

Development of the railway transport in Poland

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Introduction

The railway transport sector in Poland faces a lot of challenges. Decades of under investment in the rail network coupled with inadequate roads have resulted in insufficient infrastructure to deal with growing demand for passenger transport and also for the reliable and cost-effective movements of freight. Rail reforms are slower and less effective than required and expected. The overall economic situation of the railroad system in Poland has not improved in visible way in recent years, in spite of the fact, that Polish rail market is one of the biggest in Europe.

Lack of sufficient political support for the systemic transformation of the rail sector is too often visible in Poland. It is strange why such sectors of the Polish economy like mining or shipbuilding received millions of Euro to bail out their inefficiencies and restructure, while the rail sector was left a hole in its pocket. Probably, there has been insufficient awareness among politicians of the critical importance of rail transport for national economy development.

It results in growing debts of PKP S.A. as well as in fixing the high level of charges for using rail infrastructure. One of the more difficult issues is how to fund rail infrastructure maintenance and enhancements without pricing freight traffic off the rail network.

It should be note, that no major rail reforms have been completed without financial involvement of the state. This is a key element at this juncture of reforming railway sector. The public cost of rail reforms is significant and often exceeds the current capacities of the state budget.

Therefore, there is a need for consequence realisation of the long term strategy for rail transport sector development in Poland, including programmes of financing rail network and further restructurisation of the PKP S.A. as well as privatisation of the main PKP companies. The state should be fully involved in those processes, both as a supporter and supervisor.

Only in that way it will be possible to create a competitive and efficient rail transport system in Poland. It is one of the most challenging and important economic development tasks.

The author tries to analyse the issues mentioned above and answer the important questions. The main objective of this paper is to present the main features and trends of the railway transport development in Poland. The focus of the paper is on the following issues:

1. Evaluation of the railway market with main attention to freight sector
2. Restructurisation of the railway transport
3. Access to railway infrastructure and charges for the access
4. Further development of the railway sector

In the last part of the paper the author presents the last developments being of importance for the further development of the rail transport sector in Poland.

1. Characteristic of the railway market in Poland

1.1. Analysis of the current situation

Polish economy has faced at the end of 90's the phenomenon - characteristic for the West European economies - the growth of GDP does not influence directly on growth of demand for transport in general as well as in particular modes of transport and especially in railway sector.

Restructurisation of the heavy industry and metallurgical sector in Poland consist in closing coal-mines, steelworks, and other plants, has resulted in decline in freight traffic in general in spite of relatively high level of economic growth. Furthermore, the industry's restructuring has as usually an impact on the structural changes in modal split in transport market, having an objective character. It results in declining demand on transportation of low-processed products and as a consequence of this in losing cargoes by railway. At the same time it can observe the growth of the road traffic volumes resulted from increasing demand for high-processed products, which naturally predestine to this mode of transport.

The changes in Polish economy have influenced on the development of the freight transport market in Poland (see table 1).

Decrease in railway freight transports has resulted from decline of the global demand of economy for transportation of bulk cargoes, especially coal and iron ores as well as from taking over some part of cargoes by road transport.

It can state that the decreasing tendency in rail freight transportation being natural characteristics for the first years of changes in the Polish economy, from centrally planing to the market economy, has remained since 1990 up to 2003.

The railway transport has lost substantial part of the freight transport market in Poland mainly on the favour of road transport during the period concerned.

The share of PKP Cargo S.A. in the total freight transport market felt in tonnage from 17.5% in 1990 to 12.6% in 2004 and in tkm from 60.2% in 1990 r. do 25.4% in 2004. It means that there have placed substantial structural changes in demand for freight services at the Polish transport market during the years 1990 – 2003.

But, we should not look pessimistically at decrease in railway traffic in Poland, because it is a price for transformation Polish economy from centrally planed to market oriented. Since 2003 we can observe three important phenomena in the Polish economy:

- slow but stabile production growth of the heavy industry and metallurgical sector after completion of restructuring process
- stabile growth of the Polish foreign trade turnovers

- steady and relatively high growth of GDP

Those and other economic factors have an impact on increase in demand for railway freight services and create opportunities for railway sector to recover some parts of freight transport market in Poland lost in the last decade of 90's.

Table 1. The volume of the freight traffic in Poland by the main transport modes in 1990 – 2004

Transport modes	1990	1995	2000	2002	2004	2005	Modal split in %		Change 1990= 100
							1990	2005	
in million tonnes									
Rail	281.7	225.3	187.2	222.9	282.9	269.6	17.5	19.1	95.7
of which PKP Cargo S.A.	281.7	225.3	187.2	159.7	163.6	149.9	17.5	10.6	53.2
Road	1 292.4	1 086.8	1006.7	931.2	956.9	1 079.7	79.9	76,4	83.5
Pipelines	33.0	33.4	44.3	46.1	53.4	54.2	2.0	3.8	164.2
Inland Waterways	9.8	9.3	10.4	7.7	8.7	9,6	0.6	0.7	97.9
TOTAL	1 616.9	1 354,8	1 248.6	1 207.9	1 301.9	1 413.1	100.0	100.0	87.4
in billion tkm									
Rail	83.5	69.1	54.4	47.8	52.3	49.9	60.2	25.5	59.7
of which PKP Cargo SA	83.5	69.1	54.4	46.6	47.8	43.8	60.2	22.3	52.4
Road	40.3	51.2	75.0	80.3	110.5	119.7	29.1	61,0	297.0
Pipelines	13.9	13.5	20.3	20.8	24.8	25.4	10.0	12.9	182.7
Inland Waterways	1.0	0.9	1.2	1.1	1.0	1.2	0.7	0.6	120.0
TOTAL	138.7	134.7	150.9	150.0	188.6	196.2	100.0	100.0	141.4

Source: Statistical Yearbooks of GUS (Central Statistical Office) „Transport – Results of Performance” and own calculations

1.2. Development of the rail freight market

The Law on Railway Transport from 27th of June 1997 has opened the railway network for domestic and international operators and since of this date we can speak about indeed development of the railway transport market in Poland.

