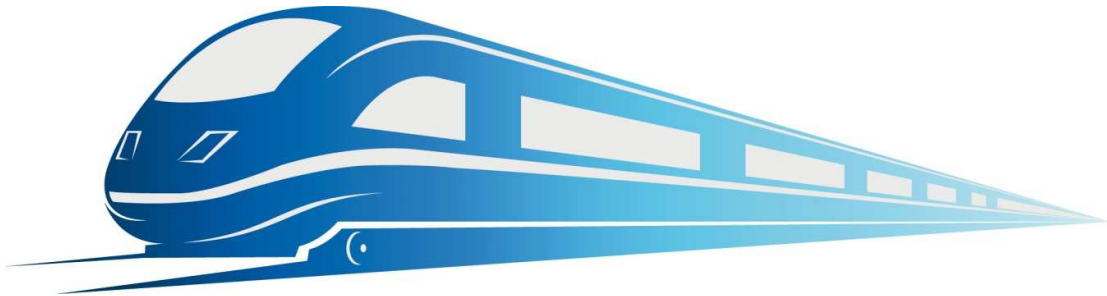


“Polish rail market overview”



March 2018

Questa nota è stata commissionata a **Zespół Doradców Gospodarczych TOR Sp. z o.o.** dall'Ufficio ICE-Agenzia di Varsavia in occasione dell'evento “Polish Rail Transport Development, Chances for Polish-Italian Cooperation” del 21 marzo 2018.

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Rail market structure

Ministry of Infrastructure and Ministry of Investment and Development

In January 2018, changes in the government structure were approved and the new ministers were appointed. Andrzej Adamczyk was appointed as the head of the Ministry of Infrastructure; he headed the Ministry of Infrastructure and Construction in the previous cabinet. The Ministry of Investment and Development will be headed by Jerzy Kwieciński, who in the previous cabinet replaced the current Prime Minister Mateusz Morawiecki, the then Minister of Development.

The Ministry of Infrastructure is currently responsible for communications and transport. It supervises, among others, the General Directorate of National Roads and Motorways and the Centre for EU Transport Projects. It also has a representative for the construction of the Central Transport Port. PKP PLK and PKP SA and entities from this Group are under its supervision as well.

The Ministry of Investment and Development is responsible for construction, planning and spatial development, housing as well as regional development. It controls the spending of aid funds, including those available under the European Funds. Also, the President of the Public Procurement Office reports to the Ministry.

Office of Rail Transport (UTK)

Its task is to create safe and competitive conditions for the provision of rail transport services. The Office is headed by the President, who is the central government administration body – the national safety authority and railway transport regulator within the meaning of the European Union regulations on safety, interoperability, and regulation of rail transport, competent for the following issues: railway transport regulation, railway transport licensing, technical supervision over the operation and maintenance of railway infrastructure and railway vehicles, railway traffic safety, interoperability and technical integrity of railway transport, licenses and certificates of train drivers. The President of UTK



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is also the competent authority in the matters of supervision over compliance with passenger rights in railway transport.

PKP Group

The PKP Group was established in 2001 as a result of restructuring of the state-owned enterprise Polskie Koleje Państwowe. The main purpose of these changes was to separate railway transport activity from railway line management and to create independent commercial law entities that could provide services not only on the railway market.

PKP S.A. is also one of the largest property owners in Poland. The Company's resources include approx. 96,000 ha of land and 52,000 buildings and structures. Its assets are both facilities that perform functions related to transport and service of travellers (railway stations), as well as strictly commercial real estate. PKP S.A. is active as a manager by e.g. initiating investments and looking for ways to manage railway land more optimally.

PKP PLK (share of PKP SA: 32.29%) – the largest railway infrastructure manager in the country. In recent years, the company's priority has been investment activity, i.e. construction, modernisation and reconstruction of railway infrastructure. These activities are carried out mainly with the use of EU funds from the Operational Programme Infrastructure and Environment and Regional Operational Programmes. PKP SA does not act as a supervisory body for this entity – it reports directly to the ministry.

PKP Cargo SA (share of PKP SA: 33.01%) – the largest freight operator in Poland. The PKP Cargo capital group includes more than a dozen companies providing services in the field of land and sea transport, logistics, forwarding, reloading of goods, overhaul of rolling stock and traction rolling stock as well as servicing railway sidings. On 30 October 2013, PKP Cargo made its debut on the Warsaw Stock Exchange. On 30 December 2014, the representatives of PKP Cargo signed an agreement under which the Polish operator took over 80% of shares in Advanced World Transport, the second largest rail freight operator in the Czech Republic.

PKP LHS Sp. z o.o. (share of PKP SA: 100%) – the operator on the broad-gauge line it manages on the section from the Ukrainian border (Hrubieszów) to Sławków, Silesia.





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PKP Intercity S.A (share of PKP SA: 100%) – a passenger operator servicing long-distance passenger transport. The largest passenger operator in terms of transport performance in Poland.

PKP Informatyka Sp. z o.o. (share of PKP SA: 100%) – the company is responsible for maintaining IT systems. It manages, among others, PKP Intercity ticket sales system and PKP Cargo systems.

PKP SKM w Trójmieście Sp. z o.o. (share of PKP SA: 68.70%) – a railway operator based in Gdynia, operating in the Pomorskie Province, and a manager of railway line no. 250 Gdańsk Śródmieście - Rumia.

PKP TELKOL Sp. z o.o. (share of PKP SA: 100%) – PKP TELKOL (until the end of 2017 operating under the business name: PKP Utrzymanie), established in April 2014 as a result of the separation of an organised part of the enterprise from TK Telekom, maintaining the efficiency of telecommunications equipment used for safe operation of trains. At the turn of 2017/2018, the Company merged with PKP Budownictwo Sp. o.o., taking over its shares.

Xcity Investment Sp. z o.o. (share of PKP SA: 99.998%) – development projects on PKP SA-owned land.

PKP Energetyka

The main task is to sell and supply electricity to traction and business customers. The company also specialises in power engineering services. The owner of PKP Energetyka is one of the largest investment funds in the world, CVC Capital Partners. Until 25 September 2015 it had been part of the PKP Group.

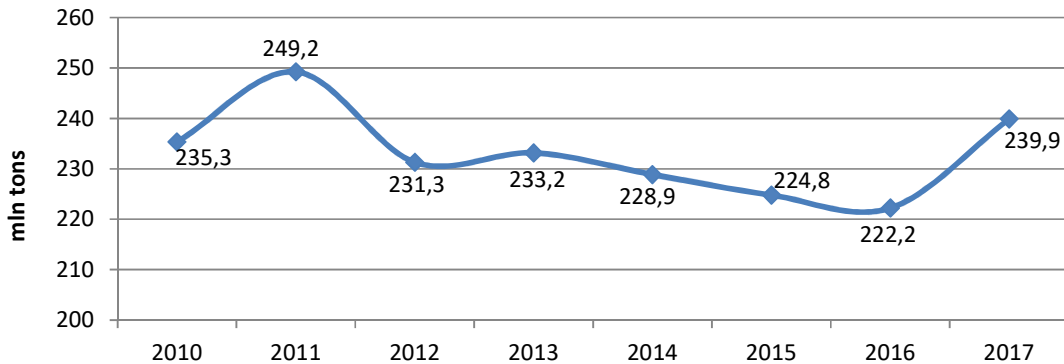
Freight Operators

The year 2017 was exceptionally successful in freight transport. An 8% increase in cargo weight carried was recorded in comparison to the preceding year. The results in freight transport in 2017 show that the downward trend line was broken. The higher statistics were affected by the results of all operators.

The operators carried 239.9 million tons of cargo, which was an increase of over 7.9% when compared to 2016. In 2011 – the last record year on the transport market – the increase resulted from the investments implemented for Euro 2012. The increase in the weight of transported cargo in 2017 stemmed from the general revival of many branches of the economy and a handful of new investments.

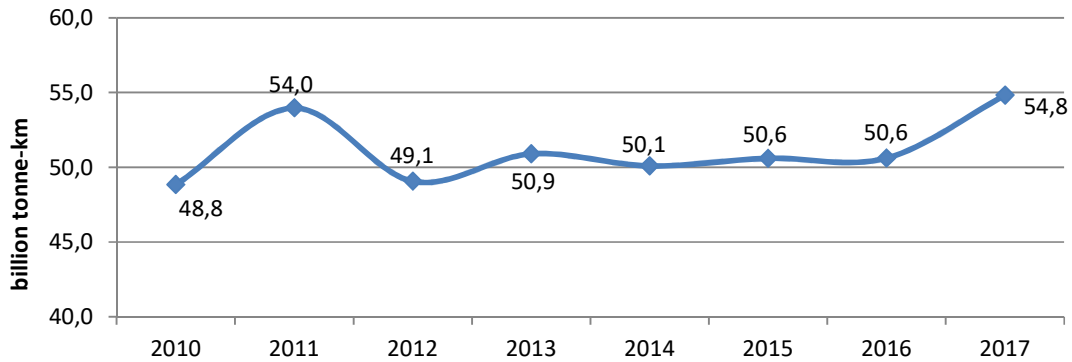
The transport performance in 2017 was 54.8 billion tonne-km and was higher than in 2016 by 4.2 billion tonne-km, i.e. 8.3%. The average distance of transport increased a little bit – from 227.8 km in 2016 to 228.5 km in 2017. In 2017, freight operators’ operating performance amounted to 80 million train-km – i.e. by 8.2% more than in the preceding year.

Rail freight transport performance 2010-2017 (mln tons)



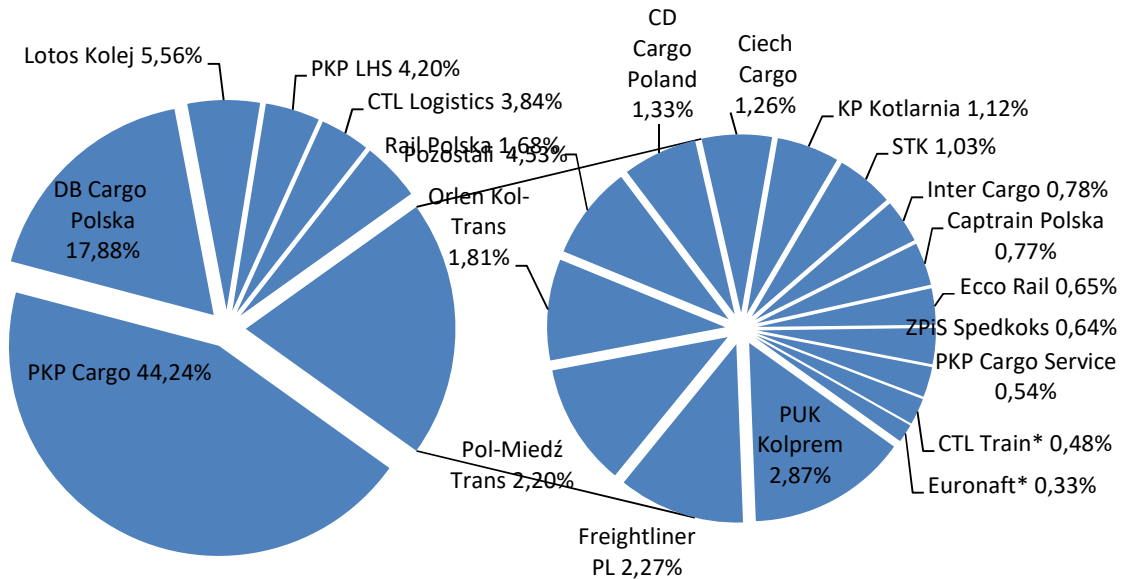
Based on the detailed data for the three quarters of 2017, one can see that the results were influenced by the larger volumes of intermodal transport and bulk cargoes, such as coal or aggregate.

Rail freight transport performance 2010-2017 (billion tonne-km)



Although the 2017 data show that the situation of freight operators is much better than in the previous years, it seems that it is necessary to create appropriate conditions for the common, most economically justified use of rail and road networks for freight transport services. The need to increase the role of the railway has been emphasised for many years. When comparing transport performance in the transport of goods by rail and road, it can be noticed that in recent years road transport has been systematically growing, while rail transport has remained stable – with the last year being the year of growth.

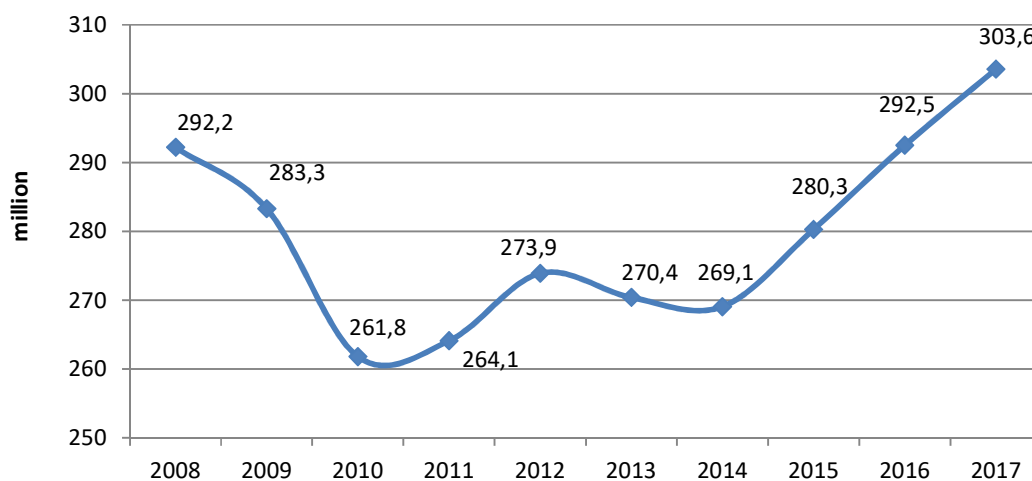
Rail freight market structure in 2017 (based on performance in tons)



Passenger operators

The year 2017 was a record-breaking year in passenger transport. The result of 303.6 million passengers carried is the best in 15 years. It is nearly 3.8% more than last year. It is clear that Poles are willing to return to travelling by train. The railway's offer matches passengers' needs to a better extent. Comfortable, new or upgraded trains, shorter travel times, properly scheduled timetables – it is what encourages people to rail travel.

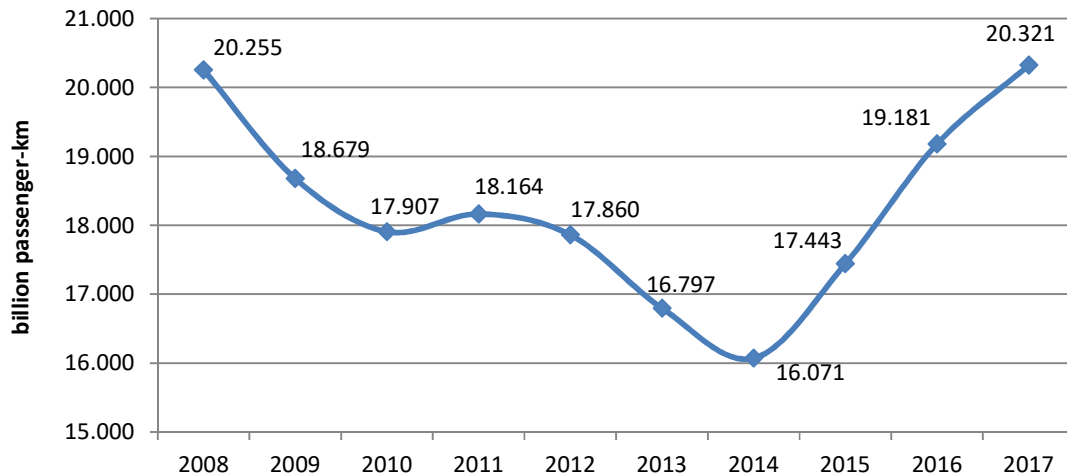
Passenger transport performance 2008-2017 (million passengers)



When compared to the previous year, the market shares – both in terms of the number of passengers and transport performance – remained at the same level in most companies. It is worth noticing that $\frac{3}{4}$ passengers travelled by Przewozy Regionalne, Koleje Mazowieckie, PKP Intercity or PKP SKM in TriCity. The share of the third largest company on the market, PKP Intercity, increased by approx. 1 percentage point and amounted to 14.1%. When comparing 2017 to 2016, the shares of Koleje Dolnośląskie, WKD, Koleje Małopolskie, and Łódzka Kolej Aglomeracyjna went up as well.

PKP Intercity S.A., the largest operator of long-distance transport services, recorded a growth of passengers by 11.2% (over 4.3 million passengers) when compared to 2016.

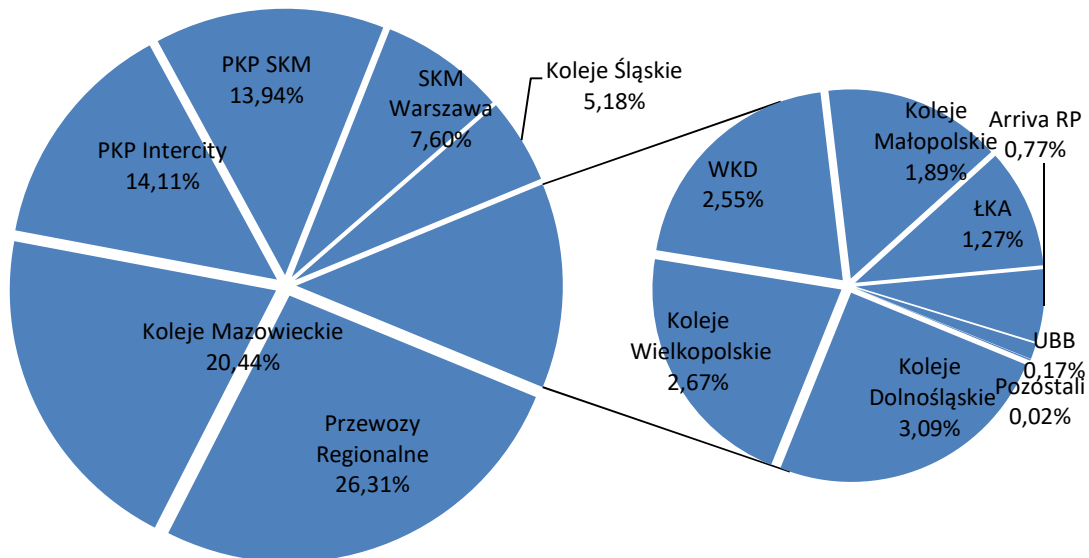
Passenger transport performance 2008-2017 (millions)



The largest regional operator is still Przewozy Regionalne, operating under the Polregio brand. Here, the number of passengers increased by 400,000 in a year, which makes it the company's highest result in the last three years. Among the regional and agglomeration operators, the largest increases were recorded by the following companies: Koleje Dolnośląskie (by nearly 2.1 million), Łódzka Kolej Aglomeracyjna (by nearly 1.3 million), Koleje Mazowieckie (by nearly 1.2 million) and Koleje Małopolskie (by nearly 0.9 million). The largest growth expressed in percentages was recorded among the local government operators offering services in Łódź, Dolnośląskie and Małopolskie Provinces. In the case of the Warsaw conurbation, the increase amounted to nearly 1.3 million passengers (1.4%).

The transport performance in 2017 was almost 6% higher than in the preceding year: 20.3 billion passenger-km.

