



PKP POLSKIE LINIE KOLEJOWE S.A.

Zarządca narodowej sieci linii kolejowych

Annual report for 2019



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Foreword by the President of the Management Board

Ireneusz Merchel
President of the Management Board
PKP Polskie Linie Kolejowe S.A.



To whom it may concern,

another year is behind us, in which thousands of trains operated daily on the railway network managed by PKP Polskie Linie Kolejowe S.A., ensuring safe travelling and efficient transport of cargo. I would like to present to you the Annual Report of PKP Polskie Linie Kolejowe S.A., which is a document containing information on all areas of activity – from maintenance of railway lines, through timetable, investment activities, to environmental protection, development and employee matters. I believe that the document will be important both for our partners in the railway market and for all those interested in the increasingly intensive development of rail transport in Poland.

The basic task of the national railway network manager is to prepare and implement the timetable.

In 2019, this meant cooperation with 104 train operators, including 17 passenger train operators. The organisation of train traffic required cooperation in order to prepare the best possible offer, which was to translate into satisfactory journeys by agglomeration, regional and long-distance trains. It was also important to ensure increasingly better and more competitive freight transport.

A significant and ambitious challenge is still the implementation of the National Railway Programme worth PLN 75.7 billion (as at 31 December 2019). In 2019, PKP Polskie Linie Kolejowe S.A. signed contracts worth approximately PLN 15.1 billion net. Nearly 2000 km of tracks were modernised, more than 1200 crossings were built, 700 level crossings were modernised and more than 300 platforms were built on the railway network.

There are particular effects on the society and the economy behind these figures. The modernisation of the Legnica-Rudna Gwizdanów railway line allowed passenger trains to return to the Copper Belt. The reconstructed stops and tracks between Warsaw and Grodzisk Mazowiecki provided more efficient communication in the Warsaw agglomeration. Train passengers travel more conveniently on the Lublin – Stalowa Wola and Opole – Nysa routes, among others. The accessibility of stations and stops is consistently increasing as we want the railway to be accessible to families with children as well as to elderly people and those with reduced mobility.

Investments from the National Railway Programme shall also take into account the needs of rail freight operators. We are preparing routes from Silesia to the Baltic Sea and from east to west for better transport. We continue to modernise the international Rail Baltica route and provide better rail access to ports. We make use of EU and budgetary funds responsibly for the balanced development of the railways and efficient connections on Europe's rail routes.

We are not only focusing on investments in the current European Union's financial perspective 2014-2020, but we will be ready to work on the next one. In preparation for the New Perspective, in 2019 the Company decided to start developing pre-project documentation for projects with a total value of almost PLN 100 billion. This will enable work to continue, together with contractors and manufacturers, which will increase the capacity of the railways.

Safety is invariably a priority in the Company's operations. We are increasing its level very intensively by, among others, introducing the GSM-R system, replacing and installing new control command and signalling equipment or building collision-free level crossings. With a great deal of commitment from our employees, we run the social campaign "Safe rail-road level crossing", in which we reach out to all social, age and professional groups, through all available means of communication, with an appeal for appropriate behaviour on railway premises.

Both activities in the field of construction and implementation of the timetable, as well as in the area of maintenance and investment are part of creating a modern railway system. I am convinced that the Report, which covers all aspects of the activities of the national rail infrastructure manager, will be an interesting reading for you.

Ireneusz Merchel
President of the Management Board
PKP Polskie Linie Kolejowe S.A.

Supervisory Board

- 1. Mariusz Andrzejewski**
Chairman of the Supervisory Board
- 2. Artur Kawaler**
Secretary of the Supervisory Board
- 3. Magdalena Błaszczyk**
Member of the Supervisory Board
- 4. Stanisław Ryszard Kaczoruk**
Member of the Supervisory Board
- 5. Jakub Kapturzak**
Member of the Supervisory Board
- 6. Marcin Piwowarski**
Member of the Supervisory Board
- 7. Jan Piotr Piechel**
Member of the Supervisory Board
- 8. Wiesław Adam Pełka**
Member of the Supervisory Board

Management Board

- 1. Ireneusz Merchel**
President of the Management Board
- 2. Marek Olkiewicz**
Vice President of the Management Board –
Director for Operational Affairs
- 3. Arnold Bresch**
Member of the Management Board –
Director for Investment Implementation
- 4. Piotr Majerczak**
Member of the Management Board –
Director for Infrastructure Maintenance
- 5. Radosław Celiński**
Member of the Management Board –
Director for Financial and Economic Affairs
- 6. Robert Sobczak**
Member of the Management Board –
Director for Development Affairs
- 7. Witold Marek Słowik**
Member of the Management Board –
Director for Operation Affairs

Financial result



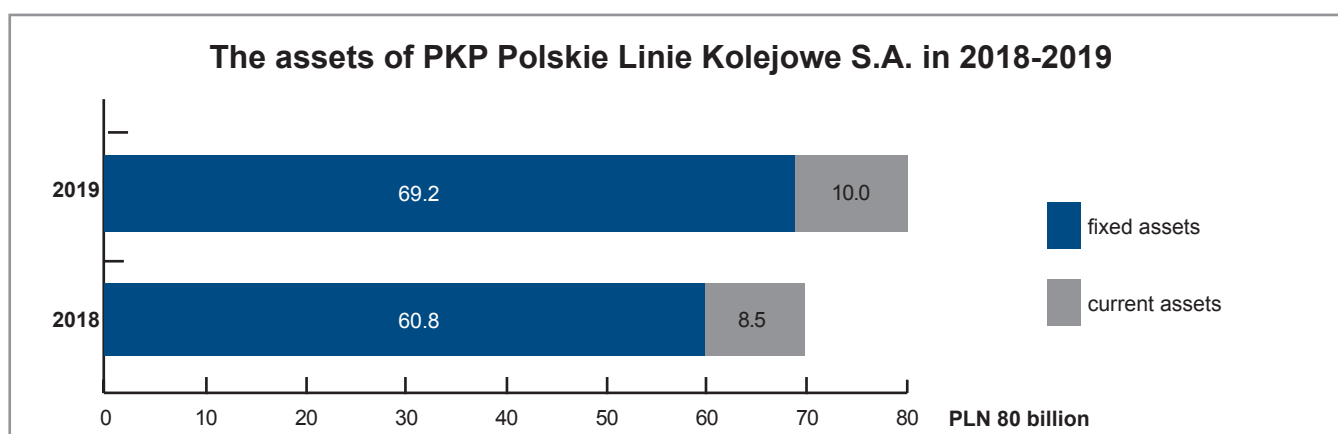
The Company's economic and financial standing was assessed based on financial reports representing the status as of 31 December 2019.

Company assets

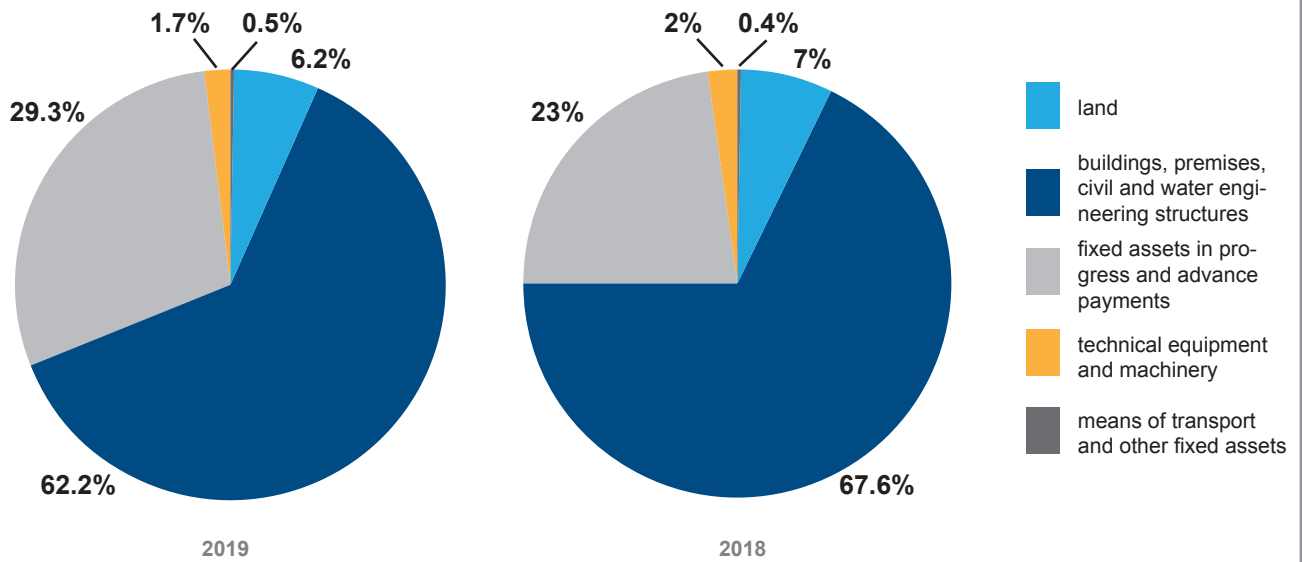
The book value of the assets owned by PKP Polskie Linie Kolejowe S.A. as of 31 December 2019 amounted to PLN 79,165.3 million and was 14.2% higher than in 2018.