The Law has broken the PKP's monopoly on the railway transportation and that has introduced the concessions both for performance of railway transport and for management of the railway lines.

In the years 1998 – 2002 there have been granted 20 concessions for performing the railway transport, but only a few operators started with operation because of the lack of sufficient capital.

The situation at the railway market in Poland has significantly changed in 2003 when the new Law on Railway Transport came into force on 28th of March, replacing the Law from 1997.

The concessions on railway network management have been replaced by licences, which are more liberal form of regulation of the access to railway network.

On the basis of the new regulations the President of the Railway Transport Office has granted 57 licenses in the years 2003-2005 for new operators for performing the railway transportation, of which 6 licences for operators continuing PKP's activity and the rest

licences for new and independent railway operators. At the end of 2005 there were 92 licensed railway operators in the Polish railway market, of which: 65 freight and 27 passenger operators (only in Germany more licences have been granted for rail operators).

It should be noted, that the railway freight market in Poland is a relatively young market, where PKP Cargo S.A. still plays a dominant role with the share in the market measured in tkm amounting to 87.8% in 2005 (see table 1). From the other hand, PKP Cargo S.A. does not have a monopolistic position in the freight railway market, because its share in the market measured in tonnes amounted to 55.6% in 2005.

It is also worth noting that since 2002 the Polish official transport statistics record freight rail transports performed by all operators in total and separately by PKP companies. In this way we know that other than PKP rail operators, enter the Polish railway freight market in last years due to liberalisation of the railway transport in Poland. The new entrants carried out 119.7 mln tonnes of cargoes and performed 6.1 bln tkm in 2005, which makes them the rail freight market share of 44.4% in tonnage and 12.2% in tkm (see table 1).

Such great differences in the market shares measured in tonnes and in tkm result from the fact that the new railway freight operators have been established on the basis of so called "industrial railways" being a part of the mines (coal, sand, stone, etc.). Those companies after transformation operate as the licensed rail operators (more than 13 in 2005) at the same local markets and transport the cargoes on the short distances. The possible option for further development of those practically local operators can be taking over those companies by the strategic investors from forwarding-logistic sector in Poland.

The second group of the licences railway operators constitute the carriers established on the basis of the "factory-railways" of the big consortia from fuel and metallurgical sectors (e.g.: PKN Orlen SA, Lotos Railway, DEC). Those licensed railway operators transport the cargoes, mainly liquid fuels and metallurgical products, on the long distances.

The third group of the licences railway operators constitute the carriers established on the basis of the companies from forwarding-transport-logistic sector (e.g. CTL Logistics S.A., CTL Rail Ltd.).

The operators from the first group, regardless on the ownership changes, will not have influence on the development of competition in the railway freight market in Poland, because they perform the same transports but only under the "new sign".

Instead the operators from the second and third group will have more and more impact on the development of competition in the railway freight market in Poland with the great competition pressure on the market position of PKP Cargo SA. especially in sector of the load trains carrying out the bulk cargoes, such as liquid fuels, chemicals, fertilisers, metallurgical products and partially coal. Probably, the growing activity of those new operators will result in losing by PKP Cargo S.A. some parts of the most profitable segments of the freight railway market in Poland.

It has not observed any special interest of Polish railway market from foreign railway operators as well as the queues for allocation of train paths at railway network after Poland accession to EU in 2004.

We can assume, that by a few years the Polish freight railway market will be divided between 5-6 players and the rest railway operators will be of marginal and local importance. It is also

possible that the foreign railway operators enter the Polish railway market in the future, because from the railway business's point of view it is really big and attractive market.

2. Restructurization of the railway transport in Poland

The following two Laws are of fundamental importance for restructuring of the railway transport in Poland

1. Law Act on commercialisation, restructuring and privatisation of State-owned enterprise "Polish State Railways" (dated 8th September 2000) with amendments in 2001, 2002, 2003 and 2004
2. Law on railway transport (28th March 2003) with further amendments in 2004.

Those Laws have established the framework for fundamental changes of the railway sector in Poland, in accordance with railway directives of EU. The Polish State Railways have been completely restructured and new bodies have been established in the field of railway transport in Poland, which are presented below.

Polish State Railways JSC (Holding Group of PKP S.A.)

Polish State Railways (PKP S.A.) is the joint stock company that was established on 1 January 2001 as a result commercialisation of the state-owned enterprise PKP on the basis of the Law on Commercialisation, Restructurisation and Privatisation of PKP state-owned enterprise. The Treasury of the State is the shareholder of PKP S.A. in 100%.

The main company's business activities are: manage and maintain railway lines, run business in the field of domestic and international rail transports of goods and people as well as provide related services, execute the restructuring programme of Polish State Railways and manage the PKP Group works.