Passenger market structure in 2017 (million passengers)



The unquestionable leader in transport performance is PKP Intercity. The operator's transport performance amounted to more than a half of all the passenger operators' performance. Przewozy Regionalne, with a share of 21%, ranked second. The third place, with an approx. 11% share, belongs to Koleje Mazowieckie.

The passenger operators' operating performance was 162.3 million train-km. When compared to 2016, the value grew by 1.4%, which means that the trains of the passenger operators' covered nearly 2.3 million km more.

European Funds

The infrastructural development over the years 2007-2015 was mainly based on the use of the funds from the Operational Programme "Infrastructure and Development" 2007 - 2013. It was the largest among all the EU programmes launched in Poland in the above-mentioned

period of time. Its budget exceeded EUR 28 billion. Of this sum, more than 3,300 investment projects of various nature received funding, starting from the investments in the transportation or energy infrastructure to cultural or medical infrastructure. As it follows from the summary presented by the Ministry of Regional Development, as much as 1,390 kilometres of motorways and express roads have been built, 8 airports have been modernised and 15 container reloading terminals have been created from the Operational Programme "Infrastructure and Development" funds by the end of 2015. A significant part of these funds has been earmarked for the local infrastructure (within this scope, the works included nearly 18,000 kilometres of sewage networks and 204 kilometres of dikes). The emphasis has been placed on the energy-related issues (more than 2,500 kilometres of gas pipelines).

Furthermore, the use of funding earmarked for the sector of railway transportation has turned out to be a major problem, mainly due to procedural and organisational delays. A number of projects carried out under the Operational Programme "Infrastructure and Environment" is, therefore, subject to so called phasing procedure and they are continued within the framework of the subsequent financial perspective.

The Operational Programme "Infrastructure and Environment" 2014-2020 is again the largest among all the EU aid programmes with a budget amounting to approximately EUR 27.5 billion. A considerable emphasis has been placed on the decarbonisation of the economy. As much as EUR 1.8 billion will be earmarked for the achievement of this objective within, among others, projects related to the production of energy from renewable sources (RES). The highest amount of funding, however, has been earmarked again for the achievement of the transport-related objectives. Within this programme, the sum of PLN 9.5 billion has been dedicated to the grants allocated for the development of the TEN-T road network, including further construction of motorways and express roads.

The amount of nearly PLN 3 billion has been earmarked for the urban road infrastructure. The sum of approximately EUR 5 billion will be earmarked for the railway development. The Operational Programme "Infrastructure and Environment" will support the infrastructure within and outside the TEN-T corridors and, regardless of the aforementioned, it will also support the system of urban railways. The railway investments carried out within the



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framework of this EU programme have been included in the National Railway Programme, a document validated at a governmental level.

It gives a more detailed picture of directions for the interventions than in the case of road (the National Railway Programme takes into account both investments that will be carried out from the Operational Programme "Infrastructure and Environment" funds, as well as the funds of the Regional Operational Programme, the state budget and the Railway Fund). The largest programmes carried out under the Operational Programme "Infrastructure and Environment" in this respect are simultaneously the biggest projects related to the development of railway.

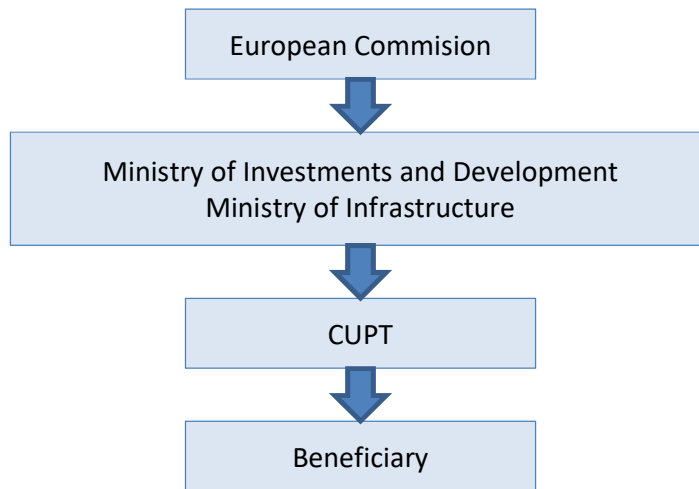
As in the previous years, smaller infrastructure projects may be conducted within the Regional Operational Programmes and the Operational Programme "Eastern Poland". Within the latter one, the amount of EUR 440 million has been earmarked for the priority of the sustainable urban transportation (investments in infrastructure and rolling stock), the amount of EUR 476 million for the road infrastructure and the amount of EUR 330 million for the railway infrastructure.

Centrum Unijnych Projektów Transportowych – Centre for EU Transport Projects

The Centre for EU Transport Projects (CUPT) was established in 2007. It comprehensively supports Beneficiaries in the preparation and implementation of investments financed from European Funds (Multiannual Financial Framework 2007-2013 and 2014-2020) and the European Union financial instrument "Connecting Europe" (CEF). The Centre's objective is to rationally and effectively make use (by 2023) of all EU funds allocated for transport projects.

Currently, it acts as an Intermediate Body for the Infrastructure and Environment Programme for 2014-2020 and the Eastern Poland Programme for 2014-2020.

CUPT in the system of EU funds





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PFR (Polish Development Fund)

The Polish Development Fund (PFR) group plans to invest in Pesa – the largest domestic rolling stock manufacturer. This is part of the governmental support for rail transport in Poland on the business level.

The Polish Development Fund was established in 2016 as a result of the transformation of the Polish Development Investments. This is a strategic-level company of the State Treasury that brings together financial institutions contributing to the long-term development of Poland's economic and investment potential.

The first tangible measure implemented by the PFR as a company operating in the railway sector was the establishment of a joint-venture company Rail Capital Partners in cooperation with the Polish rolling stock manufacturer – Pesa Bydgoszcz. This is a rolling stock pool inspired by private rolling stock pools, whose core business was lease of locos to freight operators. Based on the adopted business plan, the RCP company is to operate a fleet of at least 10–20 modern Gama locos made by Pesa. To this end Pesa and PFR are to invest PLN 200 million in the new entity in that period. The initial investment amounted to PLN 50 million. The Infrastructure Investment fund managed by PFR holds 49% of shares in the RCP company.

In March 2018, it was announced that the Polish Development Fund is to become directly involved in Pesa. The company is struggling to maintain its financial liquidity due to delayed implementation of contracts from the late stages of the EU's financial perspective 2007-2013, but also due to the lack of orders after the period of European financing ended. In November last year, the manufacturer received a credit from state consortia and private banks, which allowed it to complete the most important orders.

The prerequisite for obtaining it was the launch of a restructuring programme and attracting an investor. From among the willing companies (e.g. Skoda and Stadler, to name just two), the PFR was selected, which was granted the exclusive right to negotiate the taking up of shares in the company. The previous owners, namely the managers who bought the failing company less than 20 years ago and then helped it climb to the leading





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position on the Polish market, are to keep some of the shares. It is worth noticing that towards the end of the last year, the second largest Polish rolling stock manufacturer – Newag informed the public about the talks it held with the PFR about taking up part of the shares in the company. The company is listed on the Warsaw Stock Exchange, and the largest shareholder is Zbigniew Jakubas.

Also, the remaining entities owned by the PFR Group have been investing in railways. One of them is the Industrial Development Agency, which is another company owned by the State Treasury. It is the owner of the third biggest rolling stock company – FPS Cegielski, with its headquarters in Poznań. In recent years, the company in question has focused predominantly on production and modernisation.

In 2015, Industrial Development Agency took up the majority share in the Przewozy Regionalne Company, which runs passenger transport services in the whole of Poland. It is the largest carrier when looking at the number of transported passengers. A smaller part of it is owned by municipal governments that order transport services from it. A condition permitting the taking up of shares was the repayment of debts amounting to approx. PLN 600 million. This was a form of state aid granted to a company; hence this year the European Commission has launched screening proceedings. The PFR Group also includes Bank Gospodarstwa Krajowego, which, amongst others, offers financing to infrastructure investments.



PKP PLK: Financing sources and absorption of EU funds

2017: Rail investments summary

At the beginning of the 2018 the new head of the government Mateusz Morawiecki decided to trust the current Minister of Infrastructure and Construction, Andrzej Adamczyk. He had been criticised by the government for the lack of progress in the implementation of the housing programme, which is to become one of the flagship projects of the ruling party just before the elections. No effects of the project have been observed so far, so the name of Adamczyk's department was changed into the Ministry of Infrastructure.

Meanwhile, according to the assessment of both – the Ministry and the national infrastructure manager – the investments currently implemented are right on schedule, and some are carried out even faster than expected. In the opinion of the representatives of these entities, there is no risk that the plan in the National Rail Plan (NRP) will not be completed. In early December 2017, PKP PLK had over PLN 21 billion of contracted investments in compliance with investment cost estimates, and PLN 17 billion in final tender decisions. Eventually, the value of the contracts under the NRP signed by PKP PLK last year was over PLN 18.5 billion. The value of implemented projects as at the beginning of January is over PLN 25 billion.

According to the information furnished by PKP PLK, the investment plan for 2017 worth PLN 5.5 billion has been completed. Some say that it was exceeded – in the case of tracks replacement over 160% of the assumed level has been completed. At the same time, in comparison to the previous EU budget perspective (2007-2013), tangible improvement is noticeable in raising and spending funds. In the Infrastructure and Environment Programme 2014-2020, PLN 21 billion was allocated to railways from the EU, and almost half, i.e. PLN 10.4 billion, has already been assigned to 26 investments. According to the Ministry of Infrastructure, at a similar stage of the previous perspective, i.e. in 2010, it was only 15%. The situation is similar when it comes to expenditure certification (confirmation of expenditures sent to the European Commission). The current level is 10% of certification. In the case of the 2007-2013 perspective, it was achieved in the sixth year of its implementation – in 2012. In the fourth year (as now) – it was only 1 percent.

Among the largest completed and commenced rail infrastructure investments are:

- Kraków Zabłocie - Kraków Podgórze rail link,
- Kraków Towarowy - Rudzice section,
- modification and construction of new stops along Warszawa Koło and Warszawa Powązki ring rail line,
- Warszawa - Grodzisk Mazowiecki rail line,
- large projects for Lublin, Gorzów Wielkopolski, Wrocław, and Olsztyn,
- commencement of modernisation on key rail routes of national and international importance (Warszawa - Poznań, Lublin - Warszawa, Kraków - Katowice, Poznań - Szczecin),
- modification of Tarnów - Muszyna route,
- investments aimed at freight transport services (construction of additional tracks at stations for cargo traffic on the Poznań - Warszawa route, infrastructure amenities along the Oleśnica - Krotoszyn route, in the Silesia, and on access sections to the ports in Gdańsk, Gdynia, Świnoujście, and Szczecin).

In 2017, contracts were signed for the 7 out of 8 projects of the Operational Programme Eastern Poland:

- Lublin - Stalowa Wola Rozwadów,
- Skarżysko Kamienna - Sandomierz,
- province border - Czeremcha - Hajnówka,
- Białystok - Bielsk Podlaski,
- Lewki - Hajnówka,
- Działdowo - Olsztyn,
- Szczytno - Ełk.

The government stresses the importance of these investments, because they affect the eastern part of the country (a traditional repository of the ruling party's electorate), which is less developed in terms of transport services.

The changes that the infrastructure manager introduced to the relations with contractors accelerated investment implementation. Among them, the most important are advance payments (10%) for work performance and purchase of construction materials (50%).

Another thing that changed was the selection process of construction engineers and financial settlement methods (to make the engineer more interested in the control of the quality of works). Different distribution of investment risks incurred by the investor and the contractor was ensured (instead of a rigid contractual clause, the so-called risk matrix shared by individual entities). According to PKP PLK, the changes made it possible to avoid many delays or suspending task implementations caused by the contractor's concerns as to whether the investor would be able to settle individual projects. An interesting solution is rewarding of contractors' innovativeness, for example, introduction of the requirement to deliver turnouts in a block system to a construction site as a criterion for selecting a contractor in a tender. This is crucial for the pace of the investment and for maintaining turnout parameters. For the time being, this procedure applies only to turnouts with large radii, but within 2-3 years such system is to be a standard in all tenders.

Investment plans for 2018 and the absorption rate of EU funds

The investment plans for 2018 assume the expenditure of PLN 10.5 billion. Approx. 1,200 km of railway lines are to be upgraded. The status as at mid-January is as follows: 216 projects under implementation, of which 52 are starting this year. In 2018, according to the announcements of the managers of PKP PLK, 260 contracts are to be signed the estimated value of which is PLN 14 billion. The largest of them is to be related to the construction of the ERTMS/GSM-R infrastructure system (approx. PLN 3.1 billion).

Under the implementation plan of the NRP, projects worth almost PLN 67 billion will be realised until 2023 (of which approx. PLN 44 billion comes from EU funds). Approx. 9 km of rail lines are to be covered by works, while 8,500 km of rail lines will be upgraded to reach higher speeds.

The projects under the EU programme "Connecting Europe Facility" (CEF) are gaining importance. The facility replaced the funds allocated from the EU budget for the development of the TEN-T trans-European transport network, i.e. money earmarked for ensuring territorial cohesion and improving the movement of people and goods. So far, PKP Polskie Linie Kolejowe signed contracts for co-funding of 21 projects. As of December 2017, there were 17 projects in progress related to the modernisation of rail routes with the total



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value of EUR 3.33 billion. In mid-2017, more projects were approved, which gave a total of 21 investment projects worth more than EUR 4 billion.

The first 17 projects (co-funding: EUR 2.63 billion) assume that modernisation will be carried out on the total of 790 km rail lines, and work is to be completed by 2020. The average EU support from CEF funds for the project was 79% in the case of these investments. Four more projects approved by the European Commission at the end of June 2017 assume the implementation of modernisation projects with a total value of almost EUR 1 billion, with a co-funding rate of 82%. This time, the investments will cover additional 167 km of rail lines.

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Investment plans 2014-2023 and sources of financing of rail infrastructure

Project category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	SUM
Cohesion Fund	104 910,50	401 687,60	2 431 542,80	3 687 250,90	7 988 189,80	10 299 134,50	9 427 666,20	7 390 078,60	3 530 525,10	1 572 876,20	46 833 862,20
CEF	15 486,80	79 083,30	233 539,50	1 853 869,20	3 991 511,2 5	5 627 990,30	3 458 248,80	1 679 497,50	207 926,80	711 204,10	17 858 357,50
OP "Infrastructure and Development" 2014-2020	73 953,00	222 790,10	1 687 194,30	1 773 109,40	3 962 566,3 4	4 632 520,90	5 969 086,50	5 709 896,60	3 322 598,30	861 672,10	28 215 387,50
OP "Infrastructure and Development" 2007-2013	15 470,70	99 814,20	510 809,00	60 272,30	34 112,30	38 623,30	330,9	684,5	0,00	0,00	760 117,20
OP "Eastern Poland"	0,00	0,00	0,00	46 882,90	720 053,30	669 371,30	386 646,30	117 116,70	191 162,10	62 724,70	2 193 957,30
Regional Operation Programs (RPO)	0,00	240	5 476,30	124 096,20	669 775,80	1 377 572,70	1 658 039,70	613 813,60	223 798,10	51 959,50	4 724 771,90
RPO 2014-2020	0,00	240	3 882,00	122 802,80	668 958,40	1 377 551,90	1 658 039,70	613 561,00	223 798,10	51 959,50	4 720 793,40
RPO 2007-2013	0,00	0,00	1 594,30	1 293,40	817,4	20,8	0,00	252,6	0,00	0,00	3 978,50
National Funds	0,00	0,00	1 197 235,10	1 656 243,10	1 616 263,10	1 100 540,20	1 308 057,30	1 035 596,60	1 052 112,50	962 949,10	9 928 997,00
Non-military defensive spendings	0,00	0,00	14 100,20	15 000,00	15 000,00	15 000,00	15 000,00	0,00	0,00	0,00	74 100,20
SUM	104 910,50	401 927,60	3 648 354,40	5 529 473,10	11 009 282,00	13 461 618,70	12 795 409,50	9 156 605,50	4 997 597,80	2 650 509,50	63 755 688,60

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Poland is the leader in making use of the CEF funds in Europe – 17% of the funds from CEF Transport for 2014-2020 have been granted to our country. The entire programme budget is EUR 24.1 billion. PKP Polskie Linie Kolejowe is the largest beneficiary of CEF in Poland and the whole EU. The implementation of the national projects means that over 990 km of rail line have been upgraded (including accompanying infrastructure) and over 1,200 km of rail lines will have been equipped with the ERTMS system.

The construction of the Central Transport Port will act as another spur in the sphere of rail investments. This is particularly important because it involves the construction of new infrastructure, and not only modernisation, revitalisation or renovation of the existing rail lines. According to PKP PLK's estimates, with the construction of the CTP, 1,000-1,500 km of new rail lines will have to be built. The implementation of the huge investment calls for constructing new rail lines where trains will be able to run at the speed of 250 km/h. The link between the CTP and high-speed lines is to significantly alter the nature of transport in central Poland.

PKP PLK is also working out the possibility to accelerate traffic on some of the main lines by improving their parameters (track geometry, sharing lines with agglomeration and freight trains). Definitely, in the future, speed can be increased on the following sections:

- Poznań - Szczecin
- Warsaw - Białystok
- Gdynia Chylonia - Słupsk,
- Wrocław - Poznań

Perhaps it will also be possible for the Warszawa - Grodzisk Mazowiecki section, but not for the Kraków - Rzeszów line. From 2022, long-distance trains along the entire Central Rail Line (Grodzisk Maz. - Zawiercie) will go at the speed of max. 220 km/h.

PKP Polskie Linie Kolejowe, which manages nearly the entire rail infrastructure in Poland, had announced that in 2017 the value of investment contracts signed would reach PLN 29 billion in total. Ultimately, the year was signed off with contracts concluded for a much lower value – only PLN 18.6 billion. This is due to several reasons. The first is the savings

made in the tenders announced back in 2016. Because of the low-priced bids submitted by contractors, the proceedings were settled with the amounts that were, on average, 30% lower than the cost estimate. However, this was a temporary situation, after which a rebound took place, and at the end of 2017, cost estimates were often exceeded – in some tenders that was true for all submitted offers. The fluctuation of cost estimates and work prices has been observed in PKP PLK for years, since the estimated value of an investment is determined primarily on the basis of prices obtained in similar contracts in the preceding period. On the other hand, the number of orders being announced is not constant – after the investment gap of 2016, contractors much needed orders. When the market saturated, the prices eventually stopped at a level similar to the one in 2014-2015.

In general, according to the data furnished by the company, in late 2017, contracts worth approx. PLN 28 billion were being performed. This means, together with the already completed investments worth PLN 5 billion, represents half of the National Rail Programme's value (PLN 66.5 billion). When it comes to yearly summaries, one should not forget about investment implementation. The amount announced in this area was PLN 5.7 billion, while implementation costs turned out to be PLN 5.4 billion. In terms of material scope, some surplus was recorded because – due to the savings made during the tenders – the preliminary material scope could be implemented for approx. PLN 500 million less. And so, with respect to performance quantitative parameters, e.g. length of replaced tracks, number of modified platforms or replaced turnouts, the company's plan was achieved in the range of 110-140%.