The asset structure the Company typical for railway infrastructure managers and mostly comprises buildings, premises and civil and water engineering structures. In 2019, the Company's fixed assets comprised 87.4% of its total

assets. Over the financial year, fixed assets grew by 13.8% due infrastructure modernisation works, i.e. investments that have been completed and commissioned on railway lines.



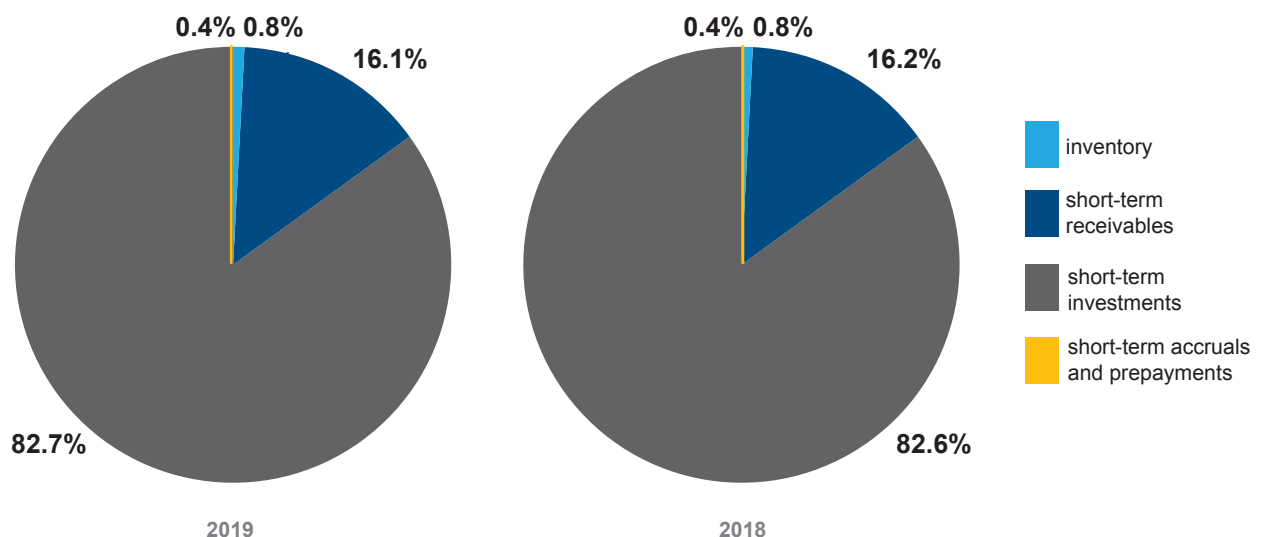
Structure of intangible fixed assets in 2018-2019



The current assets of PKP Polskie Linie Kolejowe S.A. in 2019 amounted to over 12.6% of all assets. Their balance value grew by 17.3% when compared to the year 2018. This growth has been primarily the result of an increase in funds and other monetary assets, which consist, among others, of funds obtained from the Railway Fund for current expenses related to the tasks of the infrastructure manager, refunds

of funds involved in investment projects from: Regional Operational Programmes (ROPs), Operational Programme Infrastructure and Environment (OPI&E), "Connecting Europe" Facility (CEF), the state budget, the Cohesion Fund, the Eastern Poland Operational Programme (OP EP), loans from the European Investment Bank (EIB) and the Company's own resources.

Structure of current assets in 2018-2019



In 2019, PKP Polskie Linie Kolejowe S.A. held shares reported as long-term investments in the following subsidiaries:

1. Przedsiębiorstwo Napraw i Utrzymania Infrastruktury Kolejowej w Krakowie Sp. z o.o. (100% of shares in share capital);
2. Dolnośląskie Przedsiębiorstwo Napraw Infrastruktury Komunikacyjnej DOLKOM Sp. z o.o. we Wrocławiu (100% of shares in share capital);
3. Zakład Robót Komunikacyjnych – DOM w Poznaniu Sp. z o.o. (100% of shares in share capital);
4. Pomorskie Przedsiębiorstwo Mechaniczno-Torowe Sp. z o.o. with its registered office in Gdańsk (100% of shares in share capital).

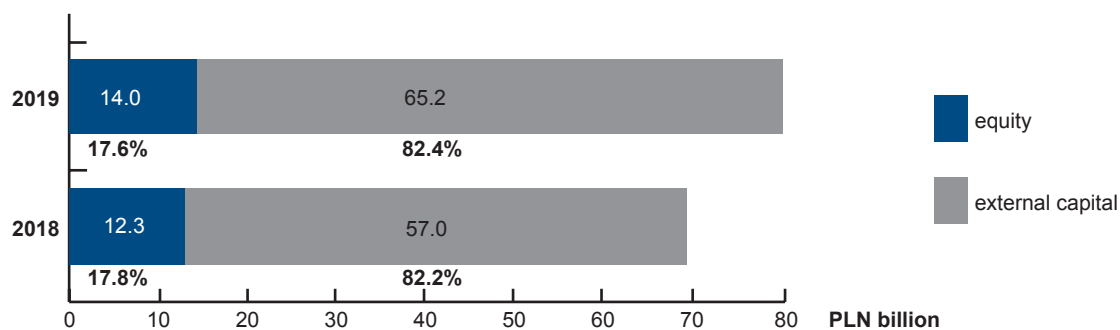
The balance value of the assets in question as of 31 December 2019 was PLN 209.1 million.

The maintenance and repair companies are the necessary potential of PKP Polskie Linie Kolejowe S.A that is used to:

1. maintain the required technical parameters of tracks;
2. perform modernisation and replacement investments on railway stations and railway routes;
3. respond rapidly to the need to carry out construction work in emergency situations.

Source of assets financing

The source of financing assets of PKP Polskie Linie Kolejowe S.A. in 2018-2019



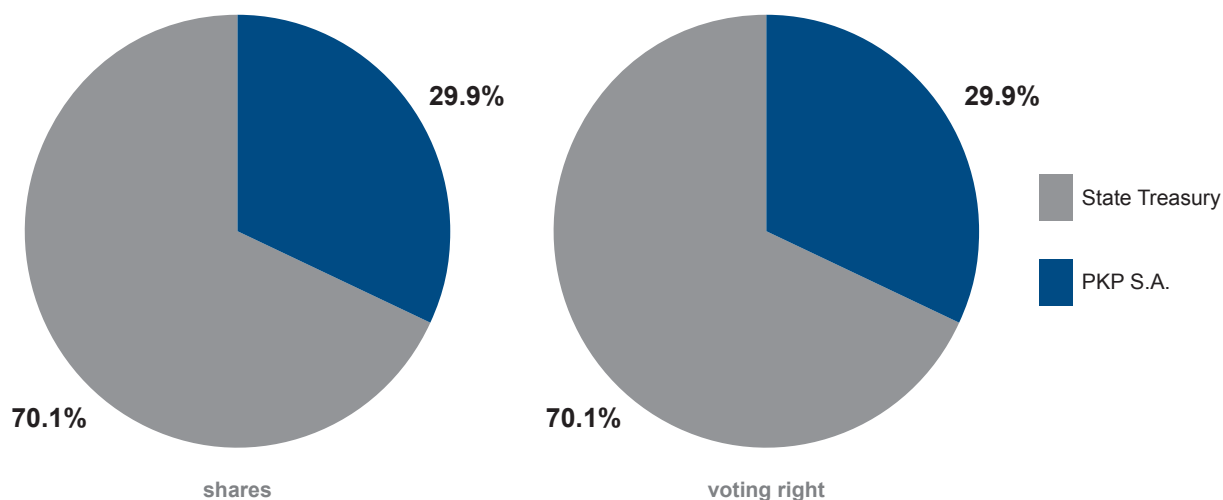
Equity

In 2019, the Company's equity made up 17.6% of its assets and decreased by 0.2 percentage point (p.p.) compared to 2018.

In 2019, the share capital was increased to PLN 20,424.94 million, as a result of funds received in the amount of PLN

1,800.0 million. The recapitalisation funds will be used to implement projects under the CEF financial instrument in 2019-2023.