PKP S.A. is responsible for:

- managing railway lines
- running business in the field of rail transport of goods and passenger
- execution of PKP restructuring processes
- development of redundant assets
- management of financial liquidity of the companies belonging to the PKP Group
- preparation of privatisation projects for PKP Group's companies and monitoring the privatisation processes
- implementation of the quality management system according to ISO standards.

PKP Polish Railway Lines JSC (PKP PLK S.A.)

The PLK S.A. was established on the basis of the Law on Commercialisation, Restructurisation and Privatisation of PKP state-owned enterprise. It is a joint stock company acts in conformity with market economy rules. However, PLK is a structural part of the PKP S.A. Group, although it has separate accounting practices.

The General Assembly of PLK is represented by the representatives two main shareowners: PKP S.A. and the State's Treasury.

Majority of the PLK shares are owned by the PKP S.A., but part of the shares is owned by the Treasury, because expenses of the state budget transferred in a given year on national importance railway lines increase the initial capital of the PLK S.A. As a result the shares in

increased the capital are taken over by the Treasury, represented in that case by the Ministry of Transport.

Minister of Transport has a great impact on the company's issues, approves articles of associations and its changes. Furthermore, the Minister points candidates on members of the Supervisory Board, which is appointed by the General Assembly.

In a case of privatisation or liquidation of the PKP S.A. its shares will be taken over by the Treasury, it means that the PLK will not be privatised.

The PLK S.A. is in charge of managing railway lines, i.e. providing track access to the railway operators (within and outside PKP Group S.A) and infrastructure managers using railway infrastructure in Poland. PLK also develop and administer (e.g. invoicing) the charging mechanisms for track use and it is responsible for the maintenance of the tracks.

It also solves disputes related to track charging.

Basic product of PKP Polish Railway Lines JSC is timetable constructed according to the application of a client (railway undertaking), sold as a journey path, on the contractual basis with the principle of non-discriminatory practices towards all railway undertakings. Detailed principles for applying and consideration of applications are covered in Network Statement. PLK S.A. is in charge of publishing capacity allocation framework and the procedures are published in the Network Statement.

The Railway Transport Office (RTO)

The Railway Transport Office is the regulator for the Railways being central office of governmental organisation. The President of RTO is appointed by the Prime Minister on a proposal of the Minister of Transport and is subordinate to the above mentioned Minister.

The Ministry of Transport appoints some staff of the RTO and issues the laws and provisions related to the office's functions.

The President of RTO is responsible for: licensing railway operators (being the relevant body to grant, change and withdraw licence, on the basis of Art. 45 of the Law on Railway Transport), safety certification, setting charges, dispute settlement over many issues and the competition supervision in the Polish Railways.

The applicant for the license to run the railway line (as infrastructure manager) should, i.a.:

- have a legal title to operate railway line,
- employ personnel having relevant professional qualifications
- use rail vehicles satisfying relevant conditions specified in the technical regulations
- have a guarantee of adequate performance for the economic activity covered by the application (financial capability)

The Law on Railway Transport (LRT) regulates the basic rules of railway safety and according to this Law the President of the RTO is responsible for, e.g.:

- issue of the safety certificates and permission of operation
- supervises the safety and technical compliance of rolling stock and railway lines with proper legislation
- supervision of the correct maintenance and operation of the railway lines and rail sidings
- supervision of safety of dangerous goods transport
- control of complying with regulations and execution of decisions and rules in the field of railway transport.

It should be noted, the Law on Railway Transport requires the safety certificates from the infrastructure managers, railway operators and users of railway sidings.

The rolling stock and railway undertakings must comply with specific technical regulations in order to be issued a safety certificate.

Since March 2003, the Railway Transport Office took over the supervision of the competition in the railway market. It means that the President of RTO is in charge of enforcing the competition in the railway market, including handling the complaints related to distortion of competition.

The **Minister of Transport** is mandated to issue a regulation concerning rules for capacity allocation as well as the form and contents of the request for railway line allocation and procedures for processing.

Implementation of EU Directives

Directive 91/440/EEC was transposed in 2001 through the Law on Commercialisation, Restructurisation and Privatisation of PKP state-owned enterprise (8th September 2000), with further amendments in 2001, 2002, 2003 and 2004.

Directives: 95/18/EC; 95/19/EC; 96/48/EC; 2001/12/EC; 2001/13/EC; 2001/14/EC and 2001/16/EC; 2004/51/EC are transposed by the Law on Railway Transport (28th March 2003), with further amendments in 2004 and 2005.

3. Access to railway network in Poland

PLK S.A. is in charge of administrating the capacity allocation. The capacity allocation is done according to criteria of drawing railway schedules with priorities given by the following order:

- passenger trains, PSO trains
- state regulated transports (i.e. military importance)
- operators having old rights based on former timetables
- some trains are allocated capacity based on the framework agreements.

3.1. Principles of providing access to railway infrastructure

Providing access to railway infrastructure, managed by PKP PLK S.A., takes place on the basis of:

- Law on Railway Transport (LRT)
- Regulations issued by the infrastructure manager on the basis of mentioned above Law and Ministerial Regulation, e.g.: Regulation of the Ministry of Infrastructure on the Conditions of Access and Use of Railway Infrastructure (7th April 2004)
- Network Statement (offer of PLK SA) – regulation concerning allocation and use of train paths on available railway lines
- Access contracts for use of allocated train paths (access contract form is provided by the Network Statement)

The **superior principle** is **non-discriminatory treatment for all of licensed railway undertakings**, which provides:

- equal unit rate charges for the same train type and available lines,
- equal principles for settlement of accounts and calculation of charges,
- equal principles and deadlines for application for train path allocation.