According to the Management Board, the company still has several procedures in progress, including the large tender announced in early January, comprising the work on the Coal Central Line (going from the mining area in the Upper Silesia to the Baltic ports), for the amount of PLN 10 billion. Moreover, starting from Q2 of this year, tenders are to be announced for the "Build" investments, in the case of which designs are almost ready. Still this year, it should be possible to announce more of such procedures, the total estimate value of which would be PLN 8-9 billion (and another PLN 5-6 billion next year), which means that the value of PLN 50 billion earmarked for orders, either being prepared or already implemented, will be exceeded. All in all, in 2018, PLK is planning to announce 200 tender procedures for the amount of PLN 11 billion. They will be tenders for, among others, the next section of Rail Baltica, Czyżew - Białystok, modernisation of the Poznań - Szczecin



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rail line, modification of Warszawa Zachodnia station, improvement of access in the ports of Gdynia, Szczecin and Świnoujście. PLK also intends to sign more contracts this year, among others, for the implementation of the GSM-R system, modernisation of the Coal Trunk Line, and the Chabówka - Zakopane line. As the National Railway Program comprises approx. PLN 10 billion-worth of investments implemented from the state budget, not EU funds, which are announced on an annual or biennial basis, it can be stated that only 10% of investments are to be launched over the next years, to the amount of PLN 6-7 billion. At the same time, feasibility studies and designs are being developed for further investments worth more than PLN 18 billion (not on the basic programme list), which offers a large reserve of projects. Minister Jerzy Kwieciński, responsible for EU funds, assured PKP PLK about the possibility of over-contracting projects towards the future EU financial perspective.

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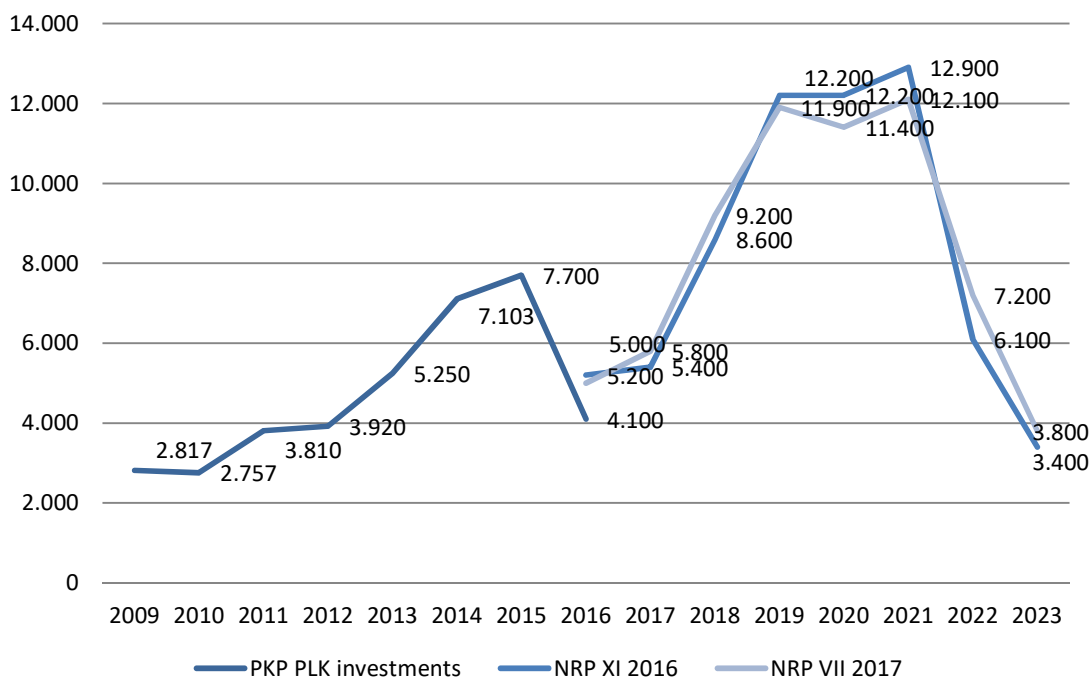
PKP PLK: investments in polish rail infrastructure – obstacles and problems

Announcing tenders and selecting winners is one thing, implementation of investments is another. This is where the largest risks occur, and the year of 2018 is the beginning of the largest part of the programme. The Polish rail network is to become a huge construction site. This year, the value of implemented investments is to be twice as high as last year – due to the above-mentioned savings made in tenders, this will not be PLN 11 billion, but PLN 10 billion. This is definitely a record in PLK's history – so far, the company has been able to spend no more than 7.2 billion in a single year (2015), and a year earlier it was 5.8 billion. However, its general investment expenditure has never exceeded four billion zlotys. In the years to come, the investments are to be even higher – at the level of PLN 13.5 billion in 2019 and PLN 12.8 billion in 2020. In 2021, investment expenditure of PLN 9.2 billion is planned, while for the years 2022 and 2023 – only PLN 3 billion and PLN 1.5 billion, respectively. This, however, is intentional. On the one hand, it is supposed to create a safety buffer in the event of delays in implementation and, on the other, facilitate the start of projects from the next EU financial perspective, after the year of 2020.

The beginning of the investment peak will also be a great test of the potential of the construction market and of organisational capabilities of PKP Polskie Linie Kolejowe, which has never carried out investments of such scale. As regards construction companies, the issue of low margins which were the price of winning orders is being raised increasingly often, which may translate into problems in the implementation of investments. Therefore, PKP PLK has announced a large tender for replacement work in the event of problems with the implementation of investments, divided into six parts. PKP PLK assumes that it will select up to five contractors for each part, and with each of the companies it will sign a framework contract for a period of five years. The maximum value of orders awarded by PKP PLK under framework contracts is a whopping net amount of PLN 2.5 billion.



PKP PLK: Changes of investment plans



Another issue is the shortage of labour. It is a nationwide problem. One of the largest contractors, the Budimex Company, increased its workforce by almost 550 people in 2017, and now it is planning to employ another thousand, half of which will be immigrants. The third important issue concerns the transport of aggregates, which is affected by the problem of the so-called bottlenecks. The local hindrances make it impossible to deliver the required amount of materials from the mines, located mainly in the Lower Silesia Province. Moreover, carriers must prepare a higher number of wagons than in previous years and more strictly observe the timetable. On the other hand, carriers report that the diversion routes are not prepared in advance. Even in the previous year there were situations when works on diversion lines and the target lines were conducted in parallel.

In January 2018, the Ministry of Infrastructure and Construction presented the progress status for the twenty most important railway projects being implemented in this EU perspective. As the Ministry admitted, the deadlines for the implementation of three of

them are already at risk or have been officially postponed. This concerns the project of modernisation of rail line C-E 59 on the Wrocław Brochów/Grabiszyn - Głogów section, rail line E30 on the Kraków Główny Towarowy - Rudzice section with the additional construction of agglomeration line tracks, and rail lines E30 and E65 in the Silesia, stage 1. As for the Wrocław - Głogów rail line, the preliminary implementation deadline was 2022. At this point, the project is expected to be ready in 2023. In the case of the massive railway project in Kraków, the Ministry of Infrastructure acknowledges that “there is a risk that the performance of construction works within the project may extend beyond the eligibility period of expenditure”. Furthermore, regarding the E30 and E65 routes in the Silesia area, the deadline for completing the project works together with the acquisition of necessary permits was set for 2020, and not for 2018 as originally planned. As PKP PLK explains, the risks already defined result from agreements signed with the contractors by the investor. For instance, the contract covering the Kraków Główny Towarowy - Rudzice section was signed with the deadline set for April 2021. However, since this is a project co-funded under CEF, it should end in December 2020. According to PLK, the contractor is developing a schedule which assumes that work will be completed in 2020. In 2021, rail line certification will be performed, among other things. The company's management emphasises that the financial risk concerns only a dozen or so million zlotys from the investment which is worth two billion zlotys. In the case of the Wrocław Brochów/Grabiszyn - Głogów section, the project was reassigned to the group of undertakings financed from budgetary resources, because no fewer than two contractors resigned as they were developing the investment feasibility study. On the other hand, modernisation of the E30 and E65 lines in the area of the Upper Silesia was complicated by the lack of communication between the investor and the Silesian Railways as regards the location of the new rolling stock base of this company. That is why the project is undergoing corrections.

A major challenge for PKP PLK will be the timely implementation of the modernisation of the Warsaw cross-city line, as well as the construction of a tunnel in Łódź, but they are not at risk at this moment. As part of the preparatory work, a contract with the designer has already been signed, the ring rail line is being prepared, and the Warszawa Główna station is to be rebuilt. The tender for the performance of the Warsaw station investment failed, which also resulted in personnel changes at PKP PLK. However, the dates proposed by the contractors in the renewed procedure give us hope that the lost time will be made up for during the actual implementation. It is still unclear in what variant the modernisation of the

cross-city line in Warsaw will be implemented. There was information that PLK is considering a simultaneous closure of all four tracks in order to complete the entirety of work by 2023, thus shortening the time of traffic obstruction, but the company's management declares that decisions will be taken following the consultation with the Warsaw's local government and after the presentation of the construction design. The complete closure of railway lines is being criticised by some experts. It would severely disorganise railway traffic, but investments carried out in this way hardly ever see performance of works in a 24-hour cycle, which could be expected with such a drastic decision. The investor explains, however, that during the implementation of the investment – especially in urban conditions – there is no shortage of surprises. These include the existence of infrastructure that is not on the plans, or applications being submitted for entering discovered objects into the register of monuments, for which you need to leave a time reserve. On the other hand, in the investor's opinion, the postulate to carry out work in a 24-hour mode is not possible to meet due to the nuisance of construction works for the residents.

Yet another issue is the proper preparation of the investment. The company's management has, among others, made some changes related to geological surveys. In contrast to previous investments, they will be carried out already at the stage of feasibility study, rather than at the construction design stage, which significantly reduces the risk. Moreover, the boreholes are made every 100 m, rather than every 500 meters, which had been the case. The approach to contract engineer's services has also been changed. Prices for such services specified in tenders increased by 50% to 100% because the value and experience of the team are assessed. PKP PLK hopes that better remunerated contract engineers will be able to change their approach to supervision over the investment, which will translate into better quality of the work being carried out.

Mounting problems (Expert's view)

The market situation of contractors, especially those that perform public contracts, has been deteriorating and there are no grounds to claim that it would improve next year. The construction bonanza we are observing does not have a positive impact on contractors' standing. According to GUS (Main Statistical Office), their margins are increasingly lower,



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their portfolios – increasingly higher, while the debts accrued by construction companies are hitting the record high. A report by BIG Infomonitor and PZBB shows that construction companies own PLN 4.3 billion to one another and to financial institutions. Their debts grew by nearly PLN 0.5 billion in the year 2017 only.

It is, therefore, hardly surprising that the financial sector puts little trust in the construction sector. Because of the this, the contractors fail to maintain liquidity or expand their portfolios. Since I can recall, we have been warning our decision-makers against the so-called investment peaks, which became a huge issue in the previous EU financial perspective. A series of bankruptcies, terminated contracts, unfinished investments – in addition to the poor condition of this sector – should have taught them a lesson not to repeat the same mistakes in the future. However, the same mistakes were made again; the consequences of following such a development policy may have a more tragic outcome. It is true that the previous tough period led to a kind of the inter-sector cleansing, since many companies went out of business, and those that survived had to restructure and improve the efficiency of their operations, thus adapting to the new situation. And yet, this process cannot continue indefinitely. Let me remind you that in 2013–2014 the sector lost 150,000 workers. We need those people to do the work right now, and it is much easier to demobilise human resources than to mobilise them. The today's economic context is different – the construction sector is no longer one of economy's driving forces and it is much harder to attract employees. The shortage of work force is just one item on the list of problems. The prices of virtually all price-generating categories have gone up: materials, raw materials, subcontracted work (mostly sanitary works) – even the prices of design and supervision – all of which by approx. 20-30%. The effects of the intense price increase can already be observed in tenders. Either there are no bidders, or their offers go beyond available budgets. This is a new kind of market situation; one that the public sector has not envisaged. A case in point is the unsuccessful tender for the construction of the S-1 Lotnisko - Podwarpie section that the GDDKiA announced. None of the bidders decided to sign the contract because their bids ceased to guarantee profit. This is my favourite example, as it shows the effects of this highly complex situation. PKP PLK can already experience it through much higher bid prices.

Most affected are the contractors who had signed contracts for large road and railway investments in the last two years. As you know, such undertakings take years to finish, and



the contracts stipulate specific remunerations. Although contract prices are negotiable, but only with respect to the scope. The agreements do not really provide for price changes in the categories that have been witnessing the most drastic cost changes. Although some provisions on price valorisation were introduced, but its value may not exceed 1%, which is rather cosmetic, considering how much more expensive everything has got. In other words, the contracts signed a year or two years ago are no longer profitable, or they have started to generate losses. To balance the losses, companies need to expand their portfolios or increase margins, even though in the latter case it is hard to tell if the situation is not going to get even worse for them in a year or so. This issue does not have such a serious impact on subcontractors who sign contracts for shorter terms and who can adjust prices with every next project, thus adapting to the new situation.

As far as the railway construction market is concerned, the situation is even more challenging. The National Railway Programme (adopted in 2016) assumes gigantic annual outlays exceeding the industry's performance capabilities. In order to meet the railway construction objectives assumed as part of the new perspective, even this year over PLN 8 billion would have to be spent, which has never been achieved, even if the plan for 2017 was fulfilled with a safe margin. If one considers it against the background of the current market situation of the industry sector, a rather gloomy picture can be seen – far less optimistic than what the investor, PKP PLK, hoped for. The main obstacle is gargantuan hinderances affecting the transport of aggregates to construction sites. It bothers road and railway contractors at the same time. The carriers can satisfy, at best, 30% of demand. In fact, it was the fiasco of the railway construction programme that made it possible to complete the roads for Euro 2012, since means of transport were available to transport material to construction sites. The current status in this respect is dramatic with no feasible solution in sight.

Equally upsetting is the fact that, as per NRP assumptions, the outlays for railway construction in 2019-2021 are to exceed PLN 12 billion, which seems hardly attainable from the current perspective. When we were working on the critical analysis of the NRP assumptions in 2016, we did not take into account the major extent of changes in the construction sector. If one takes a long, hard look at the data, I think one should start working on the B plan so that we are able to spend aid funds by 2023.

PKP PLK: Investment projects 2014-2020



Central Transport Port (CTP)

The government has decided to locate the Central Transport Port (CTP) in Baranów, near Grodzisk Mazowiecki. From the perspective of rail transport, the decision was the right one – even if the construction of the CTP will not entail reactivation of the High Speed Rail project.

Baranów is situated, in a straight line, approx. 10 km away from Jaktorowo (where there is a stop of the rail service between Warsaw and Łódź, i.e. the first stop behind Grodzisk Mazowiecki, looking from the side of Warsaw), also crossed by the Central Main Line. Moreover, approx. 8 km away from it, there is the rail line linking Warsaw with Poznań (the town of Seroki, located between Błonie and Sochaczew). This means that in the vicinity of the planned airport there are three rail lines with trains running, even at this point, at a speed of 160 km/h (the speed on the Central Main Line is to be increased). Furthermore, these rail lines provide, directly or indirectly, convenient access to all key metropolises in Poland (including those north of Warsaw). PKP Intercity trains currently run on these lines offering links to all provincial cities of Poland.

In the light of all this, Baranów seems a much more favourable location than Mszczonów (which was a very strong candidate, especially when Cezary Grabarczyk was the Minister of Infrastructure). Although the Central Main Line intersects that area, the Poznań line does not. If the central airport was to be built in Mszczonów, the trains from Warsaw to Łódź running near the airport would probably have to bypass, e.g., Żyrardów.

Railways play the key role in servicing the Central Transport Port

The representatives of the current government often say that changing of the name of the planned airport (from Central Airport to Central Transport Port) reflects the ambition to make Baranów a transport centre for the whole of Poland – also for road transport (which seems like an easy job – the A2 motorway is located in the vicinity of Baranów) and for rail transport. In that case, what should be done to link the Central Transport Port with railway routes in the most effective way?

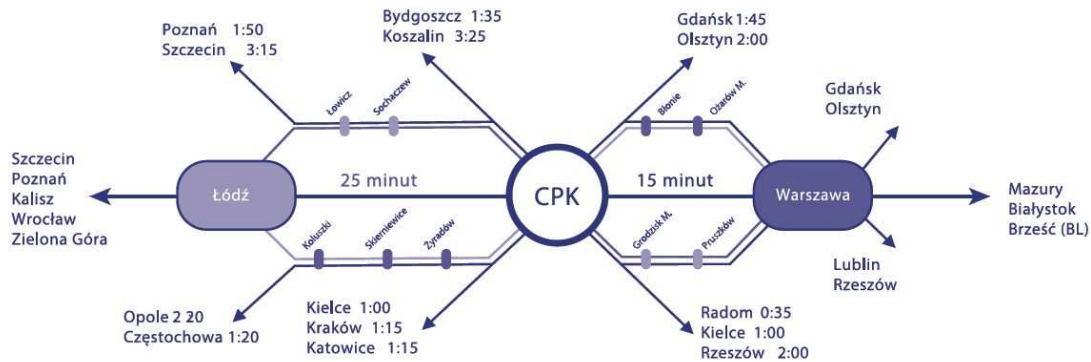
Obviously, the first step would be discarding some rather ridiculous ideas, such as building new rail lines as radially projecting from the Central Transport Port to all regions. Never mind the gargantuan costs or problems of formal and legal nature – ideas of this sort are infeasible also due to the fact that the Warsaw node is quite conveniently located in this respect. One should then focus on the construction of short sections that would link the Central Transport Port with the neighbouring rail lines.

Obviously, once the Baranów airport is erected, several new lines would have to be built to ensure access to the airport from Grodzisk Mazowiecki, the Central Main Line, Żyrardów (Łódź), and rail line no. 3 – with an exit towards both Warsaw and Sochaczew (Poznań). The railway station by the airport should be a through station, while a combination of new rail lines (and rail links) should be built so that through trains of any service could run without having to change directions. Thanks to this, all long-distance trains running on those lines (which now provide direct access to all provincial cities, except for Kielce) as well as regional trains linking Warsaw with, e.g., Skierniewice, Sochaczew, and Łowicz, could be directed to run on the route through the airport.

Exit in all directions possible

The combination of new rail lines must enable exit and entrance to rail lines no. 1, 3, and 4 (Central Main Line) – in each case without having to change directions. This way all trains running on these lines could stop by the airport and continue their journey without changing directions. The mistake made when the Okęcie Airport rail line was being built, or when the rail line to Balice near Krakow was being modified, should not be repeated. In both cases terminal stations were built, despite the fact that there are two major rail lines in their vicinity (Warsaw - Radom, Krakow - Katowice). Now, several years after those investments were completed, it is becoming even more obvious that the decisions not to build through stations by these airports were wrong.

CPK: Travel times to major cities in Poland



One should emphasise that building the link of rail lines nos. 1 and 3 with a route going via the airport of the new lines would actually be the realisation of the idea of Jaktorów rail line, which was abandoned years ago (the idea was an exit from Warsaw towards Poznań, alternative to the Błonie route). The Jaktorów line was being considered for construction by the Civic Platform – Polish Peasants’ Party coalition; however, due to immensely strong pressure from politicians, local governments, and the public from the Łódź Province, who feared that such project would definitely mean the end of the High Speed Rail undertaking, the concept was dropped.