Shareholder structure of PKP Polskie Linie Kolejowe S.A. as of 31 December 2019



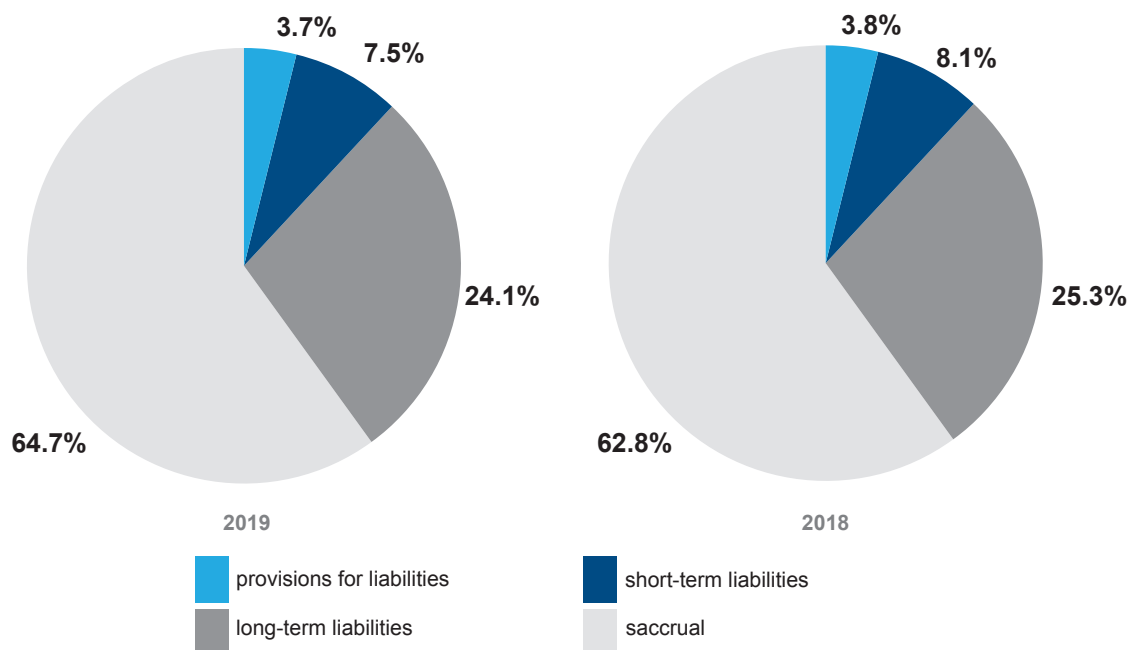
External capital

In 2019, external capital was the main source of financing assets of PKP Polskie Linie Kolejowe S.A. just like in previous years. As of 31 December 2019, they amounted to PLN 65,204.7 million, covering the Company's assets resources in 82.4%.

The share of external capital in financing the Company's assets increased in 2019 (when compared to 2018) by 0.2

percentage point (p.p.) as a result of an increase in long-term prepayments and accruals for the modernisation of railway infrastructure obtained from budget subsidies, the Railway Fund, the European Union and other public sources.

Structure of external capital in 2018-2019

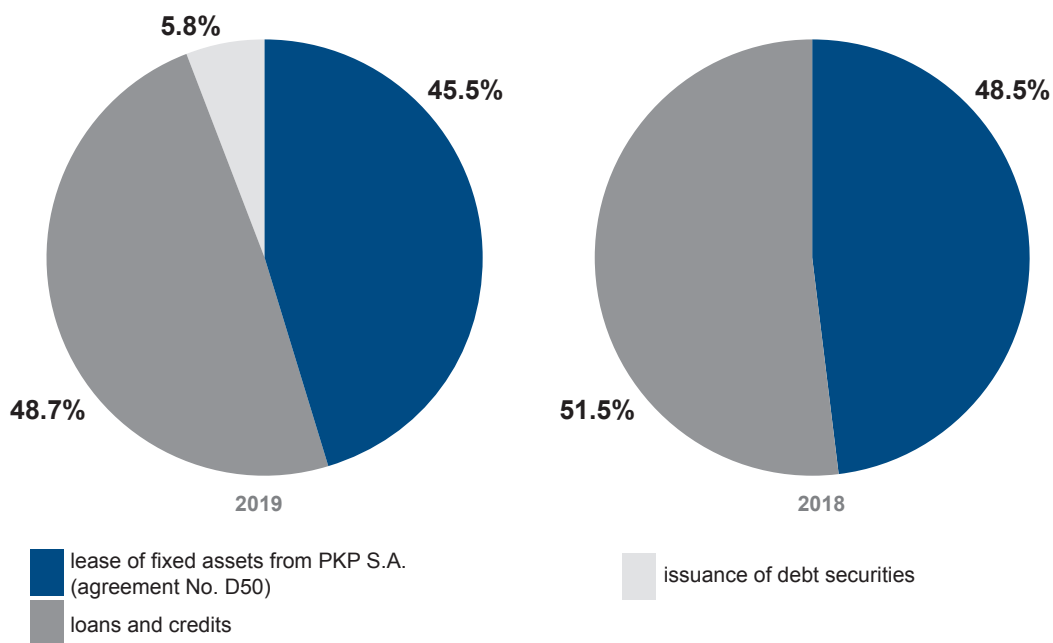


As at 31 December 2019, long-term liabilities amounted to PLN 15,696.6 million, of which 24.1% was held in third-party capital. The highest share in long-term liabilities (48.7%) were loans received from the EBI to co-finance and pre-finance the modernisation of railway lines, while 45.5% of these liabilities were liabilities arising from the agreement concluded with PKP S.A. in 2001 for handing over the rail-

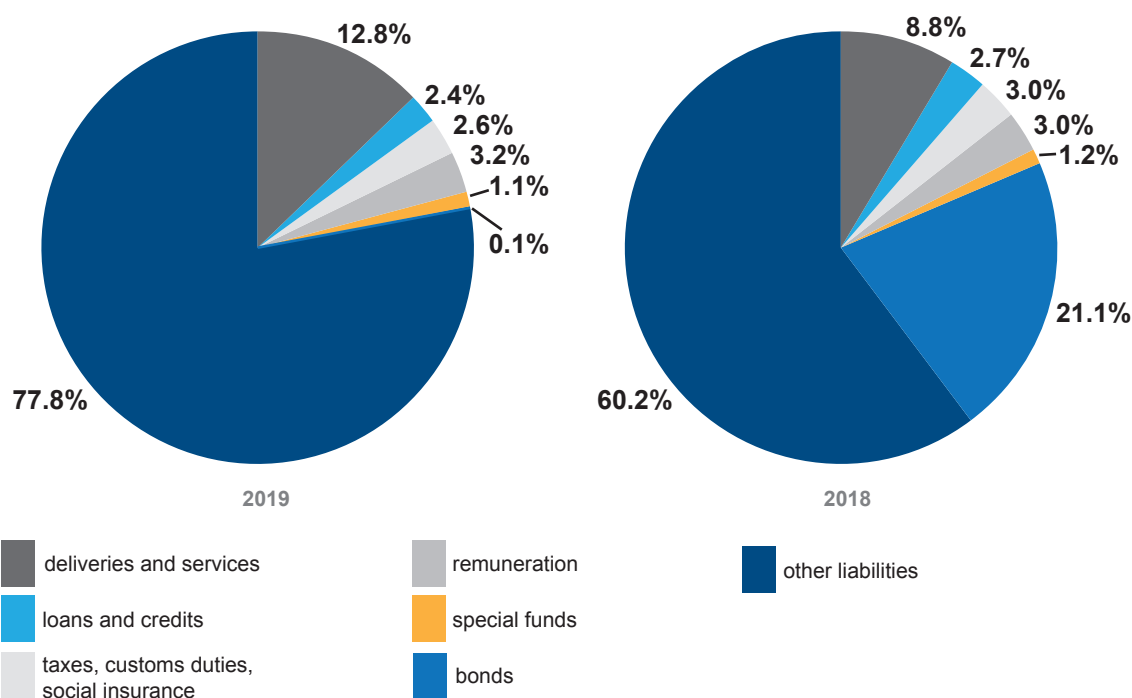
way lines along with other immovable property required to manage these railway lines for paid use (agreement No. D50-KN-1L/01).

In addition, in 2019, there were liabilities on account of issue of debt securities in the amount of PLN 913.8 million as a result of postponing the maturity date of bonds from 2019 to 2023.

Structure of long-term liabilities in 2018-2019



Structure of short-term liabilities in 2018-2019



Short-term liabilities as at the end of 2019 amounted to PLN 4,887.5 million and were higher than in 2018 by 6.3%. The recorded increase in short-term liabilities resulted mainly from the payment of invoices for investment works

related to the modernisation of railway infrastructure, which are to be covered mainly by EU and state budget funds and from EIB loan instalments disbursed.