Detailed relations between railway undertaking and PLK are established by civil-legal agreements, which describe rights and duties of the parties, commercial, technical, operational and formal-legal aspects concerning execution of mutual obligations, known as CONTRACTS.

Access to rail infrastructure in Poland is ensured by PKP PLK S.A., however each manager of infrastructure regulates track access on its own lines.

PLK S.A. manages of 23 428 km of railway lines, of which 19 435 km lines are in operation.

Apart from PLK S.A. there are 9 managers of railway infrastructure with total number of 1178 km railway lines owned by them. PLK SA has no rights to interview in providing train access to the infrastructure owned by those managers.

The railway infrastructure access to foreign railway operators is limited to 20% of track capacity by the end of 2006 in accordance with transitional period negotiated by Poland with EU. Reservations concerning article 10, recital 3 of Directive 91/440/EEC expire in Poland on the 31st of December 2006, it means, that since 2007 there will be free entry to the Polish railway market.

3.2. Requirements regarding access to railway lines

To obtain access right to PLK rail infrastructure, entrepreneur (who is going to execute journeys on railway lines managed by PLK) must submit i.a.:

- information about company, its financial standing, insurance, etc.,
- confirmed copy of valid license,
- confirmed copy of valid safety certificate,
- statement, that driving of trains will be entrusted to drivers who have powers specified in Regulation of Minister of Infrastructure of 16 August 2004 on list of positions directly connected with traffic management and safety,
- statement, that he possesses rolling stock which meets conditions specified in Regulation of Minister of Infrastructure of 12 October 2005 on general technical operational conditions for railway vehicles,
- information concerning intended volume of operating performance and type of railway traffic on PLK network.

After receiving notification, entrepreneur has a right to submit applications for trains paths allocation in accordance with regulations specified in PLK “Regulation on allocation and use of train paths on available railway lines by licensed railway undertakings within Timetable for given year”.

In the moment of receiving notification of train path allocation, entrepreneur obtains a right to access to railway infrastructure within and in accordance to conditions specified in that notification.

Railway undertaking obtains right to use allocated in timetable train paths after concluding CONTRACT.

3.3. Services provided by PLK within the frame of making rail infrastructure accessible

PKP PLK SA ensures execution of journeys of railway undertaking’s trains in accordance with CONTRACT, principles and conditions specified in Network Statement and with instructions included in Enclosure to the PLK Regulation.

A scope of services provided by PLK covers basic services, resulting from execution of journeys included in the timetable and additional services, as well as other services, not included in Network Statement which are carried out on the base of separate contracts.

Within the frame of basic services, PLK provides, e.g.:

- 1) execution of journey of railway undertaking's train on tracks, turnouts and railway stations on allocated train path or on alternative path,
- 2) access - on allocated train path and according to the timetable, on railway stations or other places where railway undertaking's train stops – to PLK devices and objects,
- 3) access to traction network on journey route,
- 4) traffic control and management, as well as basic information, regarding railway traffic,
- 5) preparation of Annual Timetable according to applications,

On the base of separate contracts or submissions, PLK provides additional services such as: monitoring of journey of train with dangerous goods, supply of water, electrical energy, refuelling and fuel distribution, providing access to PLK telecommunication network, etc.

3.4. Train paths allocation

In order to get access to railway lines managed by PLK, railway undertaking submits to PLK application for train path allocation. PLK prepares proposal of Annual Timetable and forwards it to the applicant for agreement. Railway undertaking obtains Annual Timetable in a form of internal timetable.

It is also possible for allocation of domestic train path within Individual Timetable.

PLK considers applications for train paths allocation, being guided by the rule of non-discriminatory treatment of all railway undertakings and by taking into consideration:

- 1) possibly best use of rail lines potential (capacity, technical and operational parameters),
- 2) interests of railway undertaking,
- 3) planned investment works, technical and organisational conditions.

While considering applications for train paths allocation, the following issues are taken into account:

- conditions resulting from article 30, recital 2 of Law on Railway Transport,
- date of submitting application,
- compliance of application's content in the field of train path parameters with technical-operational conditions of railway lines,
- frequency of railway traffic- applications, which enable better utilisation of railway lines, are considered before the applications for trains running irregularly,
- time, applications submitted for period of the whole Annual Timetable are considered first, before applications for a shorter time.

PLK, during validity of Annual Timetable, monitors utilisation of allocated train paths by individual railway undertakings.

Information concerning utilisation of allocated train paths is submitted to railway undertaking in accordance with rules specified in CONTRACT.

Making lines/line sections of rail network managed by PLK accessible is executed according to the CONTRACT, signed between the railway undertaking and PLK.

Within the scope of CONTRACT, PLK, e.g.:

- executes journey of trains, according to the agreed timetable and in accordance with terms and conditions of traffic management on rail lines specified in Regulation on general conditions concerning rail traffic operations and signalling,
- executes all necessary for journey movement actions on PLK technical posts,
- notifies railway undertaking of necessity to introduce long-term traffic restrictions, not foreseen in the timetable.

