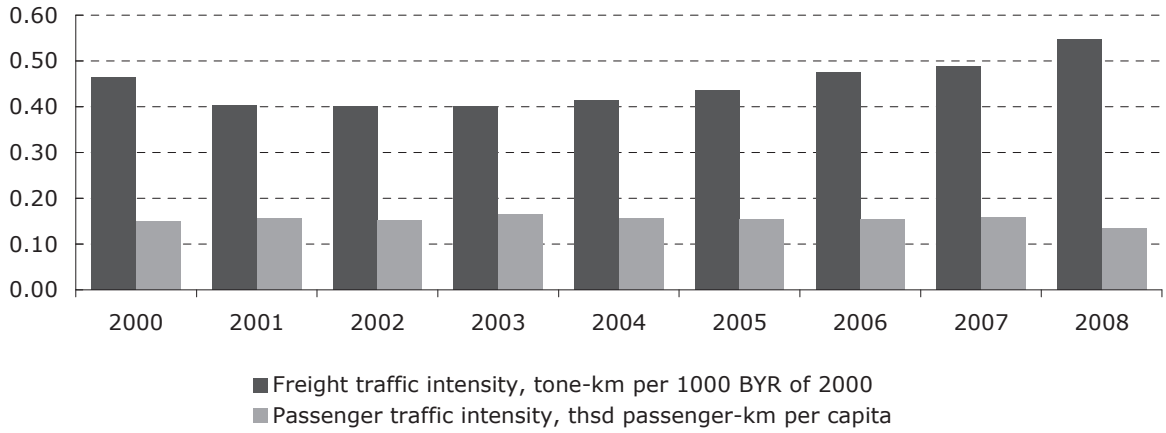
[30] http://www.belta.by/ru/news/archive?date=08_01_2009&page=2&id=319027. Since January 1, 2009 insurance companies guarantee up to EUR 60 thsd on TIR Carnet for Belarus. This allowed to reduce cases of obligatory convoy through the territory of Belarus by 2 times. Earlier this convoy was applied (at the expense of the carrier) each time the possible customs payments (import duties) for the goods transited were higher than USD 50 thsd.

[31] http://neg.by/publication/2009_02_20_11005.html.

[32] Edict 760 from December 29, 2006 introduced changes in legislation, that regulates entrepreneurial activity.

auto only 15–17 days per month, and according to the edict 760 they are prohibited to hire other drivers. Besides, the legislative failure to divide the functions of principal (contractor) from operator remains unsolved. The only positive development in 2008 was the cut of revenue tax from 10 to 8% for small enterprises that use the simplified accounting system. The presence of the mentioned barriers caused reduction of passenger transportation volume of private carriers[33] by 54.8% in 2008. They accounted only for 4.7% of all passenger traffic (9.2% in 2007). The overall passenger traffic (and its intensity) fell by 14.7% (14.6% respectively). In contrast to past years passenger tariffs in 2008 grew slower than average price level: Suburban and intercity tariffs increased by 4.6% yoy (with a CPI of 14.8% in 2008). However, the abolishment of concessionary tickets should be taken into account. It is a prime factor (alongside with the global economic crisis) that caused this reduction in real terms. As a result auto transportation suffered growing losses in 2008 of 3.7% (in 2007 loses were 2.0%), proving the inefficiency of the sector and the need for reforms.

**Figure 8:**
Auto transportation intensity




*Source*: own calculations based on data of Belstat.

**Table 8:**
Price indices of auto transportation services, yoy

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|
| Freight transportation, incl | 163.6 | 137.2 | 138.4 | 125.8 | 111.6 | 108.7 | 110.7 | 114.0 |
| international | — | — | — | — | 106.8 | 106.7 | 107.4 | 113.9 |
| domestic | — | — | — | — | 113.7 | 109.6 | 111.6 | 115.1 |
| Passenger transportation | | | | | | | | |
| suburban | 172.5 | 213.7 | 151.0 | 150.4 | 123.3 | 119.6 | 113.3 | 104.6 |
| interurban bus | 168.5 | 175.3 | 136.7 | 135.9 | 126.2 | 113.5 | 113.2 | 104.6 |
| Consumer price index | 161.1 | 142.6 | 128.4 | 118.1 | 110.3 | 107.0 | 108.4 | 114.8 |
| Service price index | 216.8 | 193.4 | 161.9 | 121.2 | 112.0 | 113.2 | 108.8 | 106.9 |

*Source*: Belstat.

[33] The data represents the passenger transportation volume only of individual entrepreneurs.

### 3.2.2. Reform agenda

A sustainable development of the road network requires an improvement of financing of road construction and maintenance. By abandoning to finance activities not related to the road industry from the road fund additional financial scope could be gained. 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.

High import duties on vehicles and high tax burden in general hamper competitiveness of Belarusian carriers compared to carriers of other countries. To make it a level playing field, it is necessary to lower the duties on imported trucks. Instead, it was announced the possibility of introduction 15% import duty on EURO-5 trucks (0% now), that are not yet produced in Belarus. Besides, carriers are lobbying abolishment of agricultural levy, reduction of tax on profit and differentiation of labour tax according to the economic sector. At the same time it is equally important to start the restructuring and privatization of state-owned trucking companies.

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, equal access to routes etc) in order to maintain an urban passenger transportation market. The roles of contractors and operators of transportation services should be legislatively separated. The right to operate the market should not be granted to companies providing 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. It is also necessary to decrease the tax burden on private carriers, as their transition to legal entities was accompanied by an increase the tax burden. Calculations of the trade union of "Sadruzhnast" showed that the unified tax levied on sales volume should be decreased for private passenger carriers to 5% to guarantee them some level of profitability.

Since all public transportation companies now operate at a loss, the government needs a strategy for their restructuring. 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.

## 3.3. Telecommunications

### 3.3.1. Progress in 2008

The main developments in the Belarusian telecommunications sector in 2008 were the following:

— Long-awaited changes in telecommunications sector regulation have not been implemented. In October, 2008 the draft of the Law "On Telecommunications" was adopted by the lower chamber of the parliament. It assumed limitations of the monopoly of Beltelecom.[34] In January, 2009 the draft was declined by the president.

[34] Beltelecom belongs to the Ministry of Communications and Informatization and operates under its direct supervision. Beltelecom is the "national telecommunications operator", implementing state policies in the sector. Beltelecom's monopoly applies to external telecommunications as well as the distribution of international traffic for the independent private operators.

— Privatization deals in the sector continued in 2008. In July, 80% of shares of the third Belarusian GSM operator BeST were sold to the Turkish company Turkcell at USD 500 m (+ USD 100 m in case of profits gained by the operator in the first year after the deal).