The station by the airport must, obviously, have side tracks for conurbation trains connecting Baranów with Warsaw and finishing their run by the airport. In this respect, an extension of the services of Koleje Mazowieckie trains seems the most natural solution (they now end their runs in Grodzisk Mazowiecki). It will also be logical to extend to the airport the services of trains that are to run on the “ring rail line” in Warsaw in the years to come (the line is currently under modernisation with passenger halts being constructed) and which initially would finish their runs in Ożarów Mazowiecki (from there they would reach Legionowo or Warszawa Rembertów via the ring rail line and Warszawa Gdańska). This decision would make it possible to swiftly reach various areas of Warsaw and the agglomeration from the airport by regional and conurbation trains.

However, if the construction of the Central Transport Port is to be somehow linked to the reactivation of the High Speed Rail project, then a HSR station should naturally be located

by the airport. The possible development of HSR will not change the fact that the link with the airport – in the model described above – should be made available to all the existing rail lines.

It is also plausible that the development of the Baranów airport and an increased number of trains on the rail lines in its vicinity will necessitate the construction of new sections of mainline tracks along the existing rail lines. We have been addressing this matter in *Rynek Kolejowy* for a long time, namely we have been pointing out that the absence of tracks separated out for conurbation traffic on the lines leaving the main agglomerations is already causing serious problems with reconciling the interests of long-distance, regional, and conurbation operators. In the future, when the demand for efficient conurbation transport intensifies, developing timetables for these sections will be even more problematic and their capacity will be even more inadequate.

In the case in question, it may be necessary to lay new mainline tracks on rail line no. 3, separating conurbation traffic from the remaining traffic – at least on the section between Warsaw and Seroki. At the same time, it should be pointed out that the fact that conurbation traffic between Warsaw and Grodzisk Mazowiecki has been fully separated out is yet another argument in favour of locating the Central Transport Port in Baranów.

The fundamentals: frequency, travel time, and tariff

A very important issue, on which the success of the Central Transport Port depends, is attractive travel time and high frequency of trains running between the new airport and Warsaw – i.e. the undisputable current benefits of the Okęcie airport. It must be remembered that transferring the airport to a place located at a considerable distance from Warsaw may have advantages (an opportunity to develop a modern hub, which in turn would improve the competitiveness of PLL LOT), but it may involve disadvantages as well. One of them could be reduced attractiveness of short-distance flights – both domestic ones, but also, e.g., to some neighbouring countries. It is worth emphasising that, for instance, in the case of a Berlin-bound flight, the time needed to reach Baranów and go through the check-in may be the same as the time needed to get to Poznań by car (and by train once the modernisation of rail line no. 3 is over), which means one half of the journey to Berlin.

Therefore, the train runs to the airport may not be less frequent than every 15 minutes (just like the current frequency of trains going to the Okęcie airport). Also, taking into account the daring assumptions made by this government with respect to the importance of the new airport and the fact that it will not be supported by municipal transport services, the frequency should be higher. However, if the existing offer of agglomeration/regional trains on the Grodzisk and Sochaczew rail lines is relied on (plus the planned new trains to Ożarów), if they are put on the route via airport, then there should be no problems with ensuring such frequency.

Equally important is the attractive travel time. One must remember that today it takes only 20 minutes to get from the Okęcie Airport to Warszawa Centralna (or Śródmieście) by train. When it comes to Baranów, it will be difficult to obtain such result. Even if the agglomeration/regional trains from Grodzisk and Sochaczew rail lines are redirected to the airport, as described above, it is worth considering if shuttle trains should be launched, i.e. trains running non-stop between Warszawa Zachodnia and the airport. With the current state of infrastructure, it should take max. 20–25 minutes to get from the airport to the Warszawa Zachodnia station, or 25–30 minutes to the Warszawa Centralna station. Certainly, the construction of the Central Transport Port should reduce that time even more.

The role of shuttle trains could be taken over by long-distance trains, on condition that a special, preferential tariff is introduced on the route from Warsaw to the airport, with ticket prices similar to ones used on agglomeration/regional trains, rather than on long-distance trains. Rolling stock would also be an important factor here: conventional cars of the old type, with folding doors and high outside stairs would, not be fit for shuttle trains.

Central Transport Ports + HSR North?

Linking railways with the Central Transport Port may also involve, at some point in the future, the construction of the “KDP North”, i.e. HSR line, which would link Warsaw with the TriCity via Płock, Włocławek, Toruń. Since the concept of the HSR North presented in *Rynek Kolejowy* involved modernisation of the rail lines Łódź - Kutno - Płock (so that also Łódź could obtain a fast link to the TriCity), some of the trains running between the TriCity



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and Warsaw could be sent from Płock via Kutno, rail line no. 3, and the Central Transport Port – and not via Modlin.

Obviously (in addition to extended travel time), it would be disadvantageous to the Modlin airport, but there are experts who claim that once the Central Transport Port is put into service, smaller airports will be hit by a crisis.

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High Speed Railway Infrastructure

The concepts of restructuring Polish railway infrastructure by building high speed rails, which emerged in early 1990s, covered national and international aspects. The first direction strategy for the new railway network in Poland (1995) assumed that in addition to improvement of railway connection services between Polish towns, also the geographical location of our country will be used, i.e. the cross-road of the future Trans-European high-speed rail lines on the north-south and east-west axis. With the maximum speeds assumed in this programme, i.e. 300 km/h, the travel time from Warsaw to Berlin would amount to approx. 3 hours, while to Moscow – approx. 6 hours. The great revolution would take place in rail transport services with our northern neighbours – the extended Central Railway Main Line would make it possible to provide fast services between Warsaw and Prague, Bratislava, Vienna, and Budapest.

After 2000, two UIC papers were developed, where a proposal to establish a network of fast railway services in the entire Central Europe was presented. The rail connections from Poland with the Czech Republic and Germany were analysed.

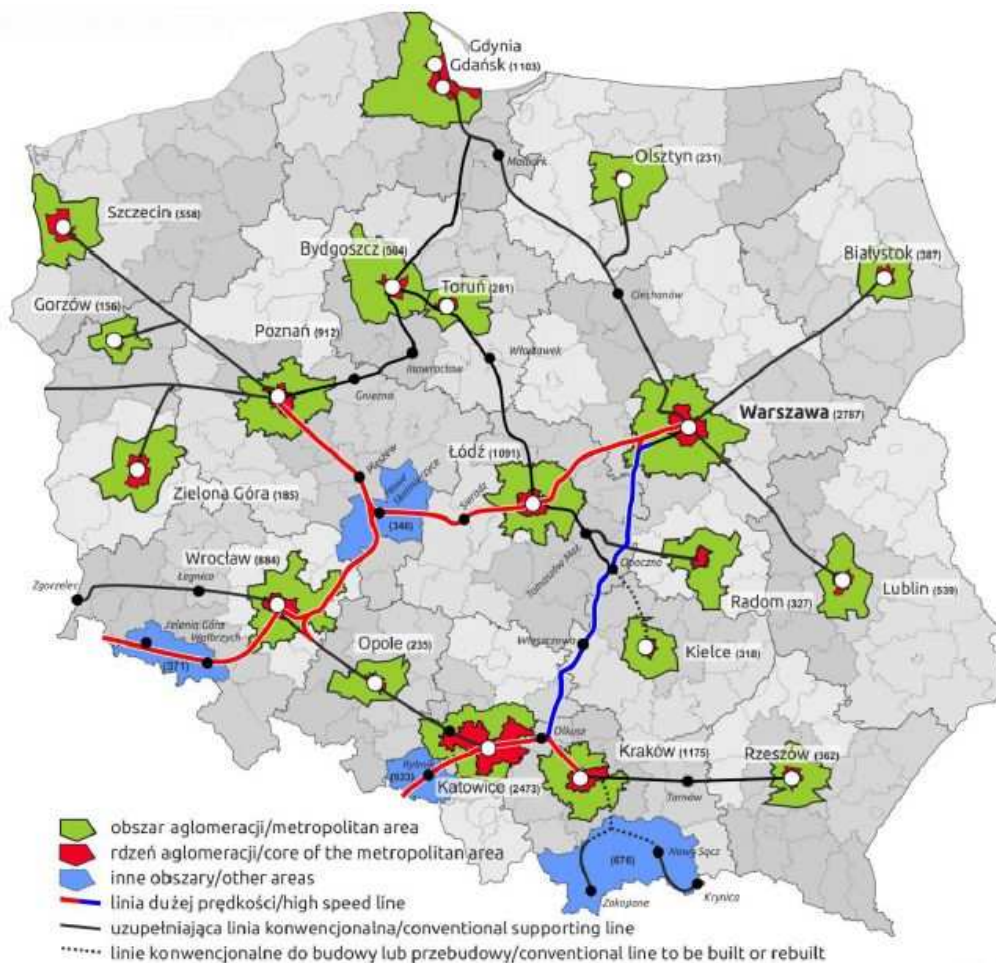
In 2004, after Poland's accession to the European Union, selected Polish railway lines were included in the Trans-European Railway Network (TEN-T). The size of the Polish part of this network was modest compared to the road network. Efforts to create a more favourable shape of the Polish rail network began in 2006.

The programme for high-speed rails in Poland adopted in 2008 validated the direction of these actions. This enabled the commencement of work on the Feasibility Study for the construction of high-speed rails. PKP PLK, while performing the HSR-related work, recommended on 3 October 2011 an option of HSR course. However, in December of the same year, the-then minister postponed the construction of high-speed rails in Poland to 2030.

In 2010, the countries of the Visegrad Group signed a report on joint activities for the creation of an efficient transport network in Central Europe that would meet the demands of the 21st century. One of the points of the report was related the construction of a high-

speed rail network. The proposed network included railway line projects which had construction concepts ready in four countries, and their cross-border connections. On the Polish side, the network included the Warsaw - Łódź - Poznań/Wrocław line with its service connections with Berlin and Prague as well as the Central Mail Line Południe from Warsaw to Katowice and Kraków along with the new section Katowice - Ostrava. Most of the provisions of the Report were immediately incorporated into the draft of the amended EU regulation on the new TEN-T network from 2013. This regulation also included the high-speed Rail Baltica line from the Polish border to Tallinn.

HSR in Poland: Proposed travel times



The work so far regarding high-speed rails in the countries of Central Europe focused on studies or conceptual work only. A dividing line for the implementation of projects from the so-called TEN-T base network is 2030. Other projects from the comprehensive network can be implemented even after 2030, until 2050. The degree of advancement of work in individual countries is different – with the most advanced being in the Baltic countries (this year the project enters in the implementation phase with the end date in 2026), while the least advanced – in Hungary.

The study work on the high-speed rails programme in Poland came to an end in 2015. The planned national high-speed network would cover the line from Warsaw to Poznań and Wrocław via Łódź and the line from Warsaw to Katowice and Krakow – both connected with the upgraded Łódź - Opoczno line. Pursuant to the recommendations of the European Commission preliminary feasibility studies were developed for the cross-border sections Wrocław - Prague and Poznań - Berlin. The study for the new Katowice - Ostrava line had been completed earlier in 2010. Also, in 2016, a new railway station building in Łódź, was completed – it was supposed to be the railway station for high-speed rails. Contrary to the prevalent opinions, the high-speed rail programme was not abandoned – it was postponed. The planned network is compliant with the guidelines of the National Spatial Development Concept from 2011 and meets all the guidelines on ensuring the cohesion of the country, which are also valid in the latest Strategy of Responsible Development. The key element of the new high-speed rail network using new high-speed and other upgraded lines was to provide short travel times between the largest centres in eastern and western Poland within 3-3.5 h (table 2).

HSR in Poland: Proposed travel times

Services	Travel time
From Warsaw to the largest Polish cities with a radius of 300 km (e.g. Poznań, Wrocław, Kraków, Katowice, Łódź, Lublin, Białystok)	Approx. 1 hour 30 minutes or less
From western to eastern cities of Poland (e.g. Poznań - Lublin/Białystok, Wrocław - Białystok/Lublin, Poznań - Kraków)	Approx. 3 hours or less

From Warsaw to the cities in the cities on border area provinces (e.g. Szczecin, Zielona Góra, Jelenia Góra, Zgorzelec, Zakopane, Rzeszów, Olsztyn, Gdańsk)	Approx. 3 – 4 hours or less
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To attain the objectives, the train maximum speed of 300-320 km/h would suffice, i.e. in the generally available technology. The “Y” line was routed for the speed of 350 km/h, while the geographical parameters of the Central Main Line are up to the speed of 300 km/h.

In November 2016, then-deputy PM Mateusz Morawiecki announced that before 2020, the government wants to propose a certain option of their development. In February this year, the Minister of Infrastructure and Development announced that the decision was accelerated so that it could be ready by mid-2018. The President of PKP PLK was also in favour of construction of new railway lines.

PKP PLK: major investments projects

Hereinbelow one can find basic information about investment projects in relation to which PKP Polskie Linie Kolejowe is running tender procedures:

- **Modification of railway infrastructure at Dąbrowa Górnicza Wschodnia and Dąbrowa Górnicza Strzemieszyce stations as well as on the Dąbrowa Górnicza Wschodnia - Dąbrowa Górnicza Strzemieszyce route as part of the investment project called: "Work on railway lines nos. 62, 660 on the Tunel - Bukowno-Sosnowiec Płd. section."**

Contact: Łukasz Chodacki, lukasz.chodacki@plk-sa.pl, +48 327104994

Bid submission deadline: 28 March 2018

Contract value: PLN 42 630 000

Project description: The project covers preparation of project documentation (construction design, obtaining the necessary administrative decisions, preparation of the detailed design, as-built documentation, etc.) and performance of work. As part of the project, the tract structure at stations Dąbrowa Górnicza Wschodnia and Dąbrowa Górnicza Strzemieszyce will be modified as well as along the Dąbrowa Górnicza Wschodnia - Dąbrowa Górnicza Strzemieszyce route on tracks no. 1 (at km 65.445 – 67.067), no. 2 (at km 65.496 – 69.714) and no. 4 at Dąbrowa Górnicza Strzemieszyce (at km 68.605 – 69.490). Fourteen turnouts will be modified and double-edge platforms at Dąbrowa Górnicza Wschodnia station. Three engineering objects will be revitalised, and a viaduct will be modified. The new railway traffic control devices will be modified (due to the replacement of the surface) at Dąbrowa Górnicza Wschodnia station. The drives of signalling devices, cables and track-side elements will be replaced. The investment will be made from funds from the State Budget.

- **LOT D – Work on railway lines nos. 131, 542, 739 on the Rusiec Łódzki (km 137.500) - Zduńska Wola Karsznice station (km 170.212)**

Contact: Jaromir Chojecki, Jaromir.Chojecki@plk-sa.pl, phone: +48 224732404

Bid submission deadline: 16 March 2018



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Contract value: PLN 486 265 500

Project description: The project will be implemented as part of the project from the list of the Operational Programme Infrastructure and Environment, which is related to the work on the CE 65 railway line on the Chorzów Batory - Tarnowskie Góry - Karsznice - Inowrocław - Bydgoszcz - Maksymilianowo section. The investment comprises the work on railway lines nos. 131, 542, 739 on the Rusiec Łódzki (km 137.500) - Zduńska Wola Karsznice (km 170.212) section. The term of the contract performance is 52 months from the moment the contract is signed. In addition to the development of project documentation, work will also be carried out with respect to track structure and trackbed, railway traffic control devices, telecommunications equipment and systems, traction network with power supply, power system devices and systems, engineering structures, platforms and buildings, pedestrian crossings and level crossings, geology and geodesy. The project is applying for co-financing from the European Union from the funds of the European Program Operational Programme Infrastructure and Environment 5.1-14 for 2014-2020.

- **LOT C – Work on railway lines nos. 131, 686, 687, 704 on the Kalina (km 66.800) - Rusiec Łódzki (km 137.500) section**

Contact: Danuta Lechowicz-Królak, danuta.lechowicz-krolak@plk-sa.pl, phone: +48 224732165

Bid submission deadline: 16 March 2018

Contract value: PLN 1 134 458 700

Project description: The project comprises development of project documentation and performance of construction work in the “Design and Build” mode in the case of work on railway lines nos. 131, 686, 687, 704 on the Kalina (km 66.800) - Rusiec Łódzki (km 137.500) section as part of the Operational Programme Infrastructure and Environment 5.1-14 called “Work on the CE 65 railway line on the Chorzów Batory - Tarnowskie Góry - Karsznice - Inowrocław - Bydgoszcz - Maksymilianowo section”. In addition to the project documentation, work will be performed with respect to track structure and trackbed replacement, railway traffic control devices, telecommunications equipment and systems, traction network with power supply, power system devices and systems, engineering structures, platforms and buildings, pedestrian crossings and level crossings, geology and geodesy. The work is to be complete within 52 months from the moment the contract is signed.





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- **LOT B – Work on railway line no. 131 on the Nakło Śląskie (km 29.000) - Kalina section (km 66.800)**

Contact: Danuta Lechowicz-Królak, danuta.lechowicz-krolak@plk-sa.pl, +48 224732165

Bid submission deadline: 15 March 2018

Project value: PLN 513 212 700

Project description: The project comprises development of project documentation and performance of construction work in the “Design and Build” mode in the case of railway line from Nakło Śląskie (km 29.000) to Kalina (km 66.800) as part of the Operational Programme Infrastructure and Environment 5.1-14 regarding the work on the CE 65 railway line on the Chorzów Batory - Tarnowskie Góry - Karsznice - Inowrocław - Bydgoszcz - Maksymilianowo section. In addition to the project documentation, work will be performed with respect to subgrade and trackbed, railway traffic control devices, telecommunications equipment and systems, traction network with power supply, power system devices and systems, engineering structures, platforms and buildings, pedestrian crossings and level crossings, geology and geodesy. The work comprising construction of environmental protection structures will also be performed. The project is to take 52 months from the moment the contract is signed.

- **Development of project documentation and performance of construction work on the Charsznica - Wolbrom - Jaroszewiec Olkuski section as part of task called: “Work on railway lines no. 62, 660 on the Tunel - Bukowno - Sosnowiec Płd. section”**

Contact: Dariusz Białek, dariusz.bialek@plk-sa.pl, phone: +48 12 393 15 62

Bid submission deadline: 8 March 2018

Project value: PLN 123 972 660

Project description: The order covers design and modernisation of a two-track railway line no. 62 on the section from the Charsznica station to the Jaroszewiec Olkuski station from km 7.419 to km 36.000, comprising replacement of the track structure (surface work from km 14.000 to km 34.782) with work regarding drainage, engineering structures, rail and road crossings, platforms with landscape architecture and access paths, buildings for traffic management, railway traffic control, electrical power engineering, telecom engineering,

traction network along with accompanying works. The term of the contract is 28 months from the date the contract is signed. The project is implemented with funds from the State Budget.

- **Revitalisation of railway line no. 139 on the Żywiec - Węgierska Górka route as part of investment project: "Work on railway line no. 139 on the Czechowice Dziedzice - Bielsko Biała - Zwardoń (state border) section"**

Contact: Anna Owczarek, anna.owczarek@plk-sa.pl, +48 327104695

Bid submission deadline: 8 March 2018

Project value: PLN 35 200 000

Project description: The implementation of the project assumes the preparation of project documentation (obtaining the necessary administrative decisions, preparation of detailed design, as-built documentation, including surveying as-built documentation, etc.) and performance of work: reconstruction of the rail structure on the Żywiec - Węgierska Górka route, revitalization of culverts and bridges, reconstruction of platforms, reconstruction of the traction network on the Żywiec - Węgierska Górka route, development of power and lighting equipment for level crossings of "C" category and "B" category, modification of external lighting on the level crossing of "A" category. The railway structure will be modified on the aforementioned section, in track no. 1 from km 77.11 to km 85.400. 14 culverts and 7 bridges will be revitalized. Single-edge platforms will be rebuilt at the Radziechowy Wieprz, Cięcina Dolna, Cięcina halt as well as the traction network on the Żywiec - Węgierska Górka route. The project will be implemented with funds from the State Budget.