In case of conflict between train paths, the process of co-ordination is carried out by PLK in a form of talks with experts, always with attendance of all rail operators whose train paths are in conflict. PLK inform rail operators about conflict situation and proposes solutions for its resolving, that may consist in: allocating another time system for requested train paths, preparing timetable to run trains on different path and shortening time of journey by decreasing a number of stops, their duration, decreasing weight of train.

4. Charging for use of the railway network in Poland

4.1. Setting the infrastructure charges – general rules

The system of infrastructure charges is based on the Law on Railway Transport in general and on the executory act to this law, i.e. the Regulation of the Ministry of Infrastructure on the Conditions of Access and Use of Railway Infrastructure (7th April 2004).

The Regulation obliges PKP PLK to set the price for infrastructure use in the following functions:

- fixed costs – depending on “parameter of infrastructure manager”
- variable costs – depending on “parameter of rail operator”
- joint costs – uniform for all kind of trains
- planned operation work (train-km)

Further details and calculation of the charge rates are under responsibility of infrastructure manager, i.e. PKP PLK S.A.

The fee for infrastructure consists of:

1. **Basic fee**, executed train-km multiplied by the individual rate for the specific type of railway line and train, which covers:
 - the right of the operator to utilise the granted route
 - the use of devices and objects necessary to provide technical and commercial handling on the granted route
 - the use of electricity traction supply equipment
2. **Additional fees** are defined by the infrastructure manager on the basis of individual calculations within the contract concerning the additional services signed with operator. Those fees cover e.g.: supervision of the transportation of dangerous goods, assistance in the operation of non-standard trains, provision of water, compressed air, receiving wastewater, fuelling, provision of extra information, etc.

PLK S.A. publishes the Network Statement in which there is explanation specifically what charges are levied for and also applies a discount system for the clients who wish to receive access to railway infrastructure. The clients are entitled to a discount of maximum 5%.

PKP PLK S.A. is responsible for setting and collecting the infrastructure charges with the supervision of the RTO.

The President of RTO is responsible i.a. for:

1. approval and co-ordination of charges for the use of granted train routes,
2. supervision of the provision of equal access for operators to the railway infrastructure,
3. supervision of the equal treatment of all railway operators by infrastructure managers, especially within the examination of application for train routes and charges calculation,
4. supervision of the correctness of basis fees calculated by the infrastructure manager and additional fees for the additional services,
5. handling complaints of railway operators related to the Network Statement, capacity allocation and charges for the use of railway infrastructure.

4.2. Charges for use of railway infrastructure

PLK SA provides access to railway lines applying charges which are calculated taking into account maintenance costs, traffic operations costs and costs of administration of managed lines. Unit rate of access charge depends on value of manager's operating costs and operating performance volume of all operators.

In general, the charge for railway infrastructure use is based on the cost of operation. The fees are meant to cover railway infrastructure maintenance and management costs.

Price list, adopted by resolution of the Management Board of PKP PLK S.A. for given year, determines unite rates of charges for basic services within the frame of providing access to all operated sections of lines being managed by PLK S.A.

Access charges for use of available railway lines are calculated according to principles included in LRT and Regulation of Minister of Infrastructure on conditions concerning access and use of railway infrastructure.

For Annual Timetables PLK establishes a level of charges on the basis of "Price list for given year" confirmed by the President of the Railway Transport Office.

Method of charges calculation

Basic charge, for a single journey of a specific type of railway undertaking's train is calculated as a total of products of unit rates assigned to individual sections of railway line and length of these sections. Basic charge for journeys of all railway undertaking's trains is a total of charges for individual trains.

Unit rates are specified in enclosure to "Price list for given year. Unit rates for basic services concerning access to railway lines of PKP PLK S.A.".

Basic charge is calculated on the basis of unit rates specified for train parameters (weight, speed) defined by timetable:

- 1) for qualified passenger trains – average technical vehicle speed,
- 2) for other trains – gross weight of a train, including weight of operating locomotives.

According the rules in force the basic charge for access to railway infrastructure is setting in the following steps:

1. to establish of the route for given train
2. to define the specific kind of train with identification of:
 - a) an average technical speed of train by timetable
 - b) gross weight of the train appointed in timetable
3. to select from the "Price List" unit rates of the basic charge assigned to the given kind of train on the particular sections of line by the train parameters fixed in step 2

4. to set the basic charge for the passage of train on the given section of line – the volume of basic charge is calculated by multiply the unit rate selected in step 3 by the length of the total journey on the given section of line
5. to set the total basic charge for journey on the given route through summing charges set in step 4 for all sections of line on the route of journey.

In general, it can state that for each line and each kind of train separately, the charge for access to rail infrastructure is calculated as a sum of charges setting for particular sections of line according to the formula:

$$O_{ij} = s_{ij} * p_{ij}$$

where:

O_{ij} – charge for passage of train j at section i [zł]

s_{ij} – unit rate for passage of train j at section i [zł/train-km]

p_{ij} – operational work praca performed by train j at section i [train-km]

The final charge consists of the sum of charges setting for all kind of trains with taking into account granted rebates/ discounts or increases (regarding to each train separately).

The level of charges for access to railway infrastructure in Poland is one of the higher in Europe. The reason is that according to provisions of the Law on Railway Transport the charges for use of infrastructure should cover the full costs of infrastructure maintenance. In the meantime, in other European countries the percentage of covering costs of rail infrastructure maintenance through charges for access to infrastructure amount to: 60% in Germany, 62% in France, 50% in the Great Britain, 20% in Austria, 17% in Belgium, 16% in Italy and 10% in the Netherlands. The rest of costs are covered by the budget subsidies. It is a consequence of the transport policies in those countries, basing at assumption that there are simple and strong relations between the level of charges for access to railway infrastructure and competitiveness of the whole rail transport sector against the other transport sectors.