— At the end of November the 'renewed' BeST under the brand name "live:)" started operation in the market with an aggressive marketing policy, which has brought momentum to the market.

Despite several attempts to change the legal framework, the sector continued operating under the Law "On Telecommunications" (2005). The Program of Telecommunications Development in Belarus for 2006–2010, and the State Program of Rural Sector Development for 2005–2010 (paragraph of telecommunications)[35] have also remained unchanged. Different telecommunication technologies remain differently treated in Belarus. The internet infrastructure, the land-lines etc. still belong to Beltelekom. Independent providers rent it from Beltelecom. The mobile infrastructure is privatized. Still, Beltelecom controls cross-plugging between them. Beltelecom also owns the external communication channels.

The work on amendments to the law "On Telecommunications" has been in progress for several years. The amendments aim at telecommunications sector deregulation and cancellation of the monopoly of Beltelecom. The draft of the law was close to adoption at the end of 2008, but it was cancelled at the last moment by the president. According to the Ministry of Communications and Informatization's officials, if the amendments to the law are adopted, Beltelecom will loose around BYR 30–35 bn per year from the loss of control of cross-plugging operations between the mobile operators[36]. It will also experience losses from the elimination of its monopoly in the external internet traffic. Taking into account the "social obligations" of Beltelecom, the opponents of the reforms suggest, that prior to telecommunications market liberalization, there should be a steady and secure transition to the new terms of operation. For this reason tariffs for postage and telephone connections should be brought to the level that covers the costs at least. For example, the landline subscription fee for the population covers 46.1% of Beltelecom's costs (41% in 2007); for legal entities – 71.7% (64% in 2007). Time rates for the local calls cover 76% and 114.4% of Beltelecom's costs respectively. At the same time, losses from the provision of local telephone communications services by Beltelecom are covered by the overrated tariffs for international calls. Increase in tariffs for local connections should go in line with the decrease in tariffs for international connections.

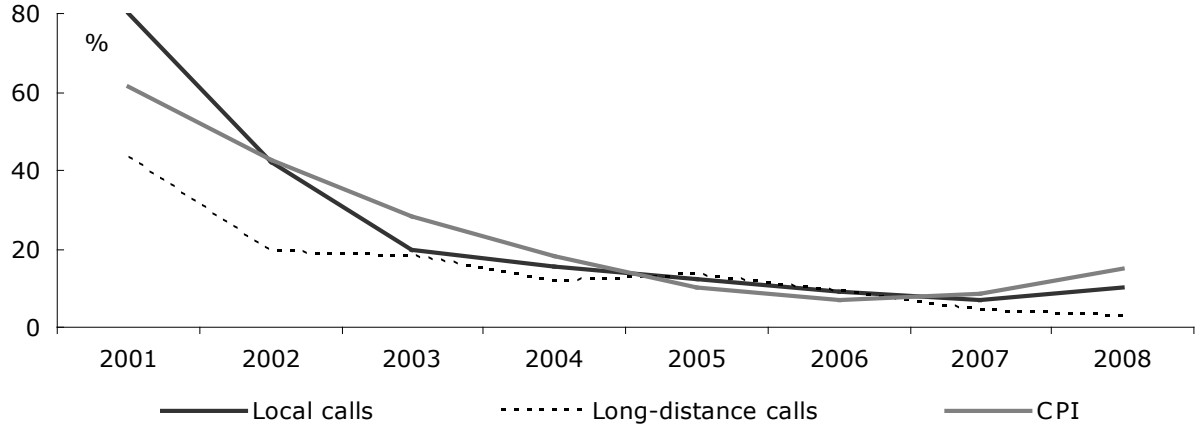
In 2008 tariffs for local connections in Belarus increased by 10.2%, for international connections – by 2.6%. Such an increase in tariffs has not surpassed the inflation rate in the country (CPI=14.8%), though. It indicates the absence of any considerable decrease in cross-subsidies in the sector (see Figure 9).

The profitability of telecommunications sector increased considerably in 2008. The net profit of telecommunication organizations accounted for BYR 1.2 trln, which is 1.9 times more than in 2007. Still the rate of return decreased somewhat from 40.4% in 2007 to 37.8% in 2008 (Table 7). The growth of profits in the sector went in line with an increase in costs (investments in the development of infrastructure).

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

[36] Sovetskaya Belorussia, dated 14.05.08, "Ministry of Communication considers options to minimize Beltelecom's losses from telecommunications market liberalization", http://www.sb.by/post/67438/.

**Figure 9:**
Annual Growth of Telephone Communication Tariffs for Households and CPI (in %, 2000–2008)




*Source*: Belstat.

**Table 7:**
Profitability of telecommunications services (in %, 2000–2008)

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|---|
| Telecommunications sector | 23.6 | 12.3 | 17.0 | 13.5 | 26.9 | 37.5 | 45.1 | 40.4 | 37.8 |

*Source: Belstat*.

Within the framework of the state Program of Telecommunication sector development, 291.1 thsd phones were introduced in the local networks in 2008. The density of landline phones per hundred persons has reached 40.4 (38.4 in 2007). The amount of landline phones has increased to 3.75 m (3.6 m in 2007). The use of Wireless Local Loop technology allowed covering 98% of rural settlements with the telephone connections. Thus, Beltelecom continued fulfilling its social obligations within the framework of state programs.

The construction of fiber-optic networks continued in 2008, together with the development of technologies for internet protocol television (IPTV). IPTV services are already available in the Belarusian regional cities, but the amount of IPTV subscribers is still small, totaling 2.3 thsd in 2008.

The development of broadband internet connections occurred at the same intensity as in 2007, but again primarily through the monopolist Beltelecom and its brand "byfly". According to its Chief Executive K. Tikar, Beltelecom has a market share of 70% of the internet connections market (35% in Minsk). The amount of "byfly" subscribers in 2008 exceeded 150 thsd. The installed capacity of the national operator increased 3.5 times since 2007. Beltelecom also develops services for wireless connections (WiFi). More than 350 access points have been already introduced by the operator in the country.

The number of internet users in Belarus exceeded 30% of the population in the recent years, 170 thsd out of them use broadband connections. The width of the external channel for internet connections to/from Belarus amounted to 7.2 Gb/s which is an increase by 4.1 Gb/s since 2007. The external channel remains under control of Beltelecom.

According to the Minister of Communications and Informatization N. Panteley, more than 150 internet providers except Beltelecom are currently operating in the market. But the abundance of operators does not directly secure the real competition in the market. According to market experts, tariffs for the internet connection in Belarus remain – despite

repeated decreases – among the highest in the world. (Tariffs have been reduced twice by 15% in 2008). Tariff reductions are held back because of the lack of competition in the market, as well as several limitations to providers' activities. For example, to avoid high tariffs, local networks became popular with the Belarusian population. In response, the government has forbidden them. In turn, providers were deprived of the opportunity to create and register such networks (licenses can not be issued to them).