- **Revitalisation of railway line no. 221 Gutkowo - Braniewo**

Contact: Marta Ługiewicz, marta.lugiewicz@plk-sa.pl, phone: +48 587213490

Bid submission deadline: 16 March 2018

Project value: PLN 336 823 331.55

Project description: The project covers designing and performance of work concerning revitalisation of railway line no. 221 Gutkowo – Braniewo. The work will be performed in three stages. During the first one infrastructure will be examined – engineering structures, buildings, geotechnical structures – as well as rainwater and meltwater quality. The second stage is the project documentation. The third one is all about the scope of construction

works as part of railway structure, trackbed, engineering structures, level-crossings, and passenger service facilities and buildings, buildings for traffic management, equipment of railway traffic control, telecommunications, non-traction power, environmental protection, collisions with external networks etc. The track work will be performed, e.g. within Dobre Miasto and Pieniężno stations. The project performance period is 28 months from the date the contract is signed. The Ordering Party has applied for additional financing of the project under the Regional Operational Programme of the Warmińsko-Mazurskie Province for 2014-2020.

- **Modification of track systems and auxiliary infrastructure on railway line no. E59 on the Rokietnica - Wronki section under the project “Work on railway line no. E59 on the Poznań Główny- Szczecin Dąbie section”**

Contact: Paulina Mrozek-Drożdż, paulina.mrozek-drozdz@plk-sa.pl, +48 616332422

Bid submission deadline: 23 March 2018

Project value: PLN 425 000 000

Project description: The work will cover a section of the E59 rail line from Rokietnica to Wronki. It will focus on the track structure and sub-track, railway traffic control devices (in the scope the project overlaps with the tender for the design and construction of railway traffic control and signalling devices, railway telecommunications equipment and telecommunications equipment and systems on the Poznań Główny - Wronki section), traction network, devices and power engineering systems, engineering facilities, platforms and buildings, roads, pedestrian crossings and level crossings, electricity supply of line-side power supply, drainage, etc. The project is to be completed within 27 months from the day the contract is signed. The project is co-financed by the European Union under the Connecting Europe Facility (CEF).

- **Modification of track systems with auxiliary infrastructure on the E59 railway line, Poznań Główny - Rokietnica section, under project “Work on railway line no. E59 on the Poznań Główny - Szczecin Dąbie section”**

Contact: Tomasz Urbaniak, tomasz.urbaniak@plk-sa.pl, phone: +48 616332421

Bid submission deadline: 23 March 2018

Project value: PLN 230 000 000

Project description: The work will cover a section of the E59 line from Poznań Główny to Rokietnica. It will focus on the surface and sub-track, railway traffic control devices (in the scope the project overlaps with the tender for the design and construction of railway traffic control and signalling devices, railway telecommunications equipment and telecommunications equipment and systems on the Poznań Główny - Wronki section), traction network, devices and power engineering systems, engineering facilities, platforms and buildings, roads, pedestrian crossings and level crossings, electricity supply of line-side power supply, drainage, etc. The project is to be completed within 27 months from the day the contract is signed. The project is co-financed by the European Union under the Connecting Europe Facility (CEF).

- **Design and performance of work for the task called: “Work on railway line no. 30 on the Lubartów - Parczew section” as part of project “Revitalisation of railway line no. 30 on the Lubartów - Parczew section”**

Contact: Ewa Wróbel, ewa.wrobel@plk-sa.pl; +48 22 47 32 155

Bid submission deadline: 27 March 2018

Project value: PLN 86 818 543.20

Project description: The order covers design and modification of a single-track railway line no. 30 on the Parczew - Lubartów section, km 52.578-79.073, with auxiliary infrastructure, Ciecierzyn passenger halt and selected infrastructure elements on other sections of this railway line, including railway traffic control devices, passenger service facilities, engineering structures, buildings, rail and road crossings, telecommunication networks and devices, non-traction power networks and devices, collision elimination. The contract shall be performed within 30 months from the date the contract is signed. The project is financed from the European Regional Development Fund under the Regional Operational Programme of the Lubelskie Province for 2014-2020.

- **Electrification of railway line no. 71 Ocice - Rzeszów under project: “Work on railway line no. 71 Ocice - Rzeszów”**

Contact: Tomasz Rudy, tomasz.rudy@pk-sa.pl, +48 12 393 15 62

Bid submission deadline: 26 March 2018



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Project value: PLN 57 645 600

Project description: The project is implemented in the “Design and Build” mode. The electrified sections are as follows: from km 0.000 to km 67.600 on railway line no. 71 Ocice - Rzeszów, from km 154.800 to 158.430 on railway line no. 91 Kraków Główny Osobowy - Medyka, from km 256,500 to km 257.700 on railway line no. 25 Łódź Kaliska - Dębica. As part of the order, a platform will be erected in the town of Chmielów, as well as a loop line in Majdan Królewski. The platform in Głogów Małopolski will be extended. The whole project is to be completed within 847 days of the day the contract is signed. The project will be financed from the State Budget.

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PKP PLK: passenger information systems

For some time now PKP Polskie Linie Kolejowe has been trying to implement a large project comprising assembly and development of passenger information system in the largest railway structures in the country. According to the plans, the project covers 736 station buildings, railway stations, and halts in Poland. As a result of the project implementation the standard of passenger services and safety is to increase by make the currently applied solutions more uniform. It will be easier to update, modify and introduce the required changes – e.g. when timetables are corrected.

As part of the project, megaphones will be installed at all station buildings, stations, halts listed therein (including a hearing aid system – induction loops) as well as electronic boards with current timetables and information about next connection services, station clocks of the time signalling system, and monitoring. Furthermore, at 288 railway stations of key importance for passenger traffic, platform displays with visual, dynamic passenger information will be mounted. These facilities will also receive a full monitoring system, covering station buildings, platforms, and walkways. The system is to be integrated and enable tracking of train movement in real time and offer information to passengers, e.g. using mobile applications. As part of the work, old equipment devices will be dismantled, presenting different technical culture and various manufacturers.

Initially, the scale of the project was to be much larger: it was supposed to cover 1950 structures. In the words of the national railway infrastructure manager the tender procedure was to be relatively easy to handle and help PKP PLK absorb EU funds from the previous EU budget perspective. The installation of the dynamic passenger information system and monitoring in the entire country was to be worth PLN 970 million. With co-funding of nearly 85%, it would be possible to use EU donations under OPIE by 2015.

The original tender was announced in October 2014 and its scope was limited to the 763 facilities mentioned above. Already at that time, however, there was very little time left to select a contractor and commence work. In February 2015, PKP PLK announced that it will look for other sources of funding for the project. The new management of the company claimed that the project preparation was chaotic and poor. Nevertheless, the project was



put on the basic list of the National Railway Programme – however its value was at the level of PLN 350 million only. The reason for this was the fact that the exchange of display systems and voice communication has been or is part of many tasks related to the modernisation of infrastructure, i.e. platforms and stations as well.

Another approach to the project was made in July 2017, when it was announced that a competitive dialogue commenced. According to the preliminary estimates of PKP PLK the net amount of PLN 421.8 million was to be spent on the system, including the additional tasks comprising device maintenance. PKP PLK's preference was that large suppliers were supposed to take part in the tender, which launched a dynamic information system in the past three years based on electronic information displays, in the min. amount of 10 within one facility, and e.g. delivered a public-address system comprising the min. number of 50 speakers within one train station. The implementation was to last until 2023.

In September 2017, PKP PLK published collective lists of applications filed by consortia, who requested permission to send their bids. Its access to the participation was confirmed by the following companies and consortia:

- Beijing National Railway Research & Design Institute of Signal & Communication Group,
- NDI with several affiliates,
- S&T Services Poland with Rail-Mil Computers and Alumbrados Viarios Socedad Anonima,
- Gulermak with Sprint SA,
- PKP Utrzymanie with KZŁ Bydgoszcz, Almagora, Aitek and Exatel SA,
- Introl-Energomontaż with Qumak, IB Systems, Smart in and European Security Trading Polska,
- MAXTO with Comarch Polska, Comp, Dysten, UAB "FIMA" and Intergrated Solutions,
- Asseco Data Systems with Asseco Poland and Finnish Teleste Corporation,
- Trakcja PRkil with Funwerk Systems and TK Telekom,
- consortium of companies concentrated around Aldesa Construciones.

The plans of PKP PLK assumed that the entities would learn about technical solutions and then five companies would be invited to the proper tender in January 2018. In February



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2018, the infrastructure manager informed that the second order was cancelled as well. It turned out that PKP PLK does not have the WAN network required for the system to function. Due to the lack of such infrastructure it will be impossible to coordinate implementation schedule of other investments which are tightly interconnected. Therefore, a procedure commenced to select a contractor for WAN skeleton network. The bidders kept appealing to the National Chamber of Appeals, so the project implementation is dragging. Thus, the extensive implementation project of the Dynamic Passenger Information System in several hundred railway facilities in Poland has been postponed.

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PKP PLK: implementation of GSMR/ ETCS on Polish rail network

The construction of the ERTMS/GSM-R system infrastructure on railway lines as part of the ERTMS National Deployment Programme is a massive project implemented by PKP Polskie Linie Kolejowe. The undertaking is meant to bring about civilisation progress – its deployment on the Polish railway network will significantly modernise this transport mode in our country.

Under the project, PKP Polskie Linie Kolejowe will install the ERTMS/GSM-R system on 13,600 km of railway lines in the whole of Poland. The system makes it possible to maintain communication between railway traffic participants (e.g. train driver, traffic controllers, railway infrastructure manager). The ERTMS/GSM-R and ERTMS/ETCS systems, which are being deployed simultaneously on selected routes, will enable trains to smoothly travel on railway networks of specific EU states. The trains will not have to stop at borders. No locos will have to be changed. Further advantages include higher train speeds and enhanced safety. All of this will be possible because there will be a single traffic management system in operation across the entire EU. The value of the entire investment is PLN 3.44 billion, and of the EU's financial aid – PLN 1.36 billion. The project is to be completed in 2023.

Now that the trial projects have been completed, which comprise the system deployment on several railway lines in Poland (e.g. on railway line E30, section: Bielawa Dolna - Legnica - Wrocław Opole, on railway line E65, section: Warszawa - Gdynia, or on railway line E20, section: Kunowice - Terespol), the time has come for the project encompassing system deployment country-wide. The tender for the project was announced in September 2015. The infrastructure manager estimated its value to be several billion zlotys. The task was divided into two parts. The first of them was about deployment of the GSM-R network (including a radio system featuring selected functionalities of GSM-R), installation of the tele-transmission access network to support the GSM-R network, a network of traffic controllers' terminals – FDS, and subsystem integration. The second part revolves around the deployment of a skeleton transmission network based on the xWDM/IPMPLS technology. The selection criteria were the price (90%) and the deadline (10%).





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The tender procedure started in September 2015. The bids were opened in late October. The organisers found out that the best bid for the main part of the tender was submitted by the consortium Nokia Solutions and Networks (the leader) and three other companies SPC-1 (owned by Wasko), SPC-2 (a subsidiary of Pozbud T&R) and SPC-3 (a subsidiary of Herkules). The gross bid value was PLN 2.79 billion. The second bid was placed by the consortium of Kapsch CarrierCom (the leader), Kapsch CarrierCom AB, Kapsch CarrierCom France SAS and PORR Polska Infrastructure, while the third one – by the consortium of Beijing National Railway Research & Design Institute of Signal & Communication Group (the leader) and PAI RES. The last of these bids was then excluded by the tender committee.

As for the second part of the tender procedure – most highly regarded was the bid placed by the consortium Longside Investment (the leader) and Alcatel Lucent Polska, worth PLN 51.5 million gross. The bids by three other entities were excluded: ATEM-Polska, COMP, and Alma as well as of FONBUD, ATENDE, ICRAFT and TOB YKPOM.

In autumn 2017, during the tender procedure, the consortium Kapsch CarrierCom and PORR lodged a complaint with the National Chamber of Appeals demanding that a section of Nokia's bid should be revealed. The claim was rejected, so the Kapsch consortium lodged another one – this time challenging the validity of the bid placed by the Nokia consortium. According to Kapsch representatives, the Nokia-led consortium would not be able to build a complete wireless network since it planned too few masts – radio communication structures (composed of, among other things, masts and pre-stressed concrete containers). According to Kapsch, the Nokia's offer reputedly suggested that only 1170 structures were to be constructed, whereas according to the official, widely available estimates by PKP PLK (from 2014), 2200 structures would have to be erected – nearly twice as many. Moreover, Kapsch and PORR criticised the composition of the winning consortium. This is because Nokia completed preliminary qualifications together with its special purpose vehicle companies SPC1, SPC2, and SPC3, which were taken over by Wasko, Pozbud, and Hercules at the 11th hour. The entity that lodged the complaint with the National Chamber of Appeals claimed that those three companies had no assets and that their share capitals amounted to paltry PLN 5000.

An opinion on the topic was voiced by the EC Compatibility Department of the Communications Institute at the State Research Institute (IŁ-PIB) in Wrocław. It presented a technical analysis developed at the order of the Tek-Project company in November 2017.





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It showed that the Ordering Party's Terms of Reference and the Price Breakdown in the Nokia's bid indicate that in some selected locations – e.g. in the area that is overgrown with forest and highly pleated, such as Dolny Śląsk (railway lines nos. 290, 348 and 786), but also in Zachodniopomorskie Province, or in the vicinity of Warszawa Powiśle station and Warszawa Wileńska station, the planned radio solutions are fraught with many faulty assumptions and simplifications, which may result in there being no signal coverage on the entire section. According to another opinion, of 20 November, developed at the order of PKP PLK by the staff of the Communications Institute, Department of Wireless Systems and Networks in Gdańsk, the initial radio planning is one of the first steps in the procedure of designing and implementing a wireless network. The experts argue that the basis for challenging the feasibility of planning could be the indication of specific, serious, topic-related flaws. What is more, on 11 December, so a day before the final session of the National Chamber of Appeals, the director of the IŁ-PIB, Jerzy Żurek sent a letter to PKP PLK explaining that the opinion from Wrocław was developed without Institute director's knowledge. The director challenges the opinion of that research unit, claiming that the conclusion about the defects in the Nokia's bid could not be made without thorough verification of preliminary planning. At the same time, Mr Żurek informed that the opinion in question did not contradict the opinion developed at the same time by the Gdańsk team at the order of PKP PLK. He did not, however, question the calculations of the Wrocław-based unit of the Institute that pointed to a probable loss of coverage in Dolny Śląsk, Pomorze and in Warsaw.

PKP PLK has also announced that back in 2014 the company received the document called "Preliminary GSM-R wireless planning" developed for nearly PLN 950,000 by ATDI. The authors of the study had forecast the need to build 1099 radio objects on 7283 kilometres of railway lines.

Eventually in January 2018, the National Chamber of Appeals ruled that the complaint should be rejected in its entirety, and that the winning consortium had complied with all the requirements of the ordering party. Kapsch and PORR still have the right to challenge the ruling in court, but this would not prevent PLK and Nokia from signing the contract.



PKP PLK: railway crossing and railway turnouts projects

As part of the safety improvement programme covering the Polish railway network, PKP Polskie Linie Kolejowe has been implementing investments that are part of the so-called Turnout Programme. The programme is the continuation of projects from the previous EU budget perspective that focused on the modernisation of level crossings and on building viaducts over tracks. These tasks are included in both large modernisation projects and in separate tasks.

The project “Improved Safety on Level Crossings” is part of the National Railway Programme. The financing comes from the OPI&E resources and the project value amounts to almost PLN 400 million. The project has been divided into two stages. The first stage concerns level crossings, and the second – viaduct construction.

Stage I assumes the modernisation of 182 level crossings on 73 railway lines in all provinces. The work comprises upgrading the level crossing category through the installation of automatic signalling devices (SSP), as well as through the replacement of obsolete units. On selected turnouts, road-track work is already in progress that involve the replacement of tracks and road surface near level crossings. This stage assumes the modernisation of at least 11 level crossings on railway line no. 26 from Radom to Łukowo, 10 level crossings on the Katowice - Legnica route, 6 on each of the two railway lines: Reda - Hel and Krakow Płaszów - Oświęcim. On the route from Toruń to Malbork, 7 level crossings are to be overhauled. The project is to be finished in 2020 and it will cost PLN 241 million.

Under stage II, PLK is performing work to replace 5 level crossings with a viaduct and tunnels. The project work is planned on railway line no. 2, section: Siedlce - Terespol. A construction of a tunnel is planned in Warszawa Rembertów and Warszawa Wesola, of two tunnels in Sulejówek and of a viaduct over railway trucks along Chełmżyńska Street, which will facilitate transport between Warsaw and Ząbki. The investments are being implemented in cooperation with the city authorities, local government of the province, and the Road Administration Body for the Mazowieckie Province in Warsaw. The construction work is to take place in 2019 – 2020.



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In the course of modernisation, modern technical solutions are to be applied that will guarantee the required safety level – despite the increasing number of cars on roads. The turnouts are being equipped with remote control devices, which means that all breakdowns of devices at level crossings will be reported to traffic controllers. Train drivers will be notified of any possible issues by indications of tracks-side distance signals. Moreover, level crossings will feature monitoring devices and event recorders.

The second project of key infrastructure elements replacement is the so-called Turnout Programme. This is its second edition already. The first one was supposed to act as a universal panacea for the investment gap and lack of orders for infrastructure companies in the previous EU budget perspective. The concept of the Turnout Programme was developed when, as a follow-up of the audit by the Ministry of Infrastructure and Construction, it turned out that PKP PLK did not have enough ready design documentation to commence the performance of investments from EU resources for the years of 2014-2020. The assumption behind its development was the improvement of track structure with a relatively limited expenditure of means and finance. The project was based on cyclical replacements of several hundred turnouts a year. The plans assumed project implementation in three turns. During the first one, 700 turnouts were to be replaced, during the second one – 1000, and the third one – 1500. The completion date of the first period was to be 2014. However, since the plan of track closures was not quite up to scratch, it was finished in late 2015. In the course of it, 697 new turnouts were installed on 31 railway lines and 142 traffic control posts. This involved the replacement of 30 km of tracks in 14 provinces. In total, the reduction of train travel time achieved thanks to the project amounted to 260 minutes.

Starting almost immediately after the conclusion of stage I of the Turnout Programme, during public consultations preceding the update of the National Railway Programme, the railway industry requested that work on stage II should commence. PKP PLK and the ministry of infrastructure complied with the request. And so, a new project was developed called: “Improvement of safety through the construction of new railway turnouts with an increased construction standard – stage II”, the total value of which was approx. PLN 200 million. It is co-financed by the European Union from the Cohesion Fund as part of the OPI&E. The material scope comprises the construction of 288 turnouts in 13 provinces. The





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work on 22 railway lines will include the replacement of turnouts and adjacent track sections.