Economic-financial results

Financial results of the economic activity of PKP Polskie Linie Kolejowe S.A. (in PLN million)

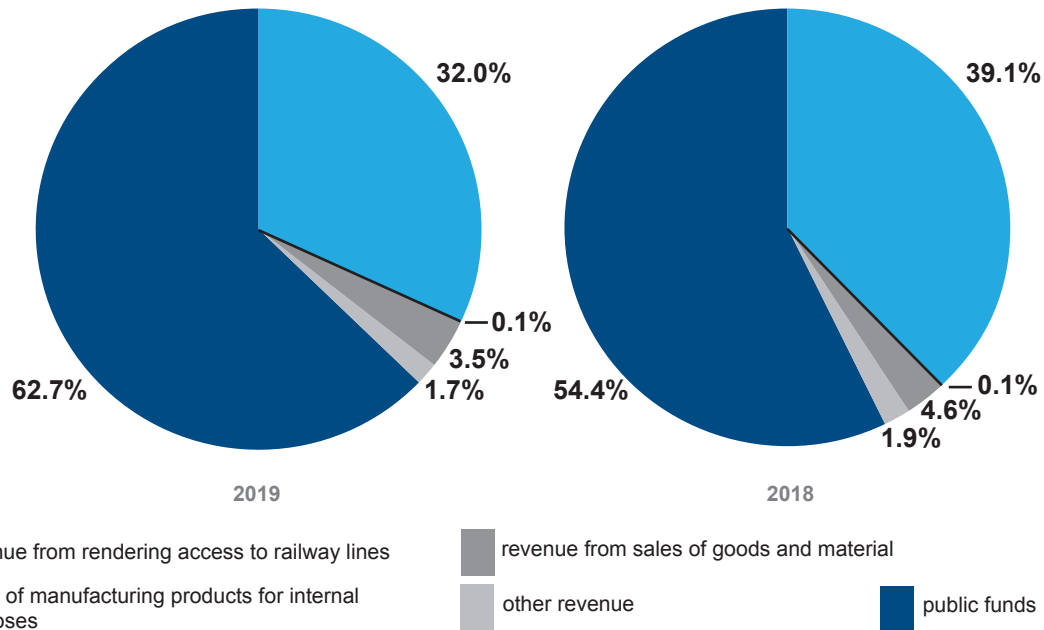
No.	Item	2019	2018	Change	
				Value (PLN million)	%
1.	Revenues from sales and equivalent	6,351.1	5,882.2	468.9	8.0
2.	Operating costs	7,510.3	6,551.1	959.2	14.6
3.	Result on sales (1-2)	-1,159.2	-668.9	-490.3	73.3
4.	Other operating revenue	1,435.4	1,416.8	18.6	1.3
5.	Other operating costs	534.9	664.6	-129.7	-19.5
6.	Result on other operating activity (4-5)	900.5	752.2	148.3	19.7
7.	Result on operating activity (3+6)	-258.7	83.3	-342.0	-410.6
8.	Result on operating activity excluding depreciation and amortisation (EBITA)	1,605.7	1,819.7	-214.0	-11.8
9.	Financial revenue	130.0	71.7	58.3	81.3
10.	Financial costs	41.6	198.9	-157.3	-79.1
11.	Result on financial operations (9-10)	88.4	-127.2	215.6	-169.5
12.	Gross profit (7+11)	-170.3	-43.9	-126.4	287.9
13.	Income tax	6.4	62.5	-56.1	-89.8
14.	Net result (12-13)	-176.7	-106.4	-70.3	66.1
15.	Net result excluding depreciation and amortisation	1,687.7	1,630.0	57.7	3.5

* the above data in the profit and loss account for 2018 were restated due to a change in the presentation of the costs of maintenance of idle capacity and therefore differ from the data disclosed in the Company's Annual Report for 2018.

In 2019, PKP Polskie Linie Kolejowe S.A. achieved a financial result of PLN -176.7 million, which was PLN 70.3 million lower compared to 2018. The result was reduced mainly due to the generation of a loss on core business (drop by PLN 490.3 million relative to 2018), resulting from higher growth of operating expenses than sales revenue.

This was mainly due to an increase in the cost of external services and the cost of salaries and related expenses, while revenue from making railway lines available to freight and passenger operators decreased, as well as a lower level of revenue from the sale of materials.

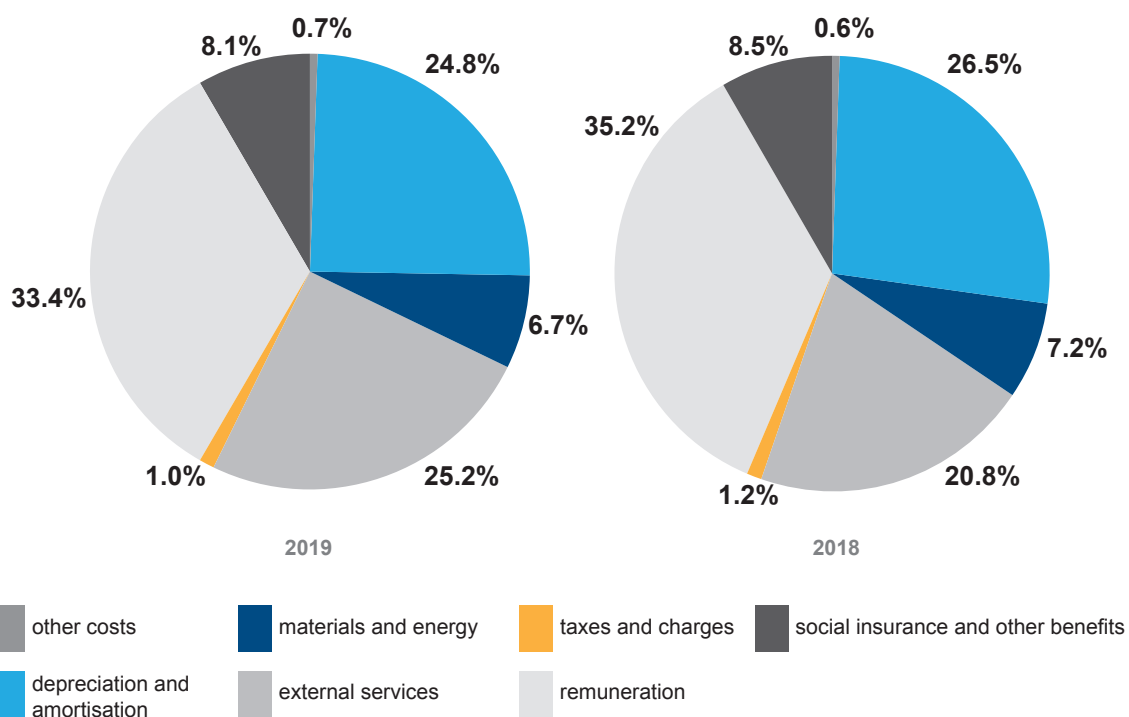
Sales revenue and equivalent in 2018-2019



Revenue from rendering access to railway lines in 2019 amounted to PLN 2,033.7 million and was lower by PLN 267.1 million compared to 2018 – this was primarily the result of a drop in revenue from freight operators as a result of a 6.2% decrease in operational work, caused by a decrease in demand for the transport of bulk goods. The transport of raw materials and aggregates as well as building materials,

among others, decreased. The lower revenue from the sale of other services in 2019 compared to 2018 is a result of a reduction in demand for the rental of track, investment and maintenance equipment resulting from the expansion of the machinery stock of the investment contractors, which reduces the demand for the Company's machinery.

Cost structure by type in 2018-2019



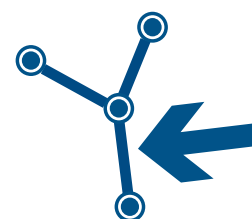
In 2019, PKP Polskie Linie Kolejowe S.A. incurred operating costs higher by 14.6% compared to 2018.

The increase in operating costs concerned, among others, the following:

1. costs of external services – mainly due to the higher level of industry costs resulting from the implementation of the tasks included in the Multiannual Programme entitled “Assistance in financing the costs of railway infrastructure management, including its maintenance and repair until 2023”;
2. labour costs – as a result of the wage increase and the increase in the minimum wage;
3. depreciation and amortisation costs – primarily as a result of the settlement of fixed asset expenditure.

In 2019, PKP Polskie Linie Kolejowe S.A. recorded an improvement in financial results in the area of other operating activities as well as financial activities. A higher financial result on other operating activities was obtained as a result of clearing EU and national funds allocated to the modernisation of railway infrastructure. The generation of profit on financial activities was facilitated by positive exchange rate differences resulting from an increase in the exchange rate of the Polish zloty against the euro, i.e. the currency in which PKP Polskie Linie Kolejowe S.A. has EIB loans, as well as incurring lower interest costs on loans and bonds resulting from lower market interest rates than assumed in the plan.