Competition in the mobile communications market in Belarus is higher than in other telecommunications sectors. The total number of mobile subscribers in the country amounted to 8.1 m. This is an increase by 1.1 m since 2007. According to the State Program of Telecommunications Development, the number of 8 m was targeted by 2010. Thus, the mobile communications market is considered to be close to saturation. Accordingly, changes in the mobile operators' strategies and marketing policies followed in 2008. They aim at increasing return from subscriber (Average Revenue per Unser, ARPU), not increasing the number of new subscribers. In particular, velcom[37] has done rebranding. It positions itself as a mobile provider not only for businesses, but also for the youth, subscribers that don't speak much, people of middle-class etc. A similar strategy is used by MTS[38] .

In the conditions of market saturation, mobile operators have started active advertizing campaigns (starting from granting money to subscribers to raffling off cars), which were quite popular with the customers, as such companies are not widely used in the country. Moreover, mobile operators aim to broaden the scope of services they provide, and aim to "teach" customers to use supplementary services, such as mobile data transfer in particular. They include these services in the tariff plans and actively advertise them.

Substantial changes in the ownership structure of the mobile communications segment also took place in 2008. Eighty percent of the shares of the third GSM operator BeST were sold in July to the Turkish company Turkcell. According to some market experts, the formerly state-owned BeST has been created at that time already with the intention of a later privatization. The amount of the deal was reported USD 500 m, with additional USD 100 m to be paid in case the operator gains profits in the first year after the deal. Market experts estimated the actual value of BeST at USD 100 m (USD 400–500 per subscriber). The high price can be explained by the fact that it was actually the last option to get a mobile operator's license in the country. Belarusian authorities have already stated several times that three operators are enough for the proper development of the mobile communications market segment.

As the result of the deal, BeST was re branded at the end of 2008 under the new brand "life:)". Since then, it has aggressively sought market shares in a market already divided between MTS and velcom. Thus, "life:)" tries to undercut the tariffs of its competitors by eliminating subscription fees and tariffs for intra-network calls. By the end of 2008, "life:)" has 231 thsd subscribed users, and aims to reach the number of 1 m by the end of 2009. The operator currently lags behind competitors in terms of coverage and quality of services, but this can just be a transitional stage. "life:)" currently heavily invests in infrastructure and builds around 100 base stations monthly. According to O. Ermish a top manager of "life:)", the company expects to break even in five years.

Thus, in 2008 the telecommunications sector in Belarus remains highly centralized and controlled by the government. The basic telecommunication services are provided at tariffs below cost and thus cross-subsidization remains. Beltelecom's monopoly hinders the development of competition in the market and introduction of innovative services at low cost.

[37] In 2008 Velcom had 3.7 m subscribers. The owner: SB Telecom Ltd. (100%).
[38] In 2008 Mobile TeleSystems (MTS) Ltd. had 4.3 m subscribers. The owners are Beltelecom (51% of shares) and Mobilnye Telesistemy (Russia) (49%).

The main characteristics of the telecommunications sector in 2008 are the following:

— persisting social orientation in the government's policy in the sector and cross-subsidies;

— absence of significant steps towards further liberalization in the sector;

— sale of the government's share in the third GSM mobile operator to a foreign investor, that caused changes in the strategies of the main players;

— saturation of the mobile communications market, changes in the marketing policies of the mobile operators;

— further introduction of landline and mobile communication networks, to the rural areas;

— increase in quality and spectrum of telecommunication services; gradual decrease in tariffs for internet connections;

— preservation of exaggerated tariffs for innovative telecommunications services.

### 3.3.2. Reform agenda

There were no substantial regulatory changes in the telecommunications sector in the recent years. As a result, our policy recommendations remain. Active government's interference in the decision making at micro and macro level constraints the sector development. Changes should focus on the creation of 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, lower tariffs for long-distance calls, increase attraction for investments, bring conformity to international norms in telecommunications regulation, and facilitate integration of the country 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 2008

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

During 2008 the gas sector in Belarus faced no structural changes. The agreed price increases for imported natural gas were carried out and another tranche of 12.5% of the Beltransgaz shares was sold to Gazprom. The modest price growth of natural gas imports resulted in higher prices for consumers, but did not catalyze any structural changes.

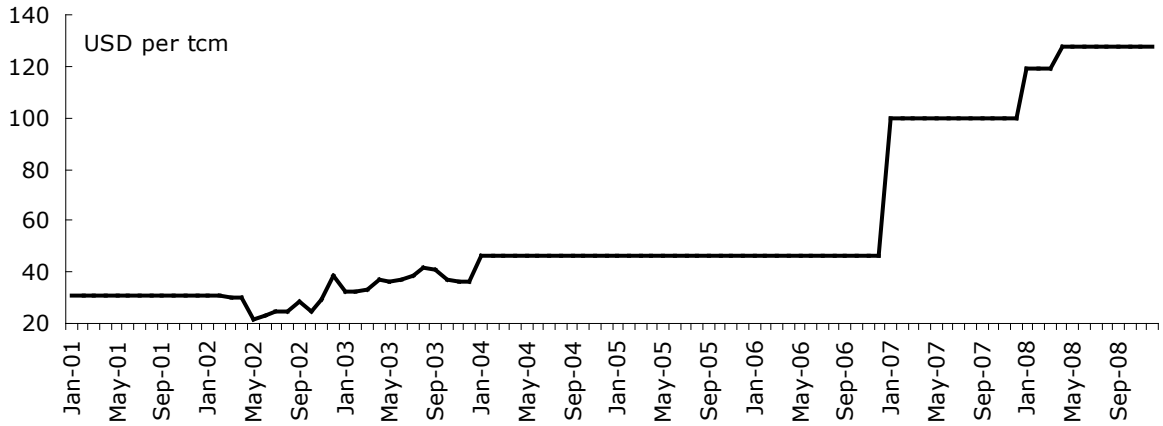
Under the contract between Beltransgaz and Gazprom for natural gas supplies and transit dated December 31, 2006, the gas price formula for Belarus is pegged to the average European price and is subject to a discount. Last year, Belarus paid 67% of the average European gas fee minus transport costs and the export duty (30% of Gazprom's selling price), in 2009 it is supposed to pay 80% of what Europeans pay, in 2010, the figure will increase to 90%, and the year 2011 will see Belarus pay as much as European consumers minus transport costs. Also, Belarus is supposed to pay in monetary assets (barter and offset schemes must be ruled out). Besides, parties agreed that Gazprom would buy 50% of Beltransgaz shares for USD 2.5 bn (also only in cash) by equal tranches (12.5%) over a four-year period. Accordingly, in 2008 Gazprom acquired the next 12.5% tranche of Beltransgaz shares for USD 625 m, now controlling 25%.Belarus consumed 21.1 bcm of natural gas for its domestic use in 2008, up 2.1% on the 2007 level. As for transit, Belarus transported 51.3 bcm of Russian gas in 2008 (6.2% more than planned), up 3.6% year-on-year. Through Beltransgaz network, which is used to transit Russian gas to the Baltic States and Russia's exclave Kaliningrad Region, 18.5 bcm were transported (the amount grew by 1.1% compared to 2007 and is 19.2% above the planed volume). Through Yamal-Europe pipeline (owned by Gazprom and maintained by Beltransgaz), which is used to pump gas to Poland and then to Germany, 32.8 bcm of gas were transited (which is as planned 5.5% more than in 2007).