In early 2017, PKP PLK announced the first tender – for the purchase and delivery of turnouts. It was divided into 3 tasks. The first one comprised the purchase and delivery of 88 new railway turnouts with switch sleepers for Railway Line Companies (ZLK): Bydgoszcz, Gdynia, Olsztyn, Poznań, Szczecin; the second one – the purchase of 87 turnouts for ZLKs in Częstochowa, Łódź, Opole, Ostrów Wielkopolski, Wrocław, while the third one – the purchase of 112 new turnouts and one track crossing for ZLKs in Kielce, Kraków, Lublin, Nowy Sącz, Rzeszów, and Skarżysko-Kamienna.

The purchases are to be completed by 30 November 2018. PKP PLK has also announced a tender for supervision and assuming the function of an engineer during the project implementation. According to the initial plan, the turnout installation was to be performed by subsidiaries of PKP PLK, mostly by PNUiK. However, the industry experts criticised such an approach due to the quality of divided works. This is because modern turnouts, especially delivered in blocks, need to be transported, stored, and installed in a very specific way.

However, the tender was not even properly finished. The bids in both proceedings were outside the budget. The tender might have been undervalued due to the addition of the requirement of transporting turnouts in blocks – without making provisions for it in the cost estimates. In July 2017, PLK decided to restart the project. This time the national infrastructure manager announced a single tender in the “Design & Build” mode – just like three years earlier, when stage I of the programme was being implemented. 245 turnouts were subject to modernisation (plus auxiliary work), located on 21 railway lines, 55 traffic control posts, in 12 provinces and in the areas supervised by 15 ZLKs. The subject of the order was split into 2 contracts (2 partial tasks): part I comprises the replacement of 142 turnouts located in the areas of ZLKs in Bydgoszcz, Gdynia, Łódź, Olsztyn, Ostrów Wielkopolski, Poznań, and Szczecin; part II covers the replacement of 103 turnouts located in the areas of ZLKs in Częstochowa, Kielce, Krakow, Lublin, Nowy Sącz, Opole, Skarżysko-Kamienna, and Wrocław. The total estimated net value of both tasks is over PLN 195 million.





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In December 2017, the first contract for the installation worth over PLN 80 million net was signed. The work is performed by the consortium of companies Schweerbau GmbH&Co KG Bauunternehmen and SBM Sp. z o.o. 103 turnouts, located in Dolnośląskie, Śląskie, Małopolskie, Świętokrzyskie, Lubelskie and Mazowieckie Provinces, are to be replaced. The old turnouts and the adjacent track sections will be dismantled and replaced with new ones. Over one third of all turnouts will be delivered to construction sites on special platform wagons as ready blocks. The replacement is to be completed by the end of 2018.

PKP Polskie Linie Kolejowe are replacing turnouts also during the performance of modernisation work carried out as part of the National Railway Programme. In 2017, as many as 500 turnouts were replaced.

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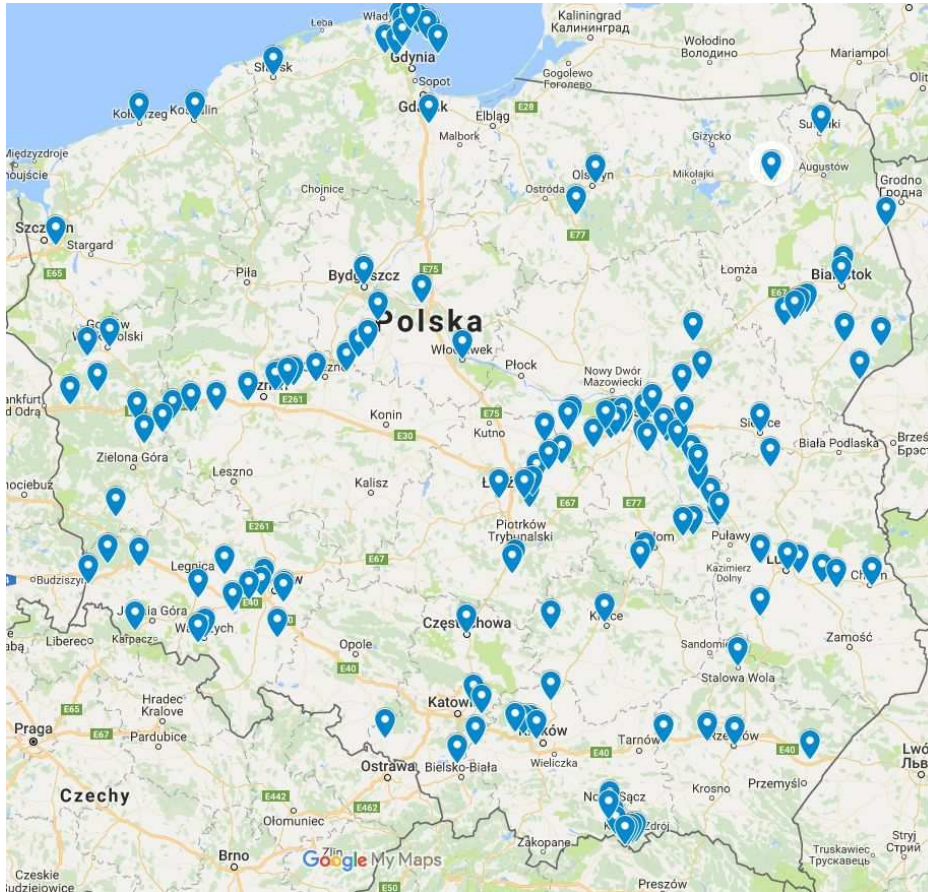
PKP SA: railway stations investments plans

So far, the biggest spur for modernisation and modification of the largest station buildings in Poland which we witnessed recently was the investments implemented with the support of the EU before the European football championships in 2012. It was then that the largest railway buildings in Poland were given new looks. The investments were usually implemented at the same time with the preparations of the hosting cities where the matches took place. The situation of smaller urban centres and train stations therein leave much to be desired.

The next step is to be the Railway Station Investment Programme adopted in October 2016, which is to be realised by PKP SA until 2023. The list contains not only the structures used by passengers from the largest Polish cities, but also railway stations from many smaller towns. The majority of investments assumes comprehensive modernisation but PKP SA is also planning to build new railway stations.



PKP SA: Railway Station Investment Programme



Initially, it was planned that as many as 464 locations (out of the 570 active railway stations managed by PKP SA) will be included. However, soon securing financing for the whole project turned out to be problematic. In October 2017, a list was announced containing nearly 200 railway stations, and the whole plan was called “the largest undertaking of this type in the history of Polish railways”.

Modernisation is performed in a comprehensive way: the work does not only cover the interior of buildings but the surroundings as well. More and more frequently, railway

stations – in addition to the basic functions related to handling railway traffic – perform social functions, becoming places open to local communities and meeting their needs.

The first investment processes launched by PKP SA included the 164 railway station buildings from the Programme. Priority was given to the structures located by the already upgraded railway lines, or the ones which are under modification or are planned for modernisation, covered by the National Railway Programme. Also, attention is given to cooperation with local governments thanks to which the modernised railway stations are to become elements of transfer nodes integrating different types of transport.

The list of railway station buildings which were included in the Railway Station Investment Programme by 2020 (per provinces):

- Dolnośląskie Province: Boguszów-Gorce Zachód, Bolestawiec, Chojnów, Imbramowice, Jawor, Kąty Wrocławskie, Malczyce, Siechnice, Smolec, Strzelin, Szklarska Poręba Górna, Święta Katarzyna, Wałbrzych Główny, Węglińiec, Wrocław Żerniki, Zgorzelec, Żarów;
- Kujawsko-pomorskie Province: Bydgoszcz Zachód, Janikowo, Kołodziejewo, Mogilno, Toruń Miasto, Toruń Wschodni, Włocławek, Złotniki Kujawskie;
- Lubelskie Province: Chełm, Dęblin, Kanie, Kraśnik, Lublin, Łuków, Nałęczów, Sadurki, Świdnik Miasto;
- Lubuskie Province: Trawniki, Babimost, Gorzów Wielkopolski, Nowiny Wielkie, Rzepin, Sulechów, Świebodzin, Witnica, Żagań;
- Łódzkie Province: Gałkówka, Gorzkowice, Koluszki, Łowicz Główny, Łódź Chojny, Łódź Kaliska, Płyćwia, Rogów, Rokiciny, Skierniewice, Wilkoszewice;
- Małopolskie Province: Andrzejówka, Barcice, Biadoliny, Jasień Brzeski, Kraków Mydlniki, Kraków Swoszowice, Krzeszowice, Łomnica-Zdrój, Miechów, Milik, Młodów, Muszyna, Muszyna Zdrój, Nowy Sącz Biegonice, Oświęcim, Piwniczna, Piwniczna-Zdrój, Powroźnik, Rudawa, Rytro, Stary Sącz, Sterkowiec, Wierchomla Wielka, Zabierzów, Zubrzyk, Żegiestów, Żegiestów-Zdrój;
- Mazowieckie Province: Barchów, Błonie, Brwinów, Celestynów, Chrząsne, Dęba Wielka, Dobczyn, Garwolin, Jaktorów, Jastrząb, Józefów, Kornelin, Łaskarzew Przystanek, Michalin, Milanówek, Mława Miasto, Mrozy, Otwock, Ożarów

- Mazowiecki, Piaseczno, Pilawa, Pionki, Pionki Zachodnie, Płochocin, Pomiechówek, Pruszków, Przetycz, Ruda Wielka, Siedlce, Sochaczew, Tłuszcz, Warszawa Powiśle, Warszawa Śródmieście, Wrzosów, Zajezerze koło Dęblina, Ząbki, Życzyn, Żytkowice;
- Podkarpackie Province: Czarna Tarnowska, Radymno, Rzeszów Główny, Sędziszów Małopolski, Stalowa Wola Rozwadów;
 - Podlaskie Province: Białystok, Bielsk Podlaski, Czeremcha, Czyżew, Hajnówka, Jabłoń Kościelna, Kuźnica Białostocka, Racibory, Siemiatycze, Suwałki, Szepietowo, Wasilków, Zdrody Nowe;
 - Pomorskie Province: Chałupy, Gdańsk Główny, Gdańsk Oliwa, Gdańsk Wrzeszcz, Hel, Jastarnia, Jurata, Kuźnica (Hel), Mrzezino, Prabuty, Pruszcz Gdański, Pszczółki, Puck, Reda, Słupsk, Swarzewo, Szymankowo, Tczew, Wejherowo, Władysławowo, Żelistrzewo;
 - Śląskie Province: Czechowice-Dziedzice, Częstochowa, Dąbrowa Górnicza, Dąbrowa Górnicza, Gołonóg, Racibórz, Sosnowiec Maczki;
 - Świętokrzyskie Province: Kielce, Skarżysko-Kamienna, Włoszczowa;
 - Warmińsko-mazurskie Province: Nidzica, Olsztyn Główny, Olsztyn Zachodni (completed), Olsztynek, Susz, Szczytno;
 - Wielkopolskie Province: Biskupice Wielkopolskie, Kobylnica, Nowy Tomyśl, Opalenica, Pałędzie, Pierzyska, Pobiedziska, Pobiedziska Letnisko, Poznań Garbary, Poznań Główny (Stary), Poznań Zachodni, Trzemeszno, Zbąszyń;
 - Zachodniopomorskie Province: Kołobrzeg, Koszalin, Szczecin Dąbie.

In mid-2017, PKP SA announced the tender for development of a feasibility study for the projects of railway station building modernisations; the order was divided into 12 tasks, grouping specific railway lines and covering 122 locations all over the country. The documents developed in this way are attachments to the applications for additional funding from EU resources. The detailed scope of modernisation work is determined based on the variant analyses at the stage of development of the feasibility study. The study also takes into account the management of the area around specific railway station buildings when it comes to handling passengers.

In October 2017, PKP SA announced another tender – this time for framework contracts for the development of project documentation for the construction or modification of 74 railway station buildings in the country. A period of 18 months was assigned for



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implementation. The structures were divided into several groups. The first group comprises the railway station buildings under conservation protection in the form of an entry into the register of monuments; the other group comprises the structures under conservation protection which are not included in the register of monuments. The third group comprises railway station buildings not covered by conservation protection, and the last group – newly designed buildings.

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PKP PLK: main contractors

Among the largest companies which performed contracts awarded by PKP Polskie Linie Kolejowe, the following should be mentioned:

Aldesa Polska – a subsidiary of the Spanish construction company Aldesa Group, which was founded in Madrid in 1969. In Poland, the company started its activity in 2007 in Kraków; currently it operates all over the country as a general contractor of facilities in the industrial, renewable energy, construction of buildings, and road and rail infrastructure sectors.

Budimex – a company operating in the road, rail, energy, airport and industrial branches. It has been listed on the Stock Exchange since 1995. Its strategic investor is a Spanish company Ferrovial. Among the largest orders completed Budimex are: LCS Ława (value: PLN 698 million), design and construction of Pomorska Kolej Metropolitalna (PLN 547 million), modernisation of Wrocław Główny station building (PLN 275 million). In addition to the infrastructure part, the Group also includes entities responsible for residential construction (Budimex Nieruchomości), or managing of municipal infrastructure (FB Serwis).

Colas Rail Polska – is part of the Colas Group, a French company involved in road construction and maintenance, operating in about 40 countries, where it employs over 62,000 people. 80% of its activity is devoted to roads, but it also deals with investments in road traffic safety, civil engineering, pipes, seals, structures, railways and field pollution control. The Polish company Colas Rail specialises in the construction of railway infrastructure, modernisation of existing railway lines and track systems as well as transformer and distribution stations. In 2016, the company expanded its business activity with rail transport services.

Dragados – a Polish company owned by the Spanish infrastructure giant. Other infrastructure companies are part of Dragados (part of ACS Group) as well, e.g. Vias y Construcciones S.A., POLAQUA Sp. z o.o. (Polish company taken over by Dragados in 2013), and Electren.



Energopol-Szczecin – a construction company which keeps up the tradition of an enterprise founded in 1949. Originally, it was focused on hydrotechnical construction – primarily on the modification of the port infrastructure of Western Pomerania after war damage. Currently, the company is expanding its competences and business profile: it also offers (in addition to port engineering) complex projects in the area of water and sewage systems, roads and bridges, large buildings and special foundations in the field. The company takes part in the implementation of railway investments as a consortium partner.

Feroco – the company is dealing mainly with modernisation and overhauls of railway infrastructure. It was one of the largest entities in this industry. The company owned by Zbigniew Jakubas (the owner of, e.g., the rolling stock manufacturer – Newag) went bankrupt in 2014. According to the information provided by the Management Board at that time the reason for this was the loss of financial liquidity, resulting from delays in settling amounts due by PKP PLK. In the opinion of the infrastructure manager this was caused by the problems between Feroco and its subcontractors. The largest projects by Feroco are: modernisation of the Tarnów - Dębica railway line (section of the E30) and LCS Gdynia on the E65 railway line.

Intop Warszawa – the company was founded in 2007. Its business activity is based in particular on the construction of bridges, viaducts, flyovers and multi-level intersections. The company also performs work related to general construction facilities, sanitary engineering and environmental protection. Intop Warszawa Sp. z o.o. also performs comprehensive modernisation of railway lines with auxiliary infrastructure.

Przedsiębiorstwo Budowy Dróg i Mostów – the company is based in Mińsk Mazowiecki; it specialises in the implementation of tasks in the area of construction, modernisation and overhaul of roads, bridges, and airports. The company has mineral-bituminous mass plants, located in the following provinces: Mazowieckie, Warmińsko-mazurskie, Podkarpackie, Lubelskie, and Łódzkie.

Pomorskie Przedsiębiorstwo Mechaniczno-Torowe (PPM-T) – the company was established in 2001 as a result of merging Zakład Napraw Infrastruktury and Zakład Maszyn Torowych w Gdańsku, as part of the restructuring process of the state-owned company



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Polskie Koleje Państwowe. The company has an impressive machine park which it uses to perform a full range of specialised services related to overhaul, improvement, and reconstruction of railway infrastructure.

Przedsiębiorstwo Remontowo-Budowlane TOR – the company deals with the implementation of infrastructure investments on the railway, mining, metallurgy, and energy markets. The company was founded in Mysłowice in 1994. It primarily deals with the construction of new tracks and turnouts, overhauls of existing tracks and turnouts, demolition of tracks, and other track-related construction work.

PUT Intercor – the company has been active on the railway market since 1992. As the main contractor it mainly handles construction of road and railway bridges and viaducts. Among the projects the entity has implemented one should mention the Pszczółki - Pruszcz Gdański section on railway line E65 and modernisation of railway line E59 Wrocław - Poznań.

OHL – the company is part of OHL ŽS, an entity with its registered office in the Czech Republic, owned by Obrascón Huarte Lain S.A., a Spanish international infrastructure company. Apart from Poland and the Czech Republic, OHL ŽS is also active in Bulgaria, Montenegro, Croatia, Bosnia and Herzegovina, Hungary, Slovakia, Romania, Moldavia, Kazakhstan, Azerbaijan, etc. In our country the company carried out, e.g. modernisation of railway line Kraków - Medyka - state border on the Biadolin - Tarnów section, or the work on railway line E30 (section: Zabrze - Katowice - Kraków).

PKP Energetyka – the entity is one of the main distributors of electricity, including electricity used by railway operators. It also performs modernisation work. In 2010, the privatisation process of PKP Energetyka commenced. In 2015, it was sold to the CVC Fund for PLN 1.41 billion. In 2016, a motion for annulment of the company's privatisation was filed with the court.

PORR Polska – the company operating in Poland is part of the Austrian holding which continues the tradition of PORR AG established in 1869 in Vienna. The entity emerged on the Polish market in 1987, when Holiday Inn hotel was being built. In 1993, PORR (Polska) S.A. was founded. In 2015, PORR was taken over by Bilfinger Infrastructure SA, and PORR



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Polska Construction and PORR Polska Infrastructure were separated from it. The basic competence area of the former was building and railway construction, while of the latter – mainly infrastructure projects as well as engineering and energy construction segment. In 2017, a merger of the two entities took place.

Rubau Polska – the company is part of the Construcciones Rubau Group operating for over 60 years in the construction sector in Spain, and for more than five years on the markets of Poland, Serbia, Macedonia, and Bosnia. The Construcciones Rubau Group is also present on the Latin American markets: Mexico, Colombia, Bolivia, Uruguay, and Peru. With its extensive experience in numerous infrastructure, building, and maritime construction projects, the company in Poland (in the form of a general contractor), implements construction projects of expressways, railways, bridges, and airport hangars, both in the “Design and Build” and “Build” modes.

Schweerbau GmbH - a German infrastructure company based in Stadthagen near Hannover. It implements investments in the area of track construction, rail processing, subway and agglomeration railway infrastructure, underground construction, welding and canal inspection. It operates specialised track machines used to replace track structures, perform maintenance work of tracks and turnouts, or cleaning the trackbed.

Skanska – an international infrastructure company. It is active as the main contractor in most segments of the infrastructure market in Poland. It also erects office or residential buildings. One of the largest tenders won by Skanska in recent years was the modernisation of railway line no. 20 in the area of the Warszawa Gdańska station.

Strabag – part of the European construction group based in Austria, which has been active for nearly 180 years. Strabag appeared on the Polish market in 1987 when it built Marriott Hotel in Warsaw. In recent years, the company was responsible for the modernisation of the Siedlce - Terespol section on the E20 railway line. In 2017, Strabag, as part of the consortium with Budimex, won the tender procedure for the performance and implementation of modernisation work on the Warszawa Gołębki / Warszawa Zachodnia - Warszawa Gdańska railway line.