Train path sales



Rendering access to railway infrastructure

PKP Polskie Linie Kolejowe S.A. is the manager of the national railway infrastructure to which it renders access on equal terms. In 2019, access was provided in accordance with the principles set out in the Act on Rail Transport and the Regulation of the Minister competent for infrastructure of 7 April 2017 on access to railway infrastructure. The amended Act on Rail Transport, which came into force on 30 December 2016, significantly influenced the conditions of access to railway infrastructure. The Act expanded the group of entities entitled to order throughput by introducing the notion of “applicant”, which may be, as in the past, a railway operator, but also an international economic interest grouping including rail carriers or another entity interested in obtaining throughput, in particular an organiser of public rail transport, forwarder, freight forwarder or a combined transport operator. The use of railway infrastructure continues to be available only to railway operators. An applicant who is not an operator must indicate an operator who will carry out the carriage. As a consequence, the manager rendering access to the infrastructure shall enter into a throughput allocation agreement with the applicant and a throughput utilisation agreement with the operator.

In 2019, on the basis of train timetable provided to railway applicants, a total of 2,571,494 train carriages were performed, including on the basis of:

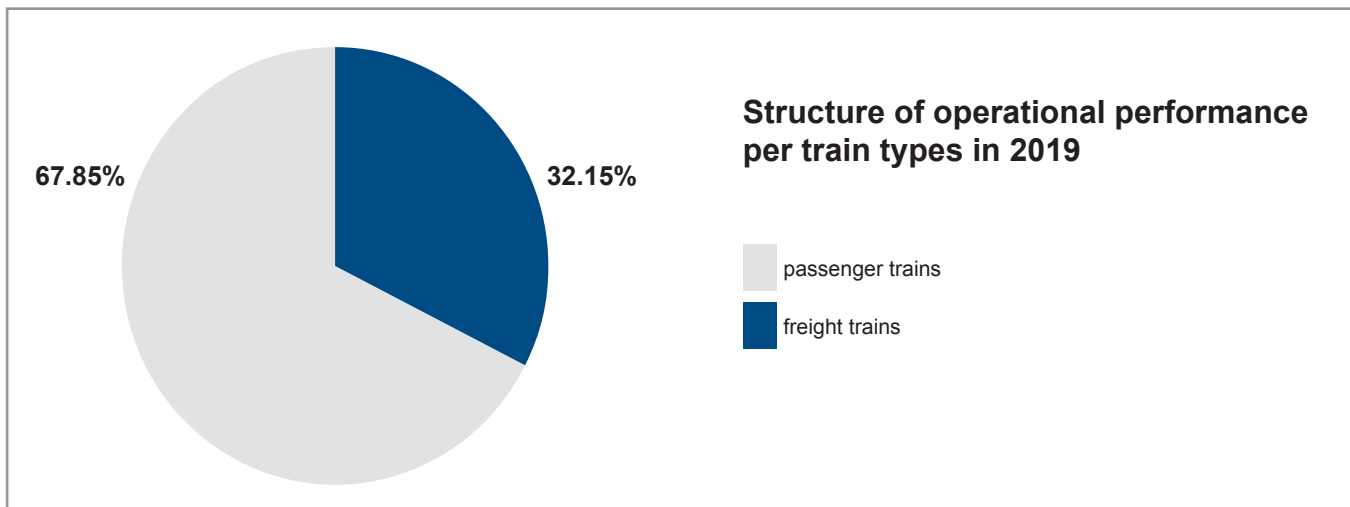
1. The Annual Timetable prepared on the basis of applications made by applicants. It was updated during its validity period on pre-arranged dates – 1,773,213 train rides;

2. The Individual Timetable developed by PKP Polskie Linie Kolejowe S.A. when there is some throughput available, upon request made by individual applicant for train routes allocation – 798,281 train rides.

In 2019, the Company made its railway lines available to 104 operators, including 17 lines for passenger services (11 lines for regular passenger services), 83 lines for freight services and 4 for passenger and freight services. 12 new clients launched their business activity on the network managed by PKP Polskie Linie Kolejowe S.A.

The basic reference value in terms of measuring access to railway lines is operational performance expressed in train-kilometres [train-km]. In 2019, 246.39 million train-km were achieved, including: 167.17 million train-km in passenger services and 79.22 million train-km in freight services.

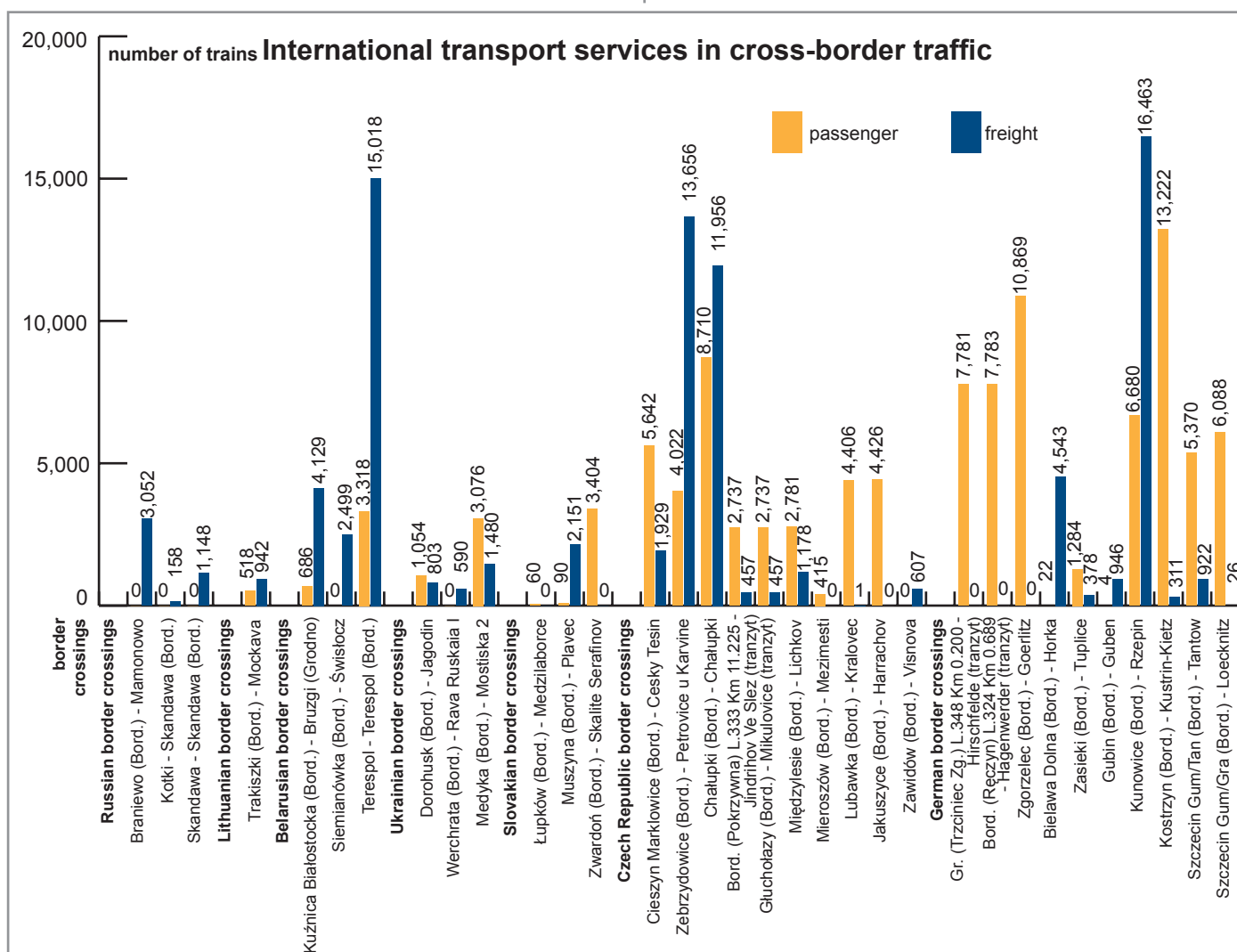
In 2019, PKP Polskie Linie Kolejowe S.A. noted a 0.12% decrease in total operating performance as compared to 2018 (there was an increase of 3.04% in the passenger service segment, while in the freight service segment – a decrease by 6.18%).