Due to lack of such assumption in the Polish transport policy the charges for use of rail infrastructure have been calculated in the period 2001-2005 at very high level, which caused increase in costs of railway transports and consequently worsening competition position of railway sector against road one. The costs of access to railway infrastructure in Poland constitute more than 30% of the own costs of railway operators. Actually, an average rate of charge for access to railway infrastructure managed by PKP PLK S.A. amounts to 5.1 euro/train-km for freight trains, 2.3 euro/train0km for qualified passenger trains and 1.7 euro/train-km for the rest passenger trains.

In tables 2-4 are presented the average network charges in force according to the technical functions of permissible speeds for sections of lines and gross weight of freight trains.

According to actual Price List of charges for access to rail infrastructure by the Timetable 2005 / 2006 (approved by decision of President of the Railway Transport Office), an average network charge for freight train amounts to 20.61 zł / train-km (5.15 Euro, by the rate of exchange of 4 zł per 1 Euro) and 10.59 zł / train-km (2.64 Euro) for freight trains in combined traffic.

In table 5 are presented the comparable charges for access to railway infrastructure used by PLK SA in the years 2005 -2006 for freight train and for freight trains in combined traffic.

The differences between the charges rates by the Price List and by the contracts resulted from rebates and discounts granted to railway operators.

As you can see, the minimum and maximum charges for freight trains in combined traffic have significantly decreased in the year 2006 in comparison to 2005. The minimum and maximum charges for freight trains have also changed but an average rate of charges in the year 2006 has not much changed. In sum, the average rates of charges in all kind of freight traffic have decreased only by 2% in 2006 in comparison to 2005.

On separate request of railway undertaking, justified by increase of performance volume resulting from transferring goods from other modes of transport into railways, PLK S.A. has a right to give discount, which level can not be higher than 50% of fixed part of average unit rates given in price list. Discount can be applied only to trains included in Individual Timetable or new trains added to Annual Timetable as its update.

For the purpose of eliminating abnormality of railway market functionality, PLK has a right to check and ask other railway undertakings if transfer of goods from other modes of transport into railways really took place.

Table 2. An average unit rates of charges for access to railway lines for qualified passenger trains, by the Price List for 2006 – an average network rate 9.26 zł* / train-km

An average timetable speed V_t [km/h]	Technical permissible speed for section [km/h]					
	<0,40)	<40, 80)	<80,100)	<100, 120>	(120, 140>	more 140
<100	4.61	5.49	6.70	8.04	10.12	15.46
≥ 100	5.99	6.87	8.08	9.42	11.50	16.84

* rate of exchange by the end of 2005: 4 zł = 1 Euro. Source: information of PLK SA.

Table 3. An average unit rates of charges for access to railway lines for other non qualified passenger trains, by the Price List for 2006 – an average network rate 9.80 zł / train-km

Growth weight of train [t]	Technical permissible speed for section [km/h]					
	<0,40)	<40, 80)	<80, 100)	<100, 120>	(120, 140>	More 140
<100	3.69	4.58	5.76	7.04	9.02	14.09
<100,210)	3.89	4.79	5.97	7.26	9.24	14.32
<210,360	4.25	5.18	6.37	7.65	9.64	14.72
≥ 360	4.50	5.45	6.64	7.93	9.93	15.01

Source: information of PLK SA.

Table 4. An average unit rates of charges for access to railway lines for freight trains under Timetable 2005/2006 (zł/train-km)

Growth weight of train [t]	Technical permissible speed for section [km/h]					
	<0,40)	<40, 80)	<80, 100)	<100, 120>	(120, 140>	more 140
<900	11.26	14.62	19.04	23.85	31.31	50.38
<900,1500)	11.77	15.16	19.59	24.41	31.88	50.95
<1500,2100)	12.62	16.06	20.52	25.35	32.82	51.91
<2100,3000)	13.49	17.00	21.48	26.32	33.81	52.90
≥ 3000	14.34	17.90	22.41	27.26	34.76	53.86

Source: own calculations on the basis of information and data from PLK SA.

Table 5. Comparison of the unit rates of charges for access to railway lines in the years 2005 – 2006 (zł/train-km)

Kind of train	Levels	Unit rate		
		By the Price List 2005	By the contracts in 2005	By the Price List 2006
Full trains in combined traffic	minimum	7.77	7.56	6.07
	maximum	66.50	64.86	16.45
	average	20.68	20.11	10.59
The rest freight trains	minimum	5.06	4.53	11.26
	maximum	108.20	96.89	53.86
	average	23.25	20.82	20.61
Total	minimum	5.06	4.53	6.07
	maximum	108.20	96.89	53.86
	average	23.23	20.80	20.38

Source: own calculations on the basis of information and data from PLK SA.

5. Further restructurisation and development of the rail transport sector in Poland

New regulations

Polish Parliament passed, on 16th of December 2005, the following laws of crucial importance for development of the railway sector in Poland in the coming decade:

1. Law on Financing the Inland Transport Infrastructure
2. Law on Railway Fund
3. Law on modification of the Law on Railway Transport
4. Law on modification of the Law on Commercialisation, Restructurisation and Privatisation of PKP state-owned enterprise

Those laws come into force since 9th of February 2006.