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Torpol – it deals primarily with the construction and comprehensive modernisation of rail infrastructure. The company was the first Polish private company that worked on adapting the railway line to the speed of 160 km/h. In cities, Torpol carried out investments related to the creation of green tram tracks, equipped with silencing vibroinsulating mats and sound-absorbing screens. In 2013, Torpol won the tender for the modernisation of the Rail Baltica section (E75): Warsaw Rembertów - Zielonka - Tłuszcz (Sadowne). It is also active on the Norwegian railway infrastructure market. Since 2014, it has been listed on the Warsaw Stock Exchange.

Trakcja PRKiI – one of the largest companies in the infrastructure and energy sector in Poland. Its subsidiary Kauno Tiltai has a similar status when it comes to the Baltic States. As a result of further mergers and acquisitions (with PRK 7 SA in 2009 and the Lithuanian Tiltra Group in 2011), the entity gradually expanded its capabilities. Currently, in addition to modernisation of railway infrastructure, Trakcja PRKiI is also active in the segment of construction of roads, tunnels, airports, and ports. The company's largest railway contracts include: work on the E59 railway line, LCS Warszawa Okęcie, Łódź Widzew station, Łódź Fabryczna - Łódź Widzew section, and Kraków - Medyka - state border section.

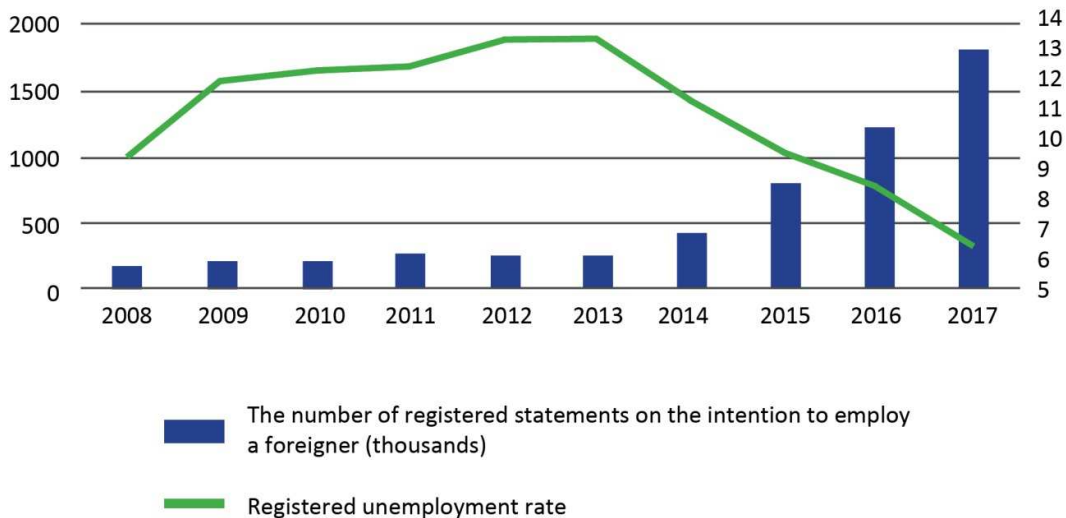
ZUE – the company was founded in 1991. Among other things, it designs and performs construction and modernisation of tram and railway lines. It also specialises in power systems, line tram infrastructure, as well as construction and modernisation of electric traction systems.

Shortage of labour force

One of the biggest threats to the implementation of the National Road Construction Programme for 2014-2023 and the National Rail Programme is the shortage of employees. This is a problem that most contractors struggle with. The shortage of labour force is becoming the reason why the largest contractors are reducing their activity on the market. In the future, it may affect the costs and timeliness of investment implementation.

Since 2012, when the largest investments related to the European Football Championship Euro 2012 ended, the construction market in Poland has been short of over 100,000 employees. While in 2012 over 488,000 people worked in the construction industry, the data for the three quarters of 2017 show that the average employment in the industry is 385,000 people.

Labour market in Poland 2008-2017



The biggest deficit of employees is in the following specialties: bricklayer, plasterer, fixer, paver, or carpenter. There is also a shortage of unskilled workers. The number of job offers in these professions is much higher than the number of people looking for a job. For

example, in the Warsaw labour office, 58 people registered in the profession of bricklayer in the first half of 2017. At the same time, the number of employment offers for people boasting such skills was 1045. The companies were looking for 950 steel fixers, but the labour office registered 10 unemployed people in this profession.

The gap on the Polish market is being filled by foreigners. In Poland, the citizens of six countries: Ukraine, Russia, Belarus, Moldova, Georgia, and Armenia can perform work on the basis of a statement on the intention to employ a foreigner. This so-called simplified form of employment applicable to citizens from outside Poland gives them the right to work for 6 months within the next 12 months.

Until late November 2017, the number of registered statements on the intention to employ a foreigner within the simplified procedure was 1.68 million, and according to estimates, by the end of the year it could have reached even 2 million. Of this, 13% of statements referred to work in the construction industry. The largest number of statements on the intention to employ a foreigner in the construction industry concerned the Ukrainians – 91%, i.e. over 116,000, followed by Belarusians (6,700), and Moldovans (over 1,800).

In the first six months of 2017, as part of the work permits issued to foreigners, 108,000 permits were issued. According to the estimates of the Ministry of Family, Labour and Social Policy, by the end of 2017 this number might have reached 250,000 permits (exact data will be revealed in February). Nearly 19% of the issued permits concerned the construction industry, of which the most (as much as 90%) were issued to the Ukrainians (over 18,600); Belarusians (811 permits) ranked second, followed by the citizens of Uzbekistan (213), Kosovo (186), Azerbaijan (104), and Moldavia (90). Work permits in the construction industry were also issued to, among others, 92 citizens of North Korea, 36 Indians, and 32 residents of Bangladesh.

The industry representatives point out that the labour market in Ukraine is depleting – many citizens with most wanted skills have long left to work abroad. There is also the fear that some Ukrainians will seek employment in Germany as a result of the abolition of visas. This will mean that workers will have to be looked for in other, far distant countries

New rolling stock in Poland

Last year, several dozen new vehicles appeared on the Polish tracks. All of them were manufactured by domestic companies. In this respect 2017 was better than the previous twelve months. When compared to 2016, the number of delivered EMUs doubled; after a one-year gap several DMUs were delivered as well.

In 2017, 42 electric multiple units and 5 diesel multiple units rolled onto the railway lines. A year earlier, 20 EMUs appeared on our tracks, but no DMUs were delivered. The vast majority of new vehicles are still acquired by local government entities – by Marshal Offices and the operators they own. In 2017, a revival was observed in new rolling stock in the case of Przewozy Regionalne: since late September 2015 local governments have been a minority shareholder, and the state-owned Industrial Development Agency has been the dominant entity.

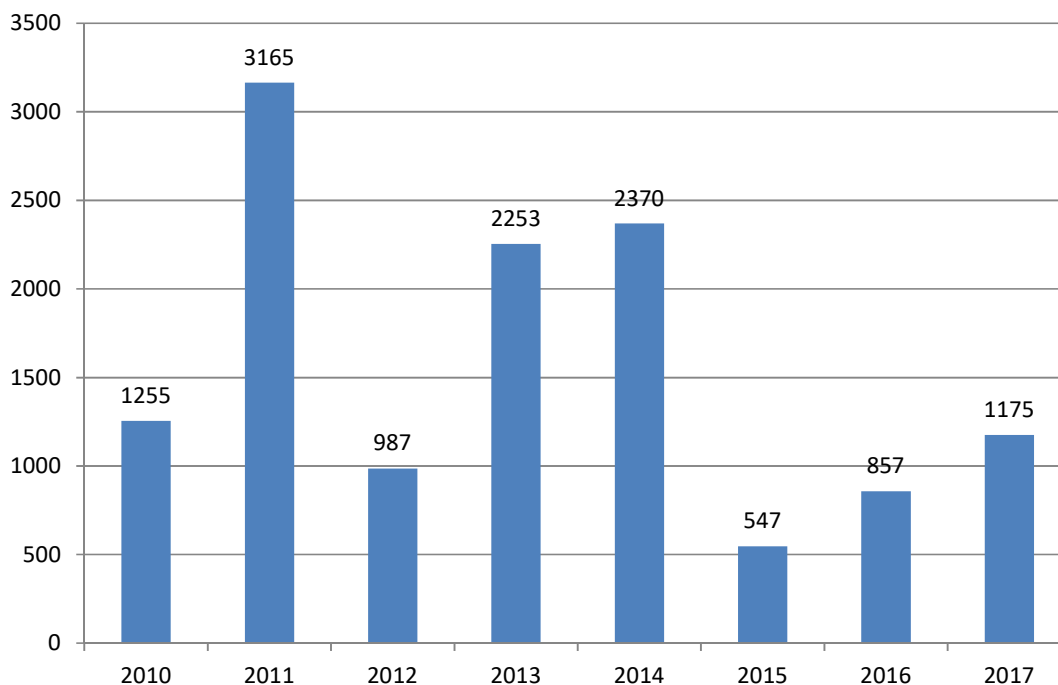
Despite the fact that the deliveries in 2017 were much better in terms of the number of units which entered the tracks, the period cannot be compared to 2015. It was then that the domestic operators expanded their fleets with as many as 74 EMUs (32 Impulse units, 1 Elf, 24 Flirt units, 7 Dart units, 5 Pendolino units and 5 Acatius Plus-family units), as well as 24 DMUs (7 SA133, 1 SA135, 7 SA136, 8 SA139 and 1 222M), and 12 passenger locos.

The value of contracts for the delivery of new passenger rolling stock in 2017 looks better than in the previous 12 months. In this period contracts were signed for a total value of approx. PLN 1 billion 176 million. In 2016, it was approx. PLN 860 million. These results are better than in 2015 (about PLN 572 million), but still much more modest than, e.g., in 2014 (about PLN 2.37 billion), not to mention the record-breaking 2011 (PLN 3.16 billion). The irregularity of the volumes of orders in particular years is visible, which is due to the cycle of financing the orders for new rolling stock from EU funds.

There are no reasons to be worried provided that the operators achieve their ambitious plans. The purchases that have been announced are to outdo the purchases made 3-4 years ago. Of particular importance are the plans of PKP Intercity, Koleje Mazowieckie, and Przewozy Regionalne.

In the case of the first entity, we witnessed the introduction of several changes to the assumptions of its rolling stock strategy over the past several years. As a result, new announcements were made in the media regarding the purchases to be made in the forthcoming years by the state long-distance operator. It is hard not to notice that obtaining new vehicles by PKP Intercity has turned into a political issue in recent years. The local government operators are (still) in the hands of the opposition parties, so the declared support for the Polish rolling stock industry will be implemented by the state operator – and in further perspective – by Przewozy Regionalne under supervision of the Industrial Development Agency. With the prevalent declarative economic nationalism of the current government one may expect that most orders will be implemented by domestic companies in the near future.

Value of contracts for the deliveries of new passenger rolling stock in 2010-2017 (in PLN million)





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In addition to the tenders which have already been announced (20 electric locos and 12 EMUs up to 160 km/h), PKP Intercity plans to implement rolling stock projects by 2023 the total value of which is approx. PLN 7 billion. Previous assumptions mentioned the expenditure of approx. PLN 2.5 billion. It seems that the ambitious announcements made by Przewozy Regionalne are still valid: a total of 250 EMUs are to be bought over the course of the next several years. Although, for the time being, mainly upgraded units are acquired, the company's management promises that new trains will also be bought. In total, by the end of 2018, 53 new and modernised vehicles are to be launched on tracks.

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PKP IC: rolling stock investment strategy

The long-distance rail carrier was established in 2001, following the formation of the PKP Group based on the former state enterprise Polish State Railways (PKP). Currently, the carrier runs trains in the following categories: Express InterCity Premium (EIC Premium), Express InterCity (EIC), InterCity (IC), Your Railway Lines (Twoje Linie Kolejowe, TLK) and EuroCity/EuroNight (EC, EN). The last category offers transport services in sleeping cars and couchettes (to Berlin, Prague, Ostrava, Vienna, Budapest).

The Express InterCity Premium (EIC Premium) category trains, or the Polish Pendolino, were launched in December 2014. The EMUs, manufactured by the French Alstom in Italy, connect Warsaw with Gdańsk, Katowice, Wrocław, Bielsko-Biała, Gliwice and Rzeszów with a speed up to 200 km/h.

Express InterCity (EIC) trains are connecting the largest urban centres of Poland, with a small number of stops and high commercial speed. In rendering those services the most modern fleet of PKP Intercity is employed, capable of reaching speeds of up to 160 km/h and air-conditioned in the 1st and 2nd class cars. The booking of seats is mandatory.

Trains under the name Twoje Linie Kolejowe (TLK [“your railway lines”], from 2004 operating as InterRegion, from 2005 – as Cheap Railway Lines, since 2011 – under the present name) use lower-class rolling stock. Initially, the booking of seats in TLK was mandatory, which was abolished in 2009 only to be restored in 2013.

InterCity (IC) category trains were launched in November 2014 on Przemyśl - Szczecin and Wrocław - Gdynia routes. The coaches bought and modernised with utilization of EU Funds are employed. In December 2015 PKP Intercity started to use also Dart and Flirt3 EMUs on the IC connections.

In 2014, the carrier planned to operate in 2020:

- 1030 coaches,
- 20 EMUs (Pendolino),
- 40 EMUs for 160 km/h,

- 115 locomotives for 125 km/h,
- 9 locomotives for 140 km/h,
- 49 locomotives for 160 km/h,
- 10 locomotives for 200 km/h,
- 20-35 shunting locomotives,
- 11 road-rail vehicles,
- 10 diesel mainline locomotives,
- 10 double-deck EMUs.

In October 2015, PKP Intercity has announced the launch of pre-procurement supplier engagement on modernisation project of 60 electric locomotives class EU07 and EP07. The order was also supposed to consist of option for the prototype development and certification for operation in Poland.

The modernisation (which was planned to take place in the years 2016-2020) was supposed to allow hauling express trains with speed of up to 160 km/h and lower the operation costs due to less expenses for maintenance, higher reliability level and less frequent repairs. Also the ergonomics and driver's work comfort was to be improved.

Along with modernisation of 400 passenger coaches, the project was expected to be PLN 1.4 billion worth.

PKP Intercity was also planning to invest further PLN 400 million in modernisation of 9 its maintenance halls. Modern and eco-friendly facilities were to be launched in Warsaw, Lublin, Kołobrzeg, Białystok, Szczecin, Kraków (2x), Poznań and Wrocław in the years 2016-2020.

In April 2016 the new management board of PKP Intercity launched pre-procurement supplier engagement on purchase project of up to 40 electric locomotives. The tender was expected in 2016.

The new rolling stock strategy of PKP Intercity was revealed in December 2017, the plans regarding units owned by PKP Intercity, include:

- purchase of 25 electric locomotives (2018-2020),
- purchase of 7 EMUs for 230 km/h (2018-2020),
- purchase of 2 push&pull trains (2018-2020),
- modernisation of 700 coaches (2018-2020),
- modernisation of 200 electric and diesel locomotives



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- (2018-2020),
- purchase of 185 coaches (2018-2020),
- purchase of further 31 EMUs for 230 km/h (2023-2030),
- purchase of further 27 electric locomotives (2023-2030),
- purchase of further 13 push&pull trains (2023-2030).

PKP Intercity is also planning to invest in modernisation of 16 its maintenance halls. The value of planned investments is ca PLN 7 billion.



Regional Operators: rolling stock acquisition plans

Before 2001, the state-owned Polskie Koleje Państwowe (PKP, Polish State Railways) provided passenger rail transport services. The liberalisation of the market commenced in Poland in 2001 with the establishment of the PKP Group. The Group comprised, among others, two companies: PKP Intercity – operating on a commercial basis – and PKP Przewozy Regionalne (PKP PR) – operating on the basis of contracts signed with local governments (provinces). Other entities were established as well to cope with agglomeration traffic: Szybka Kolej Miejska w Trójmieście (PKP SKM w Trójmieście, a rail operator in the metropolitan area of the Gulf of Gdańsk: Gdańsk, Gdynia and Sopot) and Warszawska Kolej Dojazdowa (WKD, owned by the local government, operated on the Warsaw - Grodzisk Mazowiecki route with a separate line).

In 2008, the ownership of PKP Przewozy Regionalne was put into the hands of local governments – and more specifically of the Marshal's Offices. The shares in the company were divided proportionally to the size of the provinces and number of passengers in every region. When the financial situation of the carrier became dramatic, some of the local governments decided to have their own passenger rail transport companies established: Koleje Mazowieckie (KM – responsible for regional and commuter traffic in Warsaw and Masovian region), Koleje Wielkopolskie (KW – regional and commuter traffic in Poznań and Wielkopolska region), Koleje Dolnośląskie (KD – regional and commuter traffic in Wrocław and Lower Silesia region), Koleje Śląskie (KŚ – regional traffic in Silesia) and Koleje Małopolskie (operated on the routes near Kraków in the Małopolskie Province). The regional government of the Kujawsko-Pomorskie Province went its own way, when in 2007 it decided to allow private consortium Arriva – PCC to operate on non-electrified local lines in the region (later the company was taken over by German state railways and renamed to Arriva RP). What is more, in 2005 the Mayor of Warsaw formed the Szybka Kolej Miejska Company (routes in the Warsaw agglomeration), while in Łódź – the Łódzka Kolej Aglomeracyjna Company (ŁKA - routes in the Łódź agglomeration) was established in 2014.

Przewozy Regionalne (PR) / PolRegio

The largest passenger rail operator in Poland which runs regular passenger trains (REGIO – domestic, cross-border to Germany and Czech Republic) and a few fast trains (interREGIO



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on Warszawa - Łódź route). It was first set up as PKP Przewozy Regionalne in 2001, a company from the PKP Group. Originally, it operated inter-province trains (with PKP Intercity). Most of the services are provided on request of regional Marshal's Offices based on public service contracts. In contrast, interREGIO on Warszawa - Łódź route is commercial, as an addition to the company's core business. Furthermore, international rail services are funded by the Ministry of Infrastructure under a long-term contract.

On 1 December 2008, the company, preparing to transfer its shares to regional governments, handed inter-province trains over to PKP Intercity (as well as some rolling stock and facilities). On 8 December, the name of the carrier was also changed to the one currently in use, discarding the abbreviation "PKP" (PKP – Polish State Railways).

On 22 December 2008, all shares in the company (previously held by PKP SA) went to the State Treasury. On the same day, under the law adopted by the Polish Parliament, the shares were transferred to all provincial governments. On 30 September 2015 Industrial Development Agency (ARP) took over the majority of the shares (50% + 1 share). The rest is still owned by the provincial governments. The current structure of the carrier comprises 14 units operating in all provinces of Poland with the exception of Mazovia and Silesia and the Rolling Stock Repair Unit in Kruszewiec.

In December 2016, the new consumer brand - Polregio was presented. The company also demonstrated its new logo, colours and rolling stock liveries.

The rolling stock policy of Przewozy Regionalne is primarily based on the use of own electric and diesel multiple units provided by regional Marshal's Offices. The carrier also used to operate electric locomotives leased from other companies (PKP Cargo, Czech Railways, Metchem, and PKP Intercity).