Data concerning completed international carriages

International transport services in cross-border traffic in 2019 were performed by 65 operators, who in most cases used the following border crossings:

- for passenger traffic: Kostrzyn (Poland – Germany), Zgorzelec (Poland – Germany), Chałupki (Poland – Czech Republic); Cieszyn Marklowice (Poland – Czech Republic) and transit carriages: Trzciniec Zgorzelecki – Hirschfelde, Ręczyn – Hagenwerder;



- for freight traffic: Kunowice (Poland – Germany), Terespol (Poland – Belarus), Zebrzydowice (Poland – Czech Republic) and Chałupki (Poland – Czech Republic).

In 2019, 192,985 rides of international trains were organised, of which 107,185 for passenger traffic and 85,800 for freight traffic. Rides across Polish-German border accounted for 43% (82,692) of international rides, the Polish-Czech border – 34% (66,117), Polish-Belarusian border – 13% (25,650), Polish-Ukrainian border – 4% (7,003), Polish-Slovak border – 3% (5,705), Polish-Russian border – 2% (4,358) and Polish-Lithuanian border – 1% (1,460). In 2019, within 24 hours, PKP Polskie Linie Kolejowe S.A. performed on average 529 rides of international trains as part of Individual Timetable and Annual Timetable.

In order to facilitate the use of international train routes by railway undertakings, the One Stop Shop (OSS) unit of PKP Polskie Linie Kolejowe S.A., which is a part of the international OSS network of the Association of European Railway Infrastructure Managers RailNetEurope (RNE), provides comprehensive information on the conditions that must be met in order for RNE members to gain access to the infra-

structure and the products and services they offer. A client who is interested in an international train ride may turn to one of the OSS, which will then take over the process of allocation along the entire train route.

PKP Polskie Linie Kolejowe S.A. cooperates with neighbouring railway infrastructure managers in terms of annual and individual timetables in both passenger and freight traffic. Cooperation with RŽD (Russia), LG (Lithuania), BC (Belarus) and UZ (Ukraine) railways is based on bilateral agreements, while with DB Netz (Germany), SŽDC (the Czech Republic) and ŽSR (Slovakia) – on bilateral agreements as well as regulations of international organisations.

Train rides under Individual Timetables are arranged in a separate way:

- between PKP Polski Linie Kolejowe S.A. and DB Netz, SŽDC and ŽSR i.e. they are based on a common procedure (24h/day, through the Railway Traffic Management Centre branches being coordinated in Warsaw);
- for the remaining neighbouring infrastructure managers – by the OSS unit at the Railway Traffic Management Centre in Warsaw.

Operating systems

The primary system used at the Railway Traffic Management Centre is the Operating Performance Registration System (SEPE). It cooperates with approx. 30 systems used by the Company, systems owned by railway operators and neighbouring infrastructure managers.

The information included in the SEPE system come from the following sources:

- The Dispatcher Support System (SWDR), in which traffic controllers record the time that a train passes through a station on average up to 3 minutes after the train has passed. After the completion of work on the implementation of a new system called Electronic Traffic Log (EDR), it takes over all functionalities currently supported by SWDR;
- GPS transmitters installed on traction vehicles of railway operators;
- data from Local Control Command and Signalling Centres (LCS, the so-called “track signal”);
- data registered in SEPE by line dispatchers based on information from train dispatchers.

Apart from data on the current location of trains, SEPE also registers data on reasons for delays along with an indication of the entity responsible for the delay, events occurring on the network managed by the Company, planned and emergency track closures.

Information on the current location of trains, delays and reasons for such delays as well as events occurring on the railway network are presented in the Crisis Management Centre Map (CZK Map) application constituting the primary tool in crisis situations. The CZK Map application is also used in the operation process on an ongoing basis.

At the request of railway undertakings, a dedicated version of the application CZK-P Map was developed, which enables presenting information about the current location of a train of a given undertaking, which uses the application, and other railway undertakings, which agreed to have access to data about their trains. The described functionality of the CZK-P Map application is used by passenger carriers, and since 2018 also freight carriers.

The application used to monitor international train traffic is the Train Information System (TIS) which collects and presents data on trains running on the railway networks in most EU Member States. Applications described above (apart from TIS) have been developed by PKP Polskie Linie Kolejowe S.A. using own means, which significantly facilitated the software development and implementation process.

Implementation work is being carried out for project entitled: “Development of a design, performance and implementation of an IT solution titled SEPE II – Operating Performance Registration System v. II” has been continued; the new system is planned to replace the SEPE system currently in use. The implementation of the project is planned for 2020.

Infrastructure



Rail roads

In 2019, the length of railway lines in operation increased by more than 144 km compared to 2018. The modification was a result of the need to adapt infrastructure to the changing transport needs.

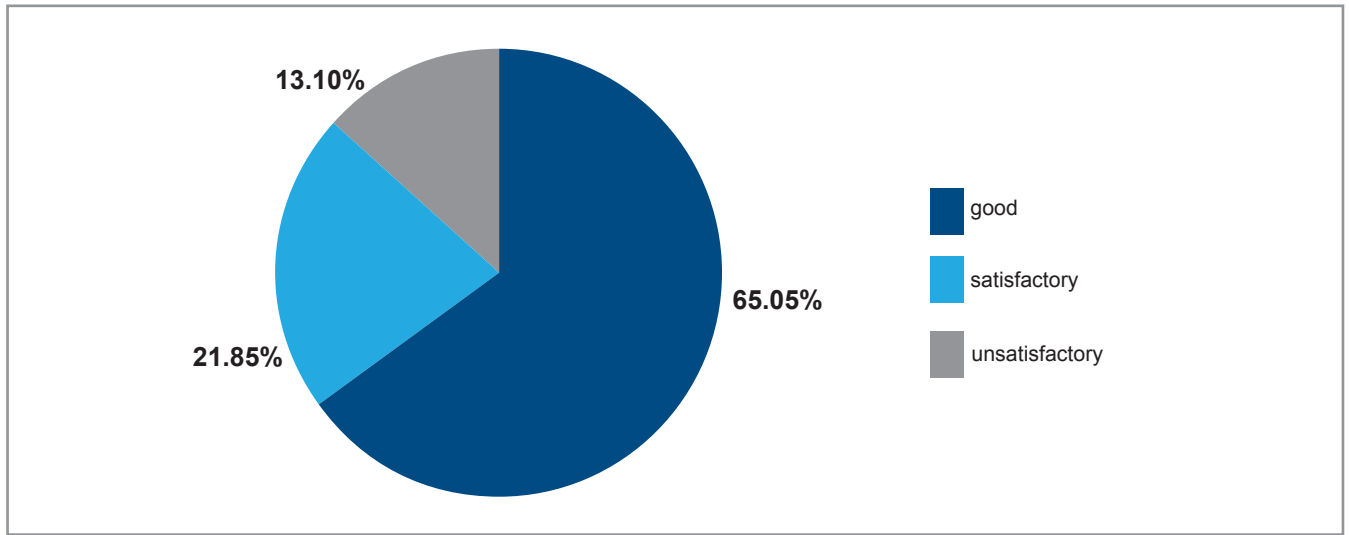
List of railway infrastructure in use, managed by PKP Polskie Linie Kolejowe S.A. (as at 31 December 2019):

- 18,680 km of railway lines (35,951 km of tracks), including:
 - 27,244 km of route tracks and main principal tracks at stations;
 - 8,707 km of station tracks.
- 38,663 turnouts, including:
 - 17,763 turnouts in route tracks and main principal tracks;
 - 20,900 turnouts in station tracks.
- 14,013 crossings in the rail level, including operated lines: in total 12,156, including level crossings of the following categories:
 - A – 2,281;
 - B – 1,336;
 - C – 1,440;
 - D – 5,977;
 - F – 649;
 - pedestrian crossings of cat. E – 473.
- 25,003 engineering structures; including 6,427 bridges and viaducts;
- 5,427 buildings;
- 15,006 structures.

Road infrastructure technical condition

As a result of the maintenance and repair work as well as investment tasks performed in 2019, the length of railway line tracks graded as good in terms of technical condition (as at 31 December 2019) represented 65.05% of the total track

length, which represents an increase of 4.61% compared to 31 December 2018. 60.44% of the tracks were rated good.