The **Law on Financing the Inland Transport Infrastructure** replaced the Law on Financing Public Roads with extension their scope on financing construction, modernization, repair, maintenance and management of the railway infrastructure. The Law specified the following sources of financing the outlays related to railway infrastructure managed by PKP PLK SA:

- revenues from excise taxes on motor fuel
- resources specified in the Law on Railway Transport and the Law on Railway Fund.

Expenses on public road and railway infrastructure have been fixed in the Budget Act on 2006 at the level not less than 12% of the revenues from excise taxes on motor fuel planned on 2006. But because of delays in issuing executory provisions to the laws mentioned above as well as taking into account fact, that the budget act for 2006 was passed in November 2005- the resources mentioned above will be practically used at the beginning of 2007.

The Law on Railway Fund regulates establishment of the Railway Fund, the principles for collection of the Fund's resources and the principles for financing the implementation of tasks from the Fund's resources. The Fund is established at the National Economy Bank. The Fund will collect financial resources for preparation and implementation of construction and modification of railway lines, repairs and maintenance of the railway lines, removal of redundant railway lines. The Fund's resources are also designated for repayment of credits and loans with interest and other costs of servicing credits and loans, and redemption of bonds.

Resources designated for financing tasks, mentioned in the Law, can be transferred only to the **rail infrastructure managers**, providing access to this infrastructure to railway carriers.

The Fund's resources derive mainly from:

- 20% of income from the fuel charge,
- percentage from interest on the Fund's resources,
- revenues from shares in companies, transferred to the minister in charge of transport issues by the State Treasury, in order to add resources to the Fund,
- revenues from sales of shares,
- income from bonds issued by the National Economy Bank for the benefit of the Fund.

The fuel charge constitutes a revenue of the National Road Fund and the Railway Fund, whereas the amount constituting 80% of the fuel charge, constitutes a revenue of the National Road Fund, and the amount constituting 20% of this charge – the revenue of the Railway Fund.

Terms of financing from the Fund's resources are specified in contracts concluded by the infrastructure managers with the minister in charge of transport.

Draft Program of material-financial use of the Railway Fund's resources is developed by Minister of Transport in agreement with the National Economy Bank for the period from one to six years. The Programme specifies, i.a.:

- list of tasks in the area of repairs and maintenance of the railway infrastructure, with indication of anticipated amount of financing from the Fund's resources and the remaining sources for financing of these tasks;
- list of individual railway investment projects, with indication of the anticipated amount of financing from the Fund's resources and the remaining sources for financing of these projects;

The Program is approved by the Council of Ministers.

Modification of the charging system

The provisions of the Law on Financing the Inland Transport Infrastructure and the Law on Railway Fund create for the first time formal and real possibilities for co-financing the costs of rail infrastructure maintenance from the budget resources. It will result in decreasing the level of charges for use of rail infrastructure in Poland since the year 2007.

Apart from it there has been changed the method of calculation of rail access charges in 2006. The Regulation of Minister of Transport on Conditions of Access and Use of Railway Infrastructure (30th May 2006) introduced the method of charge's calculation based at rates on individual journey at the specific line or sections of line. It means, that the rule of charge calculation based at an average network rate is not valid any longer.

The Regulation introduces also new elements in calculation system as well as simplifies calculation process.

According to the Regulation the basis fee is fixed as a product of executed train-km multiplied by the unit rate for the specific type of railway line and train.

The basic fee for the journey on the granted route is a sum of fees for the journey made through all sections of the given route.

The unit rates are fixed for passenger trains, freight trains and solo locomotives and for trains in intermodal transports. Unit rate is a sum of the fix cost, unit variable cost, unit cost of credit handling and unit margin on repairs and maintenance – calculated on 1 train-km.

The following costs are taken into account during calculation of the charge rates:

1. fix costs, covering:
 - a) depreciation,
 - b) cost of current maintenance of the railway lines
 - c) cost of traffic performance
2. variable costs
3. cost of credit handling
4. margin on repairs and maintenance (no more than 0.9% of the sum of fix and variable costs)

New Strategy for rail sector development in Poland

Following the new laws (dated on 16th of December 2005), the Ministry of Transport has elaborated new document “Strategy for railway transport in Poland by the year 2009” and submitted it in September 2006 to the Council of Ministers for approval and adoption.

Apart from the strategy the governmental departments were simultaneously drafting in 2005-2006 other strategic documents for the railway market, namely:

- Master Plan for railway transport in Poland up to 2030,
- National Transport Policy for the years 2006-2025,
- Development strategy for transport for the years 2007-2013,
- Operational Program “Infrastructure and Environment” for the years 2007-2013.

The government is planning to provide strong support for railway transport as a part of its sustainable development policy. The Strategy encompasses the country’s retention of its co-ordination functions in the development and maintenance of railway network, financing railway transport expenditure from several resources, as well as the creation of rational mechanisms for operating and state aid in regional, inter-regional and international transport, especially that included in international agreements.

The strategy also indicates the need for significant internal changes in the PKP Company, e.g., strengthening the ownership function in the PKP S.A. Group and concluding the allocation of manufacturing estate within PKP, especially for the benefit of the PKP PLK S.A. In the process of the PKP reforms, the government intends to undertake financial restructuring of the Company. There are the most relevant tasks to be completed in 2006-2007: the full service of regulatory liabilities, discharge of railway debts combined with opportunity to utilise of the EU modernisation funds. Thus, the strategy describes the mechanisms for granting public assistance to railway transport in Poland.