In the first quarter of 2008 Belarus was paying USD 119.53 per tcm of gas, up 19% from the 2007 level, and USD 127.9 per tcm of gas since April 1, 2008 (another 7.5% increase) (Figure 10). However, during the second quarter, Beltransgaz tried to resist to the new price and to pay the price of the first quarter. As a result, Belarus created a small debt of around USD 45 m. Gazprom operatively responded for this delay; it initiated a new round of negotiations, and at the beginning of August all price problems were solved and needed payments were accomplished.
Both sides also agreed on the Beltransgaz's mark up. In 2008 it consisted of USD 8 per tcm for wholesale trade[39] and it would reach USD 11 per tcm of gas by 2011. It is worth to remind, that in 2007 there was a conflict, as in order to minimize negative consequences for industries due to doubled price for imported gas, the Belarusian side reduced Beltransgaz's mark up to almost zero. This has practically eliminated Beltransgaz's profits and has hurt Gazprom's interests as a shareholder. In 2006 the mark up amounted to USD 7.28 per tcm.

According to the contract, transit prices did not change compared to the previous year: USD 1.45 per tcm of natural gas per 100 km through the Beltransgaz pipeline (0.75 in 2006) and USD 0.43 per tcm via the Russian Yamal-Europe pipeline (0.36 in 2006).

[39] The price for industrial consumers is: price for imported gas plus taxes plus Beltransgas mark up (transportation) plus Beltopgas mark up (distribution).

**Figure 10:**
The development of prices for imported natural gas from Russia, 2001–2008




*Note*. Without VAT (18%).
*Source:* The Ministry of Statistics and Analysis.

By the end of the year, there was no current external natural gas debt to Russian suppliers (Table 8). However, small arrear appeared for December consumption, which Belarus fully paid in February (the contract allows this). According to Belstat, by February 1, 2009 external arrears for December consumption amounted to BYR 485 bn (USD 180 m). The situation with respect to final consumers' payments improved. Almost all payments for natural gas were made in cash – 99.9%. Collection ratio for internal payments amounted to 100.2%. The enterprises of the state concerns Bellegprom and Bellesbumprom[40] did not fully paid the current consumption of gas (collection ratio amounted to 98.6% and 99.9% accordingly). Some old debts remain, and the progress of its paying back considerably slowed down.

**Table 8:**
Arrears for natural gas (USD m)

| | As of January 1, 2005 | As of January 1, 2006 | As of January 1, 2007 | As of January 1, 2008 | As of January 1, 2009 |
|---|---|---|---|---|---|
| Arrears of domestic consumers | 247.51 | 186.05 | 131.03 | 104.30 | 102.30 |

*Source*: Belstat.

Since import prices rose only 28% year-on-year, the rise in prices for final consumers was also moderate. Gas fees for most of Belarus' manufacturers were raised by 7% to USD 145.18 per tcm of gas (VAT not included), on January 1, 2008. On August 1, 2008, domestic gas prices rose another 9.3% to USD 158.67 per tcm. The second increase was due to the rise in import prices on April 1, 2008. Some consumers continued to enjoy preferential prices, paying just 50% to 80% of the official price (Belenergo, selected petrochemical, peat-producing and light industry companies).

Gas tariffs for households rose between 10% and 90% on January 1, 2008. The 90.9% increase in fees applied to households that reside in apartments with central hot water supply equipped with gas cookers. Households were paying BYR 3,696, or USD 1.72 a month per person. If there is a gas cooker and gas water heater (and no central hot water supply), the tariff amounts to BYR 8,648, or about USD 4 per person on a monthly basis, which was

[40] These concerns govern light and forest industry enterprises accordingly.

up 55% from the previous level. During the heating season, tenants of apartments without central hot water supply equipped with gas cookers and gas water heaters paid BYR 172,700, or USD 80, per tcm, a rise of around 20%; in the summer, they were supposed to pay BYR 376,000, or USD 175. Liquefied gas prices also rose significantly, to about USD 1.4 per cubic meter in winter and USD 0.50 per cubic meter in summer, which was a serious impact on those using this type of gas in villages and summerhouses (dachas).[41]

In general, gas fees for the households rose 37% year-on-year on average, enough to only cover 67.1% of the cost of natural gas delivered to households. Therefore, cross subsidisation remained to be a serious problem, hurting the financial status of Beltopgaz.

### 3.4.2. Reform agenda

The crucial importance of natural gas to the Belarusian economy requires a stable and affordable natural gas prices and a secure natural 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.[42] In this context the following changes seem 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;

— 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 not related to the core business. The current policy of implementing investments for achieving different social and political goals should be stopped.

— 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 from 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 change the tariff policy for final customers which will bring more competition into the sector.

[41] Gas for heating water and flats are usually metered, so the prices are in tcm. For cooking (with central heating) the prices are on a monthly basis per person.

[42] 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.

## 3.5. Electricity

### 3.5.1. Reforms in 2008

State owned Belenergo[43] generated 34.9 bn kWh (which is 109.8% of the amount in 2007) and imported net 2.39 bn kWh (55.1% of the amount in 2007). Imports mainly came from Russia (2.2 bn kWh).

The payment discipline remained strict; barter schemes have been almost liquidated (the share of non-monetary payments amounted 1%). The collection ratio for internal consumption amounted to 100.4%. However, some enterprises were given a permit to delay payments for their past consumption.[44] The main current debtors of Belenergo are the companies of the Ministry of Sport (which paid 95.3% of its 2008 consumption), the enterprises of the state concern Belbiofarm[45] (99.9%) and Belgospisheprom[46] (99.3%).The existing arrears of the final consumers to Belenergo were only slightly reduced (Table 9).