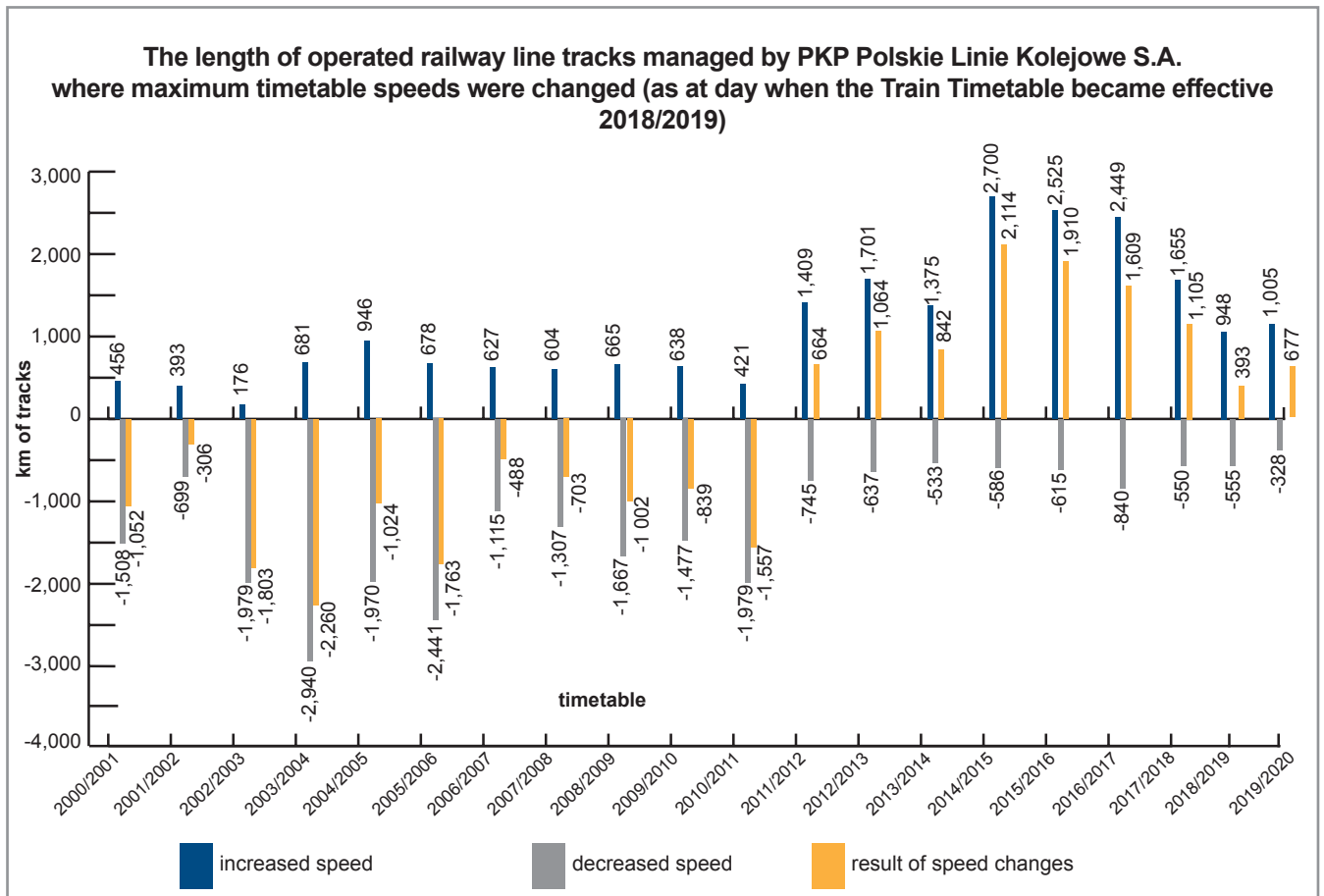


The diagram above was developed based on the following criteria:

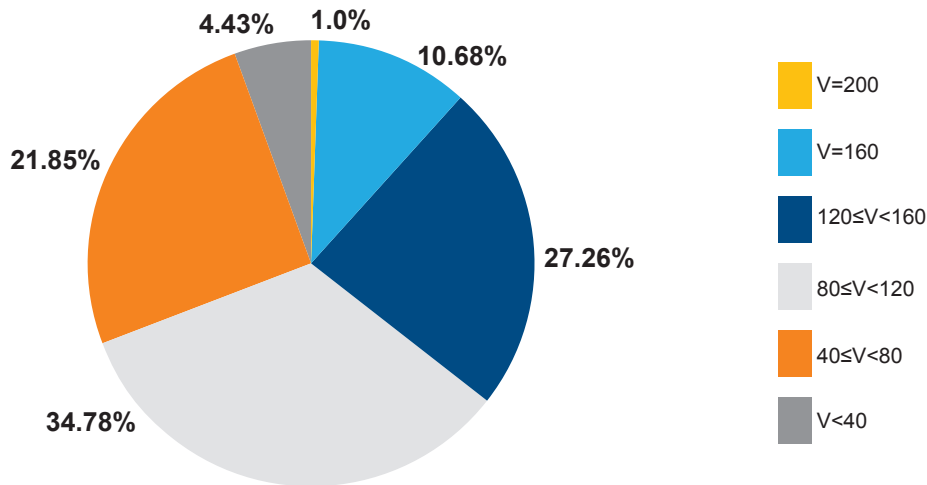
1. good – railway lines operated in line with the assumed parameters, only maintenance work is required;
2. satisfactory – railway lines with lower operation parameters (reduced maximum timetable speed, local speed limits); to restore the maximum operational parameters, in addition to maintenance work, ongoing repairs are required comprising replacement of faulty track elements;
3. unsatisfactory – railway lines of significantly lower operation parameters (low timetable speed, large number

of local speed limits, lower permissible loads), which qualify railway tracks for comprehensive replacement.

The effect of improved technical condition of tracks was the higher maximum timetable speed in the Train Timetable 2019/20 for passenger trains on 1005 m of tracks, and decreased speed on 328 km of tracks.



Percentage structure of maximum timetable speeds as at the day when the Train Timetable 2018/2019 became effective



For several years now, the length of tracks has been systematically increasing with the maximum timetable speed $V_{max} \geq 120$ km/h.

At the end of 2019 the length of such tracks was 10,605 km, while at the end of 2018 it was 10,278 km, while at the end of 2017 it was 10,244 km and at the end of 2014 – 7,818 km.

Automatics and Telecommunication

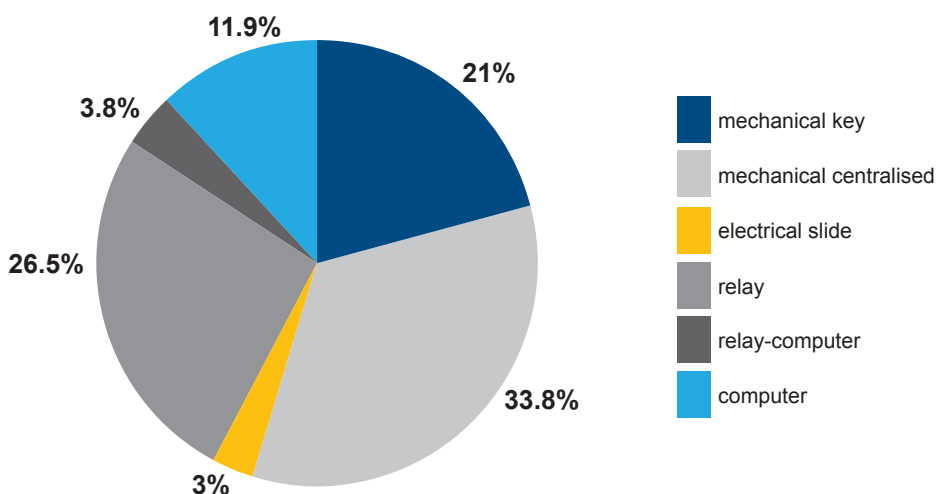
Control command and signalling (CCS) systems can be divided into three basic functional groups:

1. station equipment installed at signal boxes;
2. wayside equipment which control traffic on train lines;
3. traffic safety equipment at level crossings.

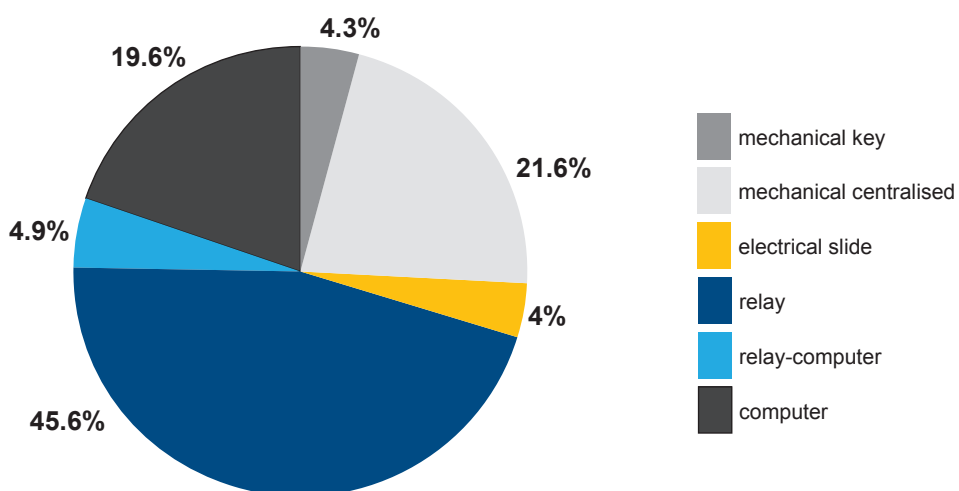
The above-mentioned systems still predominantly use relay and mechanical equipment. However, the dynamic development of IT technology has resulted in its vast application in CCS and automatic control systems.