To a considerable extent the carrier's situation relies mainly on the policy implemented by the authorities in particular regions. The plans regarding rolling stock owned by Przewozy Regionalne, developed after ARP took over the majority of shares in the company, include:

- operation of mainly EMUs, due to liquidation of almost all interREGIO connections in 2015,
- modernisation of 36 3-car and 5-12 4-car EMUs (2018),
- purchase of 238 EMUs, 30 hybrid units, 11 electric locomotives, 9 diesel locomotives, 55 intersectional and 22 driving push&pull coaches (the years 2019-2030),
- no purchase of any new locomotives or coaches,
- sale of class EU07 locomotives owned by the company,
- lease of some of the class EP07 locomotives to private freightcarriers.

Szybka Kolej Miejska w Trójmieście (PKP SKM w Trójmieście)

The company operates trains on a dedicated urban railway system in Tricity (Gdańsk, Gdynia and Sopot). It was established in 2001, taking over the tasks, employees and other assets of the Department of Szybka Kolej Miejska w Trójmieście.

The company manages and runs passenger services on railway line no. 250 (Gdańsk Main Station - Rumia) and on the part of the PKP PLK's network. It is therefore both a railway carrier and an infrastructure manager. PKP SKM also operates on the non-electrified line of Pomorska Kolej Metropolitalna (Pomeranian Metropolitan Railway, PKM) connecting Gdańsk Lech Wałęsa Airport with Wrzeszcz, opened on 1st September 2015. Transport services are subsidised and performed under a contract with the Marshal's Office of the Pomorskie Province.

The entity is owned by PKP SA (47.8% of shares), the Ministry of Finance (22.6% of shares) and local governments of the Pomorskie Province, Gdańsk, Sopot, Gdynia, Pruszcz Gdański and Rumia.

In 2013-2014 PKP SKM implemented a project of upgrading 21 EMUs of class EN57 to the EN57AKM standard. It was supposed to be implemented by Tabor Szynowy Opole, but the company went bankrupt and was then acquired by the consortium of Pesa and ZNTK Mińsk Mazowiecki (Tabor Szynowy Opole successfully upgraded one unit to the EN57AL standard).

The modernisation covered:

- replaced fronts, modernisation of cabs, service compartments,

- modernisation of the mechanical part,
- modernisation of the electrical part – asynchronous traction motors, modern, integrated control systems, diagnostics,
- single-space interior,
- passenger information system – dynamic, acoustic and visual,
- closed-loop toilets,
- adaptation to the needs of the disabled and people with reduced mobility – handles, platforms, ramps,
- ergonomic seats,
- monitoring.

PKP SKM has planned to buy 10 new, six-car EMUs under the 2014-2020 budget of the European Union. The cost of the purchase was supposed at PLN 200-250 million. But in the 2016 the Pomeranian Regional government has revealed that intends to purchase 34 EMUs. 10 of them would be used on the lines of PKM (after its electrification). The new trains for PKP SKM would also be a natural consequence of the expansion of railway line no. 250 towards Wejherowo and the development of the depot in Gdynia Cisowe.

Koleje Mazowieckie (KM)

The Koleje Mazowieckie – KM Sp. z o.o. Company was established on 29 July 2004 by the Marshal's Office of the Mazowieckie Province (holder of 51% of shares) and then PKP Przewozy Regionalne (holder of 49% of shares). It was the first project of this kind in Poland. KM started regular operations on 1 January 2005. In January 2008, the Marshal's Office became the sole owner of the company.

Originally, the local government of the Mazowieckie Province leased the rolling stock from the then PKP Przewozy Regionalne (PKP PR). Having taken over Koleje Mazowieckie, the Marshal's Office purchased 184 EMUs from PKP PR. The purchased new rolling stock comprised: Stadler, Pesa and Newag's EMUs, double-deck coaches (manufactured by Bombardier), electric locomotives (delivered by Bombardier), the leased rolling stock comprised: DMUs and railbuses (manufactured by Pesa and Newag). In 2018 the company signed a PLN 2.2 billion worth framework agreement with Stadler for purchase of up to 71 EMUs.

In addition to the purchase of new rolling stock, the carrier modernised its older vehicles on a regular basis. In total, in 2005 - 2013, the company spent more than PLN 560 million on rolling stock repairs – maintenance P4 (revision repair) and P5 (major repair) levels.

KM's milestones regarding it's rolling stock:

- 2005 - lease of 184 EMUs of class EN57 from Przewozy Regionalne, 3 railbuses of class VT627 and VT628; 187 units in total; the EN57 upgraded to the EN57KM and EN57AKM standard in the coming years.
- 2005-2006 - 11 modernised railbuses of class VT627 and VT628 put into operation.
- 2007 - 2 second-hand EMUs of class EW60 purchased by the Masovian local government and modernised.
- 2008 - 10 Flirt EMUs of class ER75 delivered by Stadler put into operation.
- 2008 - 37 double-deck coaches manufactured by Bombardier (11 driving coaches, 26 middle coaches) put into operation.
- 2011 - commencement of operation of EU47 locos (Bombardier Traxx). Launch of the first push-pull trains.
- 2011 - delivery of 16 Elf EMUs of class EN76 manufactured by Pesa.
- 2011-2012, 2014 - purchase by the Masovian government of 6 railbuses of class SA135, delivered by Pesa (three contracts - in November 2011 - 2 units, in July 2012 - 2 units and in June 2014 - further 2 units).
- 2013-2014 - lease by the Masovian government of 2 DMUs of type 222M, delivered by Newag SA (two contracts: in June 2013 and June 2014).
- 2014 - purchase of 2 Gama locomotives and 22 double-deck coaches (2 class 316B and 20 class 416B) for push-pull trains (delivered by Pesa in December 2015).
- 2014 - purchase of 12 45WE Impuls EMUs manufactured by Newag. The last unit has been delivered in November 2015.
- 2018 - a framework agreement for delivery of up to 71 Flirt EMUs signed with Stadler. Basic order for 6 five-car units and possible further order for 55 five-car EMUs.

KM's investment projects planned for implementation in the EU perspective for 2014-2020:

- purchase of 6 new five-car EMUs; delivery in 2018-2019,
- purchase of 55 new five-car EMUs; delivery in 2018-2022

Total value of KM's investment projects for 2014-2024 exceeds PLN 2.7 billion. The projects include the aforementioned rolling stock undertakings and necessary investments in technical facilities, i.e. the modernisation of Sochaczew and Tłuszcz depots as well as the



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construction of a rolling stock maintenance facility in Radom. The company is also planning to withdraw from repairs and subsequently decommission 39 EMUs of class EN57 in 2018-2021.

Koleje Śląskie (KŚ)

The rail carrier owned by the Marshal's Office of the Śląskie Province which is responsible for regional services in Silesia. The reason behind establishing the company was that the local government wanted to withdraw from funding Przewozy Regionalne in the region.

The company was officially set up on 8 April 2010. It commenced its services on 9 December 2011, initially on the Katowice - Wisła Głębce railway line. On 9 December 2012, Koleje Śląskie took over the majority of regional services in the province. Over the next couple of days, as a result of workers' errors, lack of the necessary experience and some problems with rolling stock, some trains had to be cancelled and replaced with emergency bus services. Consequently, several people resigned from the posts and part of the services in Silesia was resumed by Przewozy Regionalne.

On 1 June 2012, the daily number of the trains was reduced by approx. 39% as part of the recovery plan implemented to reduce financial losses of the carrier.

Unlike Koleje Mazowieckie, which had been established with the resources of the Przewozy Regionalne local unit, Koleje Śląskie were formed basically from scratch. The haste with which the process was organised (caused by the conflict with Przewozy Regionalne in Silesia) brought about problems with ensuring an adequate number of railway vehicles. Therefore, the company tried to acquire everything that was available on the rolling stock market at that time. Consequently, Koleje Śląskie were operating very diverse units, not always fitting the situation on the regional transport market. After the implementation of the recovery plan and delivery of new EMUs, the situation has improved.



Szybka Kolej Miejska w Warszawie (SKM w Warszawie)

The Szybka Kolej Miejska w Warszawie (SKM) is an agglomeration operator, offering transport services between Warsaw and neighbouring localities. It is owned by the Capital City of Warsaw. It runs trains on four lines (S1: Pruszków - Otwock, S2: Warsaw Chopin Airport - Sulejówek Miłosna, S3: Warsaw Chopin Airport - Warsaw Central Station, S9/S30: Warsaw East - Legionowo); the trains it operates stop at 46 railway stations and train stops. SKM was established in 2004 and commenced its operations in October 2005.

The idea of the municipal authorities is to create a suburban railway system, connecting the capital city with its suburbs and neighbouring towns. The system will also comprise Metro Warszawskie, Koleje Mazowieckie (some services in and around Warsaw) and Warszawska Kolej Dojazdowa (WKD).

SKM operates only EMUs manufactured by Polish producers. The company intends to buy 8 five-car and 5 four-car EMUs for Piaseczno - Warszawa Gdańska - Legionowo/Wieliszew and Ożarów Mazowiecki - Warszawa Gdańska - Warszawa Rembertów routes.

SKM's rolling stock milestones:

- 2005 - initially SKM used the EN57 and EN71 units leased from PKP SKM in Tricity (later also from Przewozy Regionalne). In January 2005, the carrier signed a contract for the supply of 6 EMUs of class 14WE.
- 2005 - first vehicles of class 14WE were put into operation in September. The bogies and front couplers from scrapped EMUs of class EN57 were bought from PKP SKM in Tricity and used in production of these units.
- 2009 - the process of repainting EMUs of class 14WE so that they wear the colours of the Warsaw Transport Authority (ZTM, a unit responsible for public transport integration in Warsaw).
- 2010 - first EMU of class 19WE were put into service in April; Newag SA provided a total of four units.
- 2011 - first deliveries of 13 Elf EMUs of class 27WE manufactured by Pesa; the EN57 EMUs could be put out of service.
- 2012 - six Impuls EMUs of class 35WE manufactured by Newag delivered. In late 2012, the contract was extended with an order for 6 units.

- 2012-2017 - 2 out of 8 EMUs of class 14WE were sold to Koleje Śląskie in 2012; further 6 units were sold to Industrial Division in 2016 (4 of them were delivered to ID in 2017 and last 2 will be handed over in 2018).

Koleje Wielkopolskie (KW)

The Koleje Wielkopolskie Company (KW) is a regional rail carrier offering regular passenger services in the Wielkopolskie Province (although KW's trains reach also Mogilno in the Kujawsko-Pomorskie Province, Zbąszynek in the Lubuskie Province and Kutno in the Łódzkie Province).

KW, established by the Marshal's Office of the Wielkopolska Province in September 2009, commenced regular passenger services on 1 June 2011, having taken over some services from Przewozy Regionalne. The carrier does not have its own rolling stock. It uses railcars leased by the Marshal's Office, namely the upgraded EN57 and new EN76 Elfs by Pesa.

In Zbąszynek (Lubuskie Province), the company owns a rolling stock maintenance depot placed in an old building of a motive power depot (November 2012).

KW's rolling stock milestones:

- 2011 - KW's activity began with 22 railbuses, bought by the local government of Wielkopolskie Province in 2002-2008.
- 2011 - contract concluded between the Marshal's Office and PESA for the delivery of 22 Elf vehicles of class EN76 - 22WE .
- 2012 - KW began operating 12 units of class EN57 purchased from Pesa by the local government in 2010. The vehicles had been previously leased by Przewozy Regionalne.
- 2012 - in August, first Elf of class EN76 - 22WE was delivered to KW. The last vehicle was delivered in February 2014.
- 2011-2013 - at the time the new rolling stock was purchased, units of class EN57 were upgraded to the EN57AKW standard (in 2011, three units were modernised by Newag, in 2012 – another one and in 2013 – two).
- 2015 - contract for the lease of 4 two-car Link DMUs of class SA139 with Pesa. They had originally been manufactured for the German private carrier Netinera which cancelled the order.

Warszawska Kolej Dojazdowa (WKD)

The Warszawska Kolej Dojazdowa Company (WKD) is a rail carrier and infrastructure manager established in 1927 (the previous name was Elektryczna Kolej Dojazdowa “EKD”). Today it manages a separate urban rail system comprising standard-gauge line no. 47 Warszawa Śródmieście WKD - Podkowa Leśna Main Station - Grodzisk Mazowiecki Radońska (32.8 km) with a branch connecting Podkowa Leśna Main Station and Milanówek Gudów (line no. 48.3 km long). WKD operates EMUs only.

WKD connects suburban towns with the centre of Warsaw, its trains stop at 28 stations. It manages a 3,000 V DC electrified line based on the overhead system, which was the first standard-gauge electrified railway line in Poland. Until May 2016 the line was electrified at 600 V DC.

WKD has been providing its services under the current name since 1951 and since 2000 it has been operated as a company. Initially it was owned by PKP; however in 2007 it became the property of local governments: Marshal’s Office of the Mazowieckie Province (73% of shares), Pruszków town and commune (9%), Podkowa Leśna (4%), Milanówek commune (2.6%), Grodzisk Mazowiecki commune (4.9%), Brwinów town and commune (4.9%) and Michałowice commune (1.6%).

WKD’s rolling stock milestones:

- 1927-1972 - initially, as the EKD and later on as WKD – class EN80 power cars and trailer cars (20 units each) manufactured by English Electric.
- 1972 - first EMUs of class EN94 delivered by Pafawag were put into service, gradually replacing the EN80 units. In total, 40 EMUs were introduced. Some of them have been in use until May 2016.
- 2004 - the Marshal’s Office of the Mazowieckie Province bought an EMU of class EN95 for WKD, manufactured by Pesa (the company’s very first electric multiple unit). There were plans to make 9 units more, but they were not realised.
- 2012 - EMUs of class EN97 were put into service (bought in 2010, delivered by Pesa in 2011). WKD bought 14 of them with the support of the Swiss Fund.
- 2014 - on 26 August 2014, WKD signed a contract with Newag SA for the delivery of six new 39WE EMUs. The first 3 trains were delivered in June 2016.

Koleje Dolnośląskie (KD)

The Koleje Dolnośląskie Company (KD) is a regional rail carrier the beginnings of which date back to 2007 (regular operations started in December 2008). It is owned by the Marshal's Office of the Dolnośląskie Province. KD operates in the Dolnośląskie Province, with its services being ordered by the Marshal's Office (although KD's trains do go as far as Zielona Góra in the Lubuskie Province and Trutnov in the Czech Republic).

The carrier uses DMUs and EMUs owned mainly by the Marshal's Office of the Dolnośląskie Province.

KD's rolling stock milestones:

- 2008 - Koleje Dolnośląskie started their business with 21 railcars bought by the Marshal's Office in 2003-2011 (previously used by the Przewozy Regionalne Company).
- 2011 - contract for the purchase of five 31WE EMUs with Newag; deliveries began in 2013.
- 2013-2014 - Koleje Dolnośląskie is also using EMUs of class EN57 (two of them are owned by the Marshal's Office, one by KD and one by Przewozy Regionalne).
- 2014-2017 – contract with Newag for the delivery of 6 Impuls EMUs of class 36WE (2014) and for 11 Impuls EMUs of class 45WE (2017).
- 2015 - contract for the delivery of 4 two-car Link DMUs of class SA139 with Pesa. They had originally been manufactured for the German private carrier Netinera which cancelled the order.

Arriva RP

The Arriva RP Company is a regional passenger carrier which is part of the Deutsche Bahn Group. It operates regional services in the Kujawsko-Pomorskie Province (under a contract with the Marshal's Office of the Kujawsko-Pomorskie Province), though the company's trains go as far as the towns in the Pomorskie (Czersk, Chojnice) and Mazowieckie Province (Sierpc).

The company was set up in 2007, under the name of Arriva PCC, as a joint venture of the Polish private operator PCC Rail SA and the British public transport operator Arriva plc. In

2007, it won a tender for services provided on non-electrified railway lines in the Kujawsko-Pomorskie Province, while in 2009 – for several railway links in the Pomorskie Province and in 2010 – in the Warmińsko-Mazurskie Province. In 2009 and 2010, Deutsche Bahn acquired both PCC Rail SA and Arriva plc, and the carrier became part of the German Group. In June 2010, its name was changed to Arriva RP.

In December 2013, Arriva RP took over the services on some electrified railway lines in the Kujawsko-Pomorskie Province. In December 2015, Kujawsko-Pomorskie Province signed an agreement with Przewozy Regionalne for their services on part of the electrified lines in the region. Arriva RP was left with connections on non-electrified lines only.

Arriva RP operates its own rolling stock and some units leased by the Marshal's Office and DB Regio AG.

Łódzka Kolej Aglomeracyjna (ŁKA)

The Łódzka Kolej Aglomeracyjna Company (ŁKA) is a regional passenger carrier, owned by the Marshal's Office of the Łódzkie Province. The company was established in May 2010 and began commercial operation in mid-June 2014.

ŁKA operates regional services in the Łódzkie Province (under the contract with the Marshal's Office), connecting Łódź with neighbouring towns (Sieradz, Zgierz, Łowicz, Koluszki and Kutno). In March 2016 the company has started a weekend connection between Łódź and Warsaw.

The establishment of the carrier was one of the elements of a plan supporting a comprehensive use of railways in the Łódź region. The plan was assumed along with the modernisation of railway infrastructure and train stops as well as the construction of

park-and-ride facilities. ŁKA operates railway rolling stock owned by the Marshal's Office – 20 six-car Flirt3 EMUs manufactured by Stadler.



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There are plans to gradually expand the range of ŁKA's services in the region; thus second-hand rolling stock will have to be used. In the near future ŁKA is to operate 14 3-car EMUs more. It will be vehicles of Newag's Impuls 2 family.

The long-term plans of Łódź Province include the purchase of up to 50 new EMUs.

Koleje Małopolskie

Koleje Małopolskie is a regional passenger carrier owned by the Marshal's Office of the Małopolskie Province. The company was established in 2013 and began commercial operation on 14 December 2014.

Koleje Małopolskie operates services in the Małopolskie Province (under the contract with the Marshal's Office). The first launched connection operated between Kraków and Wieliczka. In September 2015, when the railway line has been renovated, the route was extended to Kraków Balice Airport, which is directly linked to John Paul II International Airport. In December 2015 Koleje Małopolskie launched connection operated on the route Kraków Główny - Miechów - Sędziszów, in December 2016 on the line Kraków - Tarnów - Nowy Sącz - Krynica-Zdrój, in October 2017 on the route Kraków – Tarnów – Gorlice Zagórzany – Jasło and in December 2017 on the line Kraków – Skawina.

Koleje Małopolskie operates railway rolling stock owned by the Marshal's Office (mainly new electric multiple units).



Expected orders for passenger rolling stock from regional railway carriers in the years to come

Ordering party	Vehicles	Number	Year/UE perspective
Koleje Mazowieckie	Purchase of 5-car EMUs	6	2018-2019
Koleje Mazowieckie	Purchase of 5-car EMUs	55	2018-2022
SKM w Trójmieście	Purchase of 7-car EMUs	10	2021-2023
Koleje Dolnośląskie	Purchase of 4- (5) and 6-car (6) EMUs	11	2019-2021
Koleje Dolnośląskie	Purchase of used 2-car DMUs	2	2018
Łódzkie Province	Purchase of EMUs	Max 50	2021-2030
Pomorskie Province	Purchase of new EMUs	4	2018-2020
Lubuskie Province	Purchase of new 3-car DMUs	2	2018-2020
Wielkopolskie Province	Purchase of new 5-car EMUs	5	2018-2020
Lubelskie Province	Purchase of new EMUs	11	2018-2019



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Małopolskie Province	Purchase of new EMUs	Up to 60	EU financial perspective 2014-2020, funded by the OPIE
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