**Table 9:**
Debts for electricity consumption (USD m)

| | As of January 1, 2005 | As of January 1, 2006 | As of January 1, 2007 | As of January 1, 2008 | As of January 1, 2009 |
|---|---|---|---|---|---|
| Domestic consumers | 328.62 | 293.92 | 222.52 | 152.48 | 148.2 |

*Source*: Belstat.

During 2008 electrical power tariffs for most consumer groups were raised three times. The biggest increase was made for agriculture consumers – during 2008 the tariffs were increased by 70%. The tariffs for state organizations increased by 18%; the tariffs for industries – by 12% (Table 10). Tariffs for households changed twice, overall increasing from 5.23 at the end of 2007 to 6.76 U.S. cents since April 1 (by 30%). As a result, cost coverage slightly improved, however, cross subsidization remained an issue (industry electricity prices are still almost twice as high as residential prices even though the cost for distributing electricity to residential customers are generally higher).

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

| | Since March 2006 | Since January 2007 | Since July 2007 | Since January 2008 | Since April 2008 | Since September 2008 |
|---|---|---|---|---|---|---|
| Cost | 4.53 | 5.86 | na | 7.43 | 7.43 | 7.43 |
| Prices for: | | | | | | |
| State financed organizations | 5.91 | 7.15 | 10.20 | 10.32 | 10.62 | 12.08 |
| Industry | 7.78 | 9.21 | 10.59 | 10.68 | 11.00 | 12.08 |
| Households | 4.36 | 5.23 | 5.23 | 5.40 | 6.76 | 6.76 |
| Agriculture | 3.56 | 4.32 | 5.18 | 7.78 | 8.01 | 8.80 |
| Other enterprises | 7.78 | 9.21 | 10.59 | 10.68 | 11.00 | 12.08 |

*Source*: The Ministry of Energy.

[43] The Belarusian power system (enterprise Belenergo) consists of six independent regional companies (one for each oblast – oblenergos).
[44] Resolution of the Council of Ministries of the Republic of Belarus # 553 "On giving delay for paying arrears for consumed natural gas, electricity and heat" on April 14, 2008.
[45] The concern governs the pharmaceutical industry enterprises.
[46] The concern governs food proceeding industry enterprises.

In 2008 the Security Council of Belarus determined that Belarus would build its own nuclear power plant. Belarus also adopted the law On the Use of Nuclear Power[47] and started training personnel and began building up the regulatory framework for the new industry. The Belarusian nuclear plant will operate two 1,000-megawatt units with water-cooled and water-moderated reactors. The first unit is expected to be launched in 2016, and the second one will take two more years to finish and launch. The nuclear plant is projected to be effective enough to save the country around 5 billion cubic meters of natural gas a year (about 20% of what is consumed now) and enable additional electrical power exports.

The management board of the nuclear power plant and special state commission selected the Ostrovetskaya site in the Grodno Region as the primary location for the plant, while two Mogilev Region sites, Kransopolyanskaya and Kukshinovskaya, were designated as "reserve sites". The final decision had been expected prior to December 1, 2008, but there was no presidential edict to approve the choice (under the Law "On Nuclear Power", the decision on the construction of the nuclear power plant and the location of the plant is taken by the president).

As a result of competitive bidding and direct negotiations with potential developers, Belarus decided that Russia's state corporation Rosatom would be awarded the contract to build the plant. It is supposed that Belarus would complete the talks with Rosatom and sign the contract in 2009. The Belarusian government hopes the construction cost would not exceed USD 4–6 bn, most of which will be borrowed from the Russian side.

### 3.5.2. Reform agenda

The Belarusian electricity sector is faced with increasing demand, the effects of a long phase of underinvestment, low efficiency and comparatively high generation cost. These challenges can only be met by strong investment in generation, transmission and distribution capacities. According to our estimates, the investments requirements till 2020 will amount to USD 20–30 bn. In the current environment we think that neither the state budget nor Belenergos cash flow will be sufficient to meet the financing needs. Consequently, private and in particular foreign investment is needed. Foreign investors, however, will not engage unless the current regulatory environment (vertically integrated state owned monopolist and a poor legislative basis) is significantly altered.

The tariff policy requires substantial changes. First of all, 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. Secondly, the policy of eliminating cross-subsidies has been inconsistent and incomplete, and a complete elimination of household cross-subsidization has not been achieved. Thirdly, subsidized energy prices for other groups, mostly industrial and agricultural enterprises remain an important issue. Moreover, a tariff policy vis-à-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. Overregulated tariff policy creates numerous distortions to the market, provides wrong information and incentives to customers (i.e. reducing motivation to energy saving), decreases investment funds of energy companies.

It is worth to mention, that inevitable price increases for imported Russian natural gas requires urgent measures to prevent sharply escalating electricity costs and tariffs. 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 2016.

[47] The Law "On nuclear power" #426 on July 30, 2008.

As it was already mentioned, the Belarusian electricity sector operates inefficiently with large deferred investments. 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;

— Gradual implementation of the selected tariff differentiation schemes would be very useful. According to our estimation, it would lead to approximately 5% reduction of a peak load, bringing essential economy on fuel and capacity costs. Furthermore, these schemes would contribute with additional benefits, among which reduction of ancillary services costs, reduction of spending on transmission system extensions, rising electricity consumption awareness that induces additional electricity savings, reduction of CO2 emissions, assuring constant load for the nuclear power plant and renewables in offpeak periods, etc.[48]

— An independent regulator creating incentives for cost cutting should be established. The system should be transformed from a centrally planned 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 Belenergo (oblenergos) and of all ancillary businesses should gradually start. The best results with respect to efficiency improvements, investments and privatisation revenues can be attained only by a full scale restructuring. This should be implemented on the step by step basis, but in a consistent and decisive manner.[49]

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).

[48] For more detailed information on possible tariff differentiation in the electricity sector see RC IPM-GET Policy Paper PP/04/08 "The case for tariff differentiation in the Belarusian electricity sector", http://research.by/pdf/pp2008e04.pdf.

[49] For more detailed information on possible ways of electricity sector restructuring see RC IPM-GET Policy Paper PP/05/08 "Restructuring the Belarusian Electricity Sector: Setting the Agenda", http://research.by/pdf/pp2008e05.pdf or the second chapter of this publication.

# 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.** This indicator is concerned with the ownership of the natural mo-nopoly part of the infrastructure business, e.g., most of the networks. 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 means 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 accom-panied 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 ap-proach 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 to 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 net-work are owned by the enterprises. 2008: 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. 2008: 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. 2008: 1.3.

### 1.2. Operation

1.2.1. Since May 2006 a natural monopoly Belarusian Railways is a department of Ministry of Transport and Communication. 2008: 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. 2008: 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. 2008: 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. 2008: 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 38 healthcare and education institutions. 2008: 1.3.