As a result of these proposals the **PKP Tax Capital Group** will be created, the debts of PKP Regional Railways S.A. and PKP Cargo S.A. are to be cancelled as well as new programmes of financial subsidies for modernisation and maintenance of rail infrastructure are to be implemented.

The restructuring of PKP S.A. will be effected by preparing the companies belong to the Group for privatisation, preventing delays in settlements between the companies in the

Group, stabilising the debt level, co-ordination the investment processes, resolving the question of property and improving the management function.

The privatisation process will involve three groups of companies that belong to the PKP Group. The companies that will form the Tax Capital Group will undergo a process of preparation and will be privatised from 2009 by selling their shares in the open market. It is assumed that PKP Intercity Ltd. and PKP Cargo S.A. will be the first to undergo privatisation in the capital market.

The new strategy assigns a **key role in the railway market to the railway infrastructure manager, i.e. PKP PLK S.A.** Its main purpose will be to maintain the railway infrastructure in good condition and make the rail lines available to all rail carriers on an equal basis. PKP PLK S.A. will not be focussed on maximising profit. The priority will be to use the profits to finance new investment and modernisation. During the process of regulating financial issues, PKP Cargo will **allow other rail operators to use the following elements of infrastructure:** technical station, marshalling yards, section of the sorting tracks, shunting tracks and general purpose loading tracks -leased to date.

At the same time, PKP PLK will receive capital necessary to service, maintain and repair railway lines, i.e. to run its operation. Entities connected with the maintenance of the infrastructure, including servicing stations, will become part of PKP PLK.

The Strategy also highlights a clear separation between the use of infrastructure and investment process in PKP PLK. This action should result in the separation of the capital of PKP PLK, as it will not be financially related to any business entity. Its shares will not be subject to trading, their solo owner will be the State Treasury and PKP will not own other companies.

The strengthening of PKP PLK position and implementing new regulations concerning the financing repairs and infrastructure maintenance is expected to stop the process of degradation, which has been continuing for the past few years.

In the Strategy is assumed, that expenditure incurred by the State Treasury and the Railway Fund for repairs and infrastructure maintenance will amount to 215 mln PLN in 2006 and 260 mln PLN yearly in the years 2007-2009.

It is expected that on the basis of PKP PLK S.A. will be established Capital Group Railway Infrastructure subordinated directly to the State Treasury in final state of that process.

PKP Regional Services Ltd. (PKP RS) will receive financing from the Railway Fund to cover the loses in the period 2002-2005 due to the ticket price reduction for passenger transports that were not subsidies by the state. The Ministry of Transport has put forward three alternative solutions to the government, that are depend on the capability of finding finances in the national budget:

- making regional transport self-governing and the on-time removal of PKP RS debts by the State Treasury (solution recommended by Ministry of Transport)
- making regional transport self-governing - restructuring PKP RS debt, e.g. by the mechanisms of Railway Fund,
- maintaining existing model of regional passenger transport, changing the form of management und utilising resources granted for subsidy of that transport.

It seems that because of the tight budget for the year 2007 (related to the contribution by the state through obtaining EU funds), some indirect solutions will be adopted, including the partial debt removal using budget resources. Hence, the payment of the remaining part of debt will be removed in the course of time by the Railway Fund.

Ministry of Transport concluded on 2nd of June 2006 the following agreement:

- with PKP PLK S.A. the three years agreement on co-financing of repairs and maintenance of rail infrastructure
- with PKP Regional Services Ltd. and PKP Intercity Ltd. the three years framework agreements as well as one years agreement for 2006 on co-financing of the rail inter-province and international passenger transports to be performed within the public service obligations.

Those agreements execute the provisions of the Law on Railway Transport (modified on 16 of December 2006) and the Law on Financing the Inland Transport Infrastructure.

Due to signing those agreements it has been possible to start with transfer budgetary resources for infrastructure manager and rail passenger operators. In September 2006 rail companies mentioned above received advanced payments in amount of 1/11 part of subsidy falling on each company.

Summary

The works on restructuring the railway sector in Poland have been doing up to now were slower and have not resulted in expected effects.

Effectiveness of the railway sector in Poland has not been improved as well as the debt of PKP Group increased.

It is also observed lack of sufficient political support for radical restructuring the rail sector in Poland, regardless the fact, that no major rail reforms can be completed without financial involvement of the state.

Therefore, it was necessary to change of the concept of development and restructuring the railway sector in Poland.

The new Strategy for railway transport development adopted by Council of Ministers in 2006 specifies new instruments of the state's transport policy as well as new ways and tools (organisational, legal, economic and financial), they should be implemented into Polish rail transport system. It worth to mentioned, that for the first time there are created the formal (legal) basis and conditions for co-financing maintenance of the rail infrastructure and support for restructuring rail passenger transports from the public resources.

The state takes responsibility for support and monitoring the restructuring (including privatisation) railway sector in Poland as well as the further development of the rail market.

The new Strategy should be realised consequently with full involvement of the state as a supporter and supervisor of planned actions.

The new Strategy for railway transport development as well as the other strategic documents (listed above, it is expected that will be adopted by Council of Ministers by the end of 2006) will create comprehensive framework and formal basis for effective development and restructuring the whole railway system in Poland.