1.3.3. Belarusian Railways consist of 6 regional companies. Altogether the company unites 87 legal entities. 2008: 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. 2008: 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 chan-neled into railway network maintenance. Though, there is a considerable amount of cross-subsidization especially towards suburban transportation (diesel and electric trains): it is the most loss-making entity of BR (in 2008 revenues, excluding subsidies it covered only 35% of its costs, which is insignificantly higher than in 2007). Between 2001 and 2006 tariffs for suburban transportation grew faster than for other kinds of passenger and freight transportation, but this trend was put to an end in 2007. In 2008 there was no tariff increase at all for suburban transportation, despite high inflation rates. There are also cross subsidies between domestic and international freight trans-portation, but they are steadily decreasing. Domestic freight tariffs cover 72% of costs. 2008: 1.7.

2.1.3. Belarusian Railways consistently makes profits (the 2008 rate of return was 23.4%). Due to the distorted structure of tariffs, however, the amount of cross-subsidization is still very high, as suburbuan and national passenger and national freight transportation suffered losses of BYR 677 bn. 2008: 1.7.

**2.2. Payments**

2.2.1. A certain amount of indebtedness exists between the different enterprises within Belarusian Railways. 2008: 2.0.

2.2.2. Revenue collection for passenger transportation is 100%. Starting from December 20, 2007 concessionary tickets were abolished. Earlier a large percentage of consumers had privileges, especially on suburban transport: Privileged passengers constituted around 20% of all passengers transported. However, for the summer period concessionary tickets are still available for pensioners. Free rider practices on suburban transport de-creased. Some firms that use freight transportation services are regularly indebted to Belarusian Railways. 2008: 2.3.

2.2.3. In practice the government covered only a slight margin of losses of Belarusian Railways caused by providing privileged consumers with service. 2008: 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 of losses resulting from the provision of services at low tariffs by the state is marginal. 2008: 1.0.

2.3.2. According to law the government is obliged to cover all railway expenses, which are in-curred as a result of providing privileges to certain categories of consumers. In practice the procedure of price compensation is not disclosed. 2008: 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. 2008: 1.3.

3.1.2. Since 2006 Belarusian Railways is a department of Ministry of Transport and Communication holding the rights of a legal entity. Thus, the practice of administrative interven-tion in particular activities of the company is legitimized. 2008: 1.3.

3.1.3. The rules for operating Belarusian Railways are clearly defined in a number of legisla-tive documents. Yet the decision-making procedures have not been made open to the public. 2008: 1.7.

**3.2. Access regulation:** Access by outside firms to the market is not possible. 2008: 1.0.

## ROADS

### 1. Commercialization and privatization

### 1.1. Ownership

1.1.1. Roads are 100% in state and communal ownership. 2008: 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 was highly developed in some towns, reaching 50% market share. Since edict 760 came into force this figure has dropped significantly, leading to the deterioration of the index. Private freight transportation enterprises and individual entrepreneurs provide about 80% of the total amount of services. 2008: 1.3.

1.1.3. Ancillary businesses are state owned. All of them are independent legal entities separated from road management and approximately 23% are incorporated. 2008: 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. 2008: 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. 2008: 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. 2008: 1.7.

### 1.3. Organizational structure

1.3.1. Road management is completely separated from freight and passenger transportation services. 2008: 3.0.

1.3.2. Road construction and maintenance are separated from the natural monopoly operators. Cooperation between them is based on tendering procedures. 2008: 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. 2008: 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 set-ting 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. 2008: 2.0.

2.1.2. According to state legislation, road funding should derive from different tax payments, such as the tax on fuel, export duties and others. Earlier the greatest contributor to the fund was a special turnover tax, applied to the price of all products, but it was abolished in 2009. Also, user fees levied on truck companies depending on the distance travelled and the truck's parameters, are accumulated in the fund. There is one state owned toll road (M1/E30 Brest – Minsk – Russian Federation border), but revenues do not cover operational costs on this road. 2008: 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. 2008: 1.7.

### 2.2. Payments

2.2.1. A certain, but not a significantly large amount of indebtedness between ancillary services providers persists. 2008: 2.3.

2.2.2. Revenue collection for passenger transportation is close to 100%, though price compensation for serving privileged passengers remains an issue. However, starting from December 20, 2007 privileges for a wide range of passengers were abolished. Free rider practices in urban transport are common. The revenues of public transport enterprises relative to their costs continue to be low. The indicator remained unchanged. 2008: 2.3.

2.2.3. State financing of road construction and repair in 2008 has deteriorated. The revenues of the Road Fund have fallen by further 0.3% of GDP. This fall did not lead to the deterioration of the index, as it was compensated by the reduction of inappropriate use of road fund money. Expenditures on agricultural issues amounted to 13.7% of the fund (25% in 2007). 2008: 1.7.

### 2.3. State funding

2.3.1. The government used 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 3.7%. Private firms generally were not obliged to provide privileges. So abolishment of privileges does not influence much their activity. In many cases the prices charged by private firms resemble those of their public competitors (price discrimination). Indicator remained unchanged. 2008: 1.3.

2.3.2. Subsidies are directed straight to the service providers in a non-transparent way. 2008: 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. 2008: 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. 2008: 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. 2008: 1.7.

**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 unfavourable for urban transportation firms and entrepreneurs during 2008. Compared with public firms they receive unequal treatment and suffered from new legislation on individual entrepreneurs. As a result, the market share of private providers of passenger transportation services[50] decreased

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

(from 9.2% in 2007 to 4.7% in 2008). Attempts to soften the regulatory framework in freight transportation gave some positive results for carriers operating in the international freights, mainly through reduction of cases of obligatory convoy. So the indicator remained unchanged. 2008: 2.0.

## TELECOMMUNICATIONS

### 1. Commercialization and Privatization

### 1.1. Ownership

1.1.1. The cable infrastructure is primarily owned by Beltelecom, it further extents fibre-optic networks to the regions, thus providing better access to infrastructure both for population and other providers. Still, the structure remains monopolistic. The indicator does not change. 2008: 1.7.

1.1.2. Regional telecommunication enterprises are branches of Beltelecom. Internet providers are privately owned (except Beltelecom), some of which have a state share, and competing with each other. Mobile phone operators are corporatized. State continues privatising them and selling to foreign owners. The indicator changes. 2008: 2.3 (2.0 in 2007).

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. The indicator does not change. 2008: 2.0.

### 1.2. Operation

1.2.1. Beltelecom is an independent financial unit, but the Ministry of Communication and Informatization regulates the activities of Beltelecom. The indicator does not change. 2008: 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 Informatization. Participation in the socially oriented governmental policies in the sphere of telecommunications is obligatory for Beltelecom. The indicator does not change. 2008: 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 indicator does not change. 2008: 2.0.

### 1.3. Organizational structure

1.3.1. Beltelecom controls international traffic transfer. Beltelecom provides local and international connections. Beltelecom is the only primary internet provider, while secondary internet providers are mainly private companies that compete with Beltelecom. Beltelecom strengthens its positions in the internet provision segment; competition with the state monopoly remains intense. Mobile communication services are provided by mixed ownership or private operators. State continues to privatise them by selling shares to foreign owners. The indicator changes. 2008: 2.3 (2.0 in 2007).

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. The indicator does not change. 2008: 2.3.

1.3.3. Regional companies remain integrated into Beltelecom. Local and international phone connections are centralized. There are no competing regional operators in telecommunications. The indicator does not change. 2008: 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 set by Beltelecom. Internet tariffs and prices for mobile communications are set by providers. The indicator does not change. 2008: 2.7.

2.1.2. Local calls are subsidized by international calls. The indicator does not change. 2008: 2.3.

2.1.3. Mobile and internet providers' charges are competitive and cover costs. Charges for internet services are constantly decreasing. The indicator does not change. 2008: 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 decreasing. The indicator does not change. 2008: 3.3.

2.2.2. Households cover the tariffs for landline communications charged by Beltelecom. In the case of non-payment they are disconnected. The arrears of legal entities are not significant and falling. The indicator does not change. 2008: 3.3.

2.2.3. The indebtedness level is low. The indicator does not change. 2008: 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 (e.g., international connections and internet). Some debt restructuring has taken place in the sector. The indicator does not change. 2008: 2.7.

2.3.2. Cross-subsidization remains. Direct state subsidies are not significant and primarily aid the building of new telecommunications networks and improving the access to telecommunication services in rural areas. The indicator does not change. 2008: 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 Informatization. The managements of the mobile phone operators and the internet providers are selected by their shareholders. The indicator does not change. 2008: 2.0.

3.1.2. Beltelecom is a state enterprise. The telecommunications sector activities are regulated and controlled by the Ministry of Communication and Informatization. Mobile phone operators are not subordinated to the Ministry of Communication and Informatization, but the state (represented by Beltelecom) being the majority shareholder in one of them influences the decision-making. The indicator does not change. 2008: 1.3.

3.1.3. The rules of the sector 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. The indicator does not change. 2008: 1.3.

**3.2. Access regulation.** Access is provided through tender allocation and operations licensing. The decisions made are not always transparent. The indicator does not change. 2008: 1.7.

## GAS

### 1. Commercialisation and privatisation

### 1.1. Ownership

1.1.1 Gaszprom acquired the next 12.5% of the shares of Beltransgaz (holding 25% in 2008). The remaining shares of Beltransgaz belong to the state. The indicator increased from 2.0 in 2007 to 2.3 in 2008.

1.1.2. Transportation and distribution of gas are unbundled. Enterprises that form the concern Beltopgaz are mostly state enterprises. 2008: 1.3.

1.1.3. Construction, infrastructure maintenance and other ancillary enterprises are mostly state owned and/or are controlled by the state concerns. 2008: 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. 2008: 1.3.

1.2.2. Commercial goals are weak. Political influence on management and investment decisions prevail. 2008: 1.7.

1.2.3. The role of private sector in providing service for the gas sector is minor. 2008: 2.3.

### 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. 2008: 1.7.

1.3.2. The enterprises that provide supporting services (delivery, installation) are separated economically and organizationally. 2008: 2.0.

### 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. 2008: 2.0.

2.1.2. Beltransgaz prices cover average costs. In 2008 the mark-up of the Beltransgaz was reintroduced. As a result, the indicator increased from 2.0 in 2007 to 2.3 in 2008.

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. There is cross subsidization of households by industry. 2008: 2.3.

### 2.2. Payments

2.2.1. In 2008, debts were reduced and the share of cash payments maintained at a high level. 2008: 3.3.

2.2.2. Enterprises, especially in the industrial sector improved their gas payments. Nevertheless overdue debts of various consumers remain. 2008: 3.3.

2.2.3. Budget debts are low and they do not exceed the level of payment for monthly gas consumption. 2008: 3.3.

### 2.3. State funding

2.3.1. Some categories of consumers buy gas at preferential prices. In 2008 debt write-off were not practiced and the amount of state funding was reduced. 2008: 2.7.

2.3.2. The procedure of granting subsidies lacks transparency and it does not target individual consumers. However, one-time subsidies were not given. 2008: 2.7.

### 3. Regulatory and institutional development

### 3.1. Effective regulatory institutions

3.1.1. The top management of Beltransgaz and enterprises of Beltopgaz are appointed by the Ministry of Energy subject to approval by the President. 2008: 1.0.

3.1.2. The Ministry of Economy performs some regulatory functions in the sector. 2008: 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. 2008: 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 introduced. Furthermore, 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. 2008: 2.0.

## ELECTRICITY

### 1. Commercialisation and privatisation

### 1.1. Ownership

1.1.1. The enterprises of Belenergo are mainly 100% state property. 2008: 1.3.

1.1.2. Generation, transportation and distribution of electric power are not unbundled and are mainly carried out by mostly state owned enterprises. 2008: 1.0.

1.1.3. Construction, infrastructure maintenance and other ancillary enterprises are mostly state owned and/or are controlled by the state concern. 2008: 1.3.

### 1.2. Operation

1.2.1. Ministry of Energy regulates the activities of the Belenergo enterprises, but the enter-prises function as independent financial units. 2008:1.3.

1.2.2. Commercial goals are weak. Political influence on management and investment decisions is prevalent. 2008: 1.7.

1.2.3. Construction and infrastructure maintenance are provided not only by the enterprises of Belenergo, some of which are private. 2008: 2.3.

### 1.3. Organizational Structure

1.3.1. There is no separation between production, distribution and sales. 2008: 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. 2008: 2.0.

## 2. Tariff reform

### 2.1. Structure of Tariffs

2.1.1. The 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. 2008: 2.0.

2.1.2. Prices cover the average costs of Belenergo. However, cross subsidization of heating by electricity still takes place. 2008: 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 2008, prices for some consumer groups remained below costs. However, the cross subsidization was reduced in 2008. The indicator grew from 1.7 in 2007 to 2.3 in 2008.

### 2.2. Payments

2.2.1. Since 2004, debts inside the sector were gradually reduced and the share of non-cash payments among enterprises of the sector was practically liquidated. 2008: 3.3.

2.2.2. The level of payments, especially among industrial enterprises, increased. In 2008 they paid fully for current electricity consumption. Nevertheless debts stemming from the past of various consumers remain. 2008: 3.3.

2.2.3. Budget debts are low and they do not exceed the average level of payment for monthly electricity consumption. 2008: 3.3.

### 2.3. State funding

2.3.1. Some categories of consumers buy electricity at preferential prices. New debts are restructured. In 2008 no debt write-off was practiced. 2008: 2.7.

2.3.2. The procedure of granting subsidies lacks transparency and it does not target individual consumers. One-time subsidies were not given. 2008: 2.7.

## 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. 2008:1.0.

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. 2008: 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. 2008: 1.0.

**3.2. Access regulation** to the power lines network is provided by Belenergo, nevertheless it is not closed. 2008: 1.0.

## Appendix 3

Infrastructure Indicators Evaluation

| | Indicator | Railway | | Roads | | Telecommu-nications | | Gas | | Power | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2008 | +/- | 2008 | +/- | 2008 | +/- | 2008 | +/- | 2008 | +/- |
| **1.** | **Commercialization and privatization** | **1.5** | **-** | **1.7** | **-** | **1.9** | **+0.2** | **1.8** | **+0.1** | **1.5** | **-** |
| *1.1.* | *Ownership* | *1.3* | - | *1.3* | *-0.2* | *2.0* | *+0.1* | *1.6* | *+0.1* | *1.2* | - |
| 1.1.1. | Natural monopoly | 1.3 | - | 1.0 | - | 1.7 | - | 2.3 | +0.3 | 1.3 | - |
| 1.1.2. | Potentially competitive businesses | 1.3 | - | 1.3 | -0.3 | 2.3 | +0.3 | 1.3 | - | 1.0 | - |
| 1.1.3. | Ancillary businesses | 1.3 | - | 1.7 | - | 2.0 | - | 1.3 | - | 1.3 | - |
| *1.2.* | *Operation* | *1.7* | - | *1.4* | - | *1.7* | - | *1.8* | - | *1.8* | - |
| 1.2.1. | Natural monopoly | 1.3 | - | 1.3 | - | 1.3 | - | 1.3 | - | 1.3 | - |
| 1.2.2. | Natural monopoly planning and investment decisions | 2.0 | - | 1.3 | - | 1.7 | - | 1.7 | - | 1.7 | - |
| 1.2.3. | Private sector participation in service contracts | 1.7 | - | 1.7 | - | 2.0 | - | 2.3 | - | 2.3 | - |
| *1.3.* | *Organizational structure* | *1.4* | - | *2.2* | - | *2.0* | *+0.1* | *1.9* | - | *1.5* | - |
| 1.3.1. | Separation of natural monopoly and potentially competitive businesses | 1.0 | - | 3.0 | - | 2.3 | +0.3 | 1.7 | - | 1.0 | - |
| 1.3.2. | Separation of ancillary businesses | 1.3 | - | 2.0 | - | 2.3 | - | 2.0 | - | 2.0 | - |
| 1.3.3. | Decentralization | 2.0 | - | 1.7 | - | 1.3 | - | - | - | - | - |
| **2.** | **Tariff reform** | **1.5** | **-** | **1.8** | **-** | **2.7** | **-** | **2.6** | **-** | **2.7** | **-** |
| *2.1.* | *Structure of tariffs* | *1.7* | - | *1.9* | - | *2.9* | - | *2.2* | *+0.1* | *2.2* | *+0.2* |
| 2.1.1. | Political vs. regulated operator's | 1.7 | - | 2.0 | - | 2.7 | - | 2.0 | - | 2.0 | - |
| 2.1.2. | Natural monopoly pricing | 1.7 | - | 2.0 | - | 2.3 | - | 2.3 | +0.3 | 2.3 | -0.3 |
| 2.1.3. | Potentially competitive businesses pricing | 1.7 | - | 1.7 | - | 3.7 | - | 2.3 | - | 2.3 | +0.6 |
| *2.2.* | *Payments* | *1.8* | - | *2.1* | - | *3.3* | - | *3.3* | - | *3.3* | - |
| 2.2.1. | Intra-industry payments ratios | 2.0 | - | 2.3 | - | 3.3 | - | 3.3 | - | 3.3 | - |
| 2.2.2. | Final consumers collection ratios | 2.3 | - | 2.3 | - | 3.3 | - | 3.3 | - | 3.3 | - |
| 2.2.3. | Budget indebtedness | 1.0 | - | 1.7 | - | 3.3 | - | 3.3 | - | 3.3 | - |
| *2.3.* | *Budgetary funding* | *1.0* | - | *1.3* | - | *2.0* | - | *2.4* | - | *2.7* | - |
| 2.3.1. | Subsidies level | 1.0 | - | 1.3 | - | 2.7 | - | 2.7 | - | 2.7 | - |
| 2.3.2. | Subsidies procedure | 1.0 | - | 1.3 | - | 1.3 | - | 2.0 | - | 2.7 | - |
| **3.** | **Regulatory and institutional development** | **1.2** | **-** | **1.9** | **-** | **1.6** | **-** | **1.5** | **-** | **1.0** | **-** |
| *3.1.* | *Effective regulatory institution* | *1.4* | - | *1.8* | - | *1.5* | - | *1.0* | - | *1.0* | - |
| 3.1.1. | Management selection of competitive businesses | 1.3 | - | 2.0 | - | 2.0 | - | 1.0 | - | 1.0 | - |
| 3.1.2. | Independence of regulator, insulation from political influence | 1.3 | - | 1.7 | - | 1.3 | - | 1.0 | - | 1.0 | - |
| 3.1.3. | Transparency of regulation | 1.7 | - | 1.7 | - | 1.3 | - | 1.0 | - | 1.0 | - |
| *3.2.* | *Access regulation* | *1.0* | - | *2.0* | - | *1.7* | - | *2.0* | - | *1.0* | - |
| | **IPM Research Center's indicator** | **1.4** | **-** | **1.8** | **-** | **2.1** | **+0.1** | **2.0** | **+0.1** | **1.7** | **-** |
| | **EBRD indicator** | **1.0** | **-** | **2.0** | **-** | **2.0** | **2.0** | **-** | **-** | **1.0** | **-** |

*Sources*: EBRD (2008): Growth in Transition. Transition report 2008; EBRD (2007): People in Transition. Transition report 2007; 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

— Georg Zachmann, energy economics and econometrics, consultant

*IPM Research Center*

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

— Dr. Irina Tochitskaya, international economics, Deputy Director of the Research Center

— Dr. Elena Rakova, energy sector, structural and competition policy, enterprise reform

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

— Dzmitry Kruk, M.A. in Economics, banking sector and macroeconomic modelling

— 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/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 gov-ernment and other organizations involved in the process of creating and implementing eco-nomic policy.

PP/01/07 Public Private Partnership

PP/02/07 Energy Shocks and Macroeconomic Management: Policy Options for Belarus

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*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.