The latest generation of CCS equipment comprises computer systems and relay computer (hybrid) systems which combine cutting-edge features, reliability and extended functionality in addition to ensuring a high level of traffic safety. According to the status of 31 December 2019, 36 Local Traffic Control Centres (LCS) were in operation as well as 5 LCS with the CCS system dedicated to low-traffic lines and 31 sections of lines on which remote control takes place. In total, the remote control unit comprises 217 switch circles, controlling a total number of 4,424 switches and 5,536 signallers per 2,146 km of railway lines.

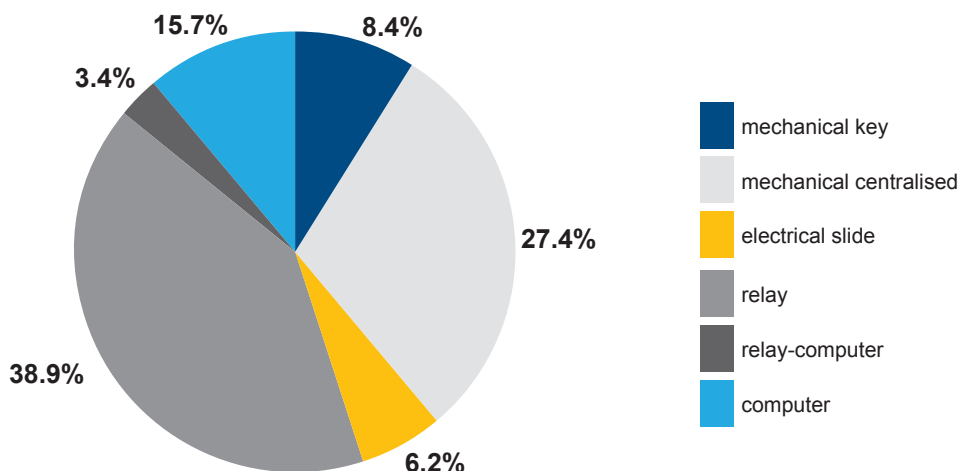
The signal box control areas in various types of station traffic CCS equipment



Light signals in various types of station traffic control equipment

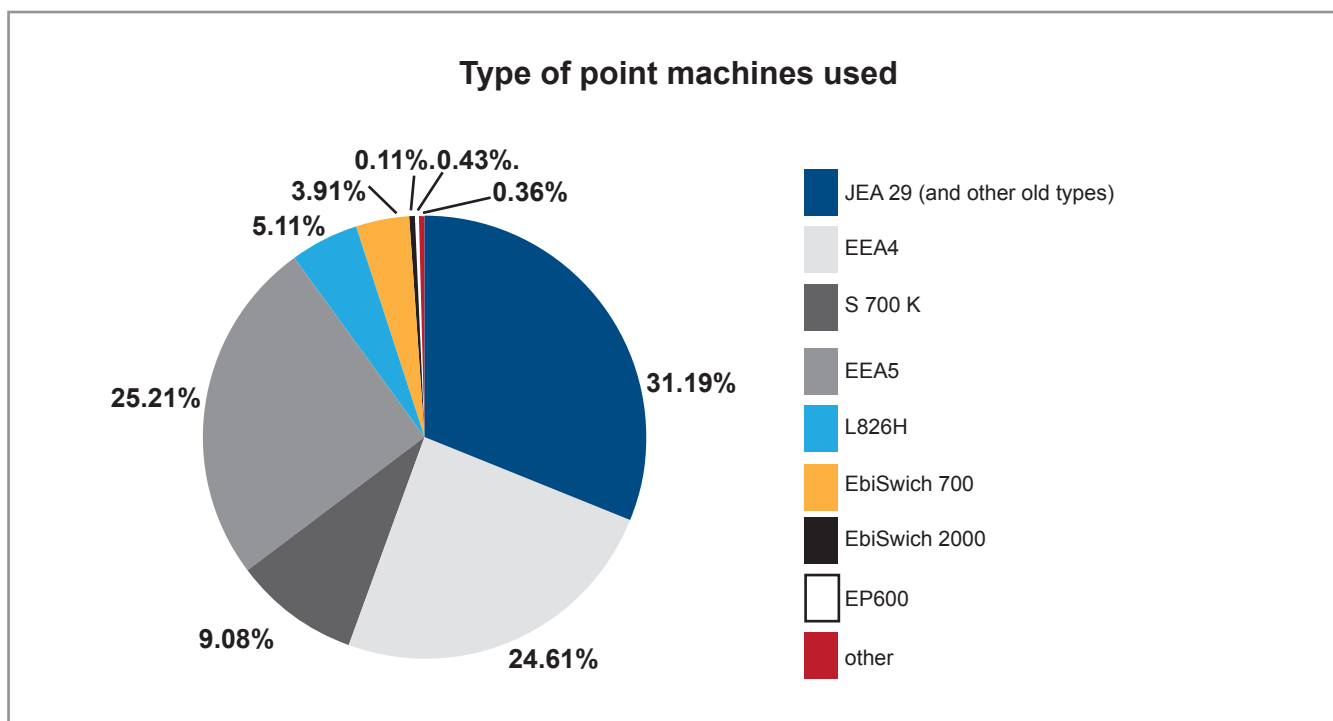


Switches in various types of station CCS equipment



Point machines play an important role in safe and efficient rail traffic management. In 2019, as a result of modernisation works and purchase carried out as part of maintenance works on the network of the railway lines managed by PKP Polskie Linie Kolejowe S.A. 1,802 new points machines were introduced.

As at 31 December 2019, a total of 38,642 mechanical and electrical point machines (of which 79.4% represents electrical point machines and 20.6% represents mechanical point machines) have been used on the railway line network managed by the Company. The share of individual types of electrical point machines is presented in the chart below.



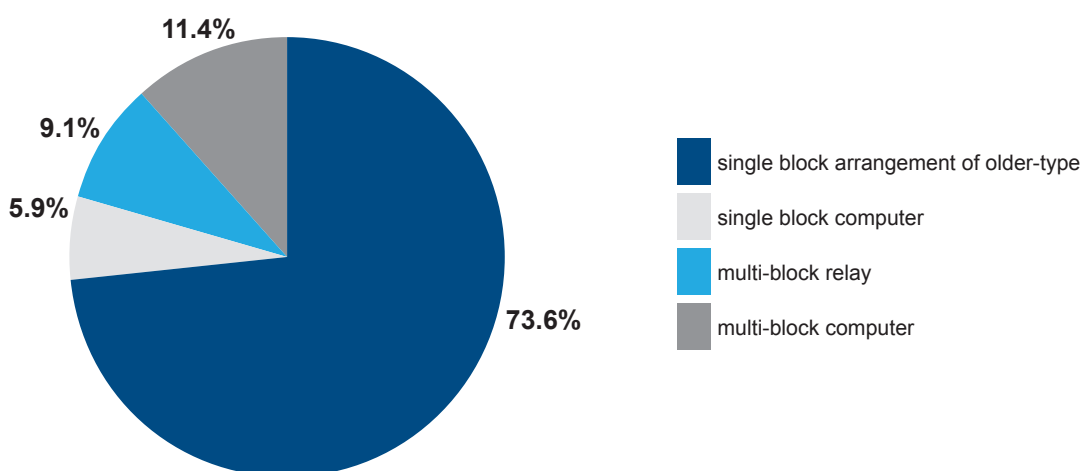
Groups of railway traffic control equipment in numbers

Station equipment	As at 31/12/2019		
	Signalling centre control area	Points	Signalling device
mechanical key	595	3,800	2,009
mechanical centralised	957	12,408	10,109
electrical slide	85	2,808	1,895
relay	749	17,635	21,351
relay-computer	107	1,543	2,297
computer	336	7,090	9,178
In total	2,829	45,284	46,839

The safety of train rides between operating control points is ensured by block signalling systems – single block and multi block – which have been installed on 16,127 km of railway lines. Single-block systems on railway lines managed by PKP Polskie Linie Kolejowe S.A. – 12,814 km of railway lines have them, while 952 km have systems utilising latest computer-controlled technologies.

Multi-block systems have been installed on 3,313 km of railway lines, of which 1,846 km are computer-based blocks, featuring integrated remote diagnostics systems, controlling and recording technical and operational parameters of the system.

Types of signalling block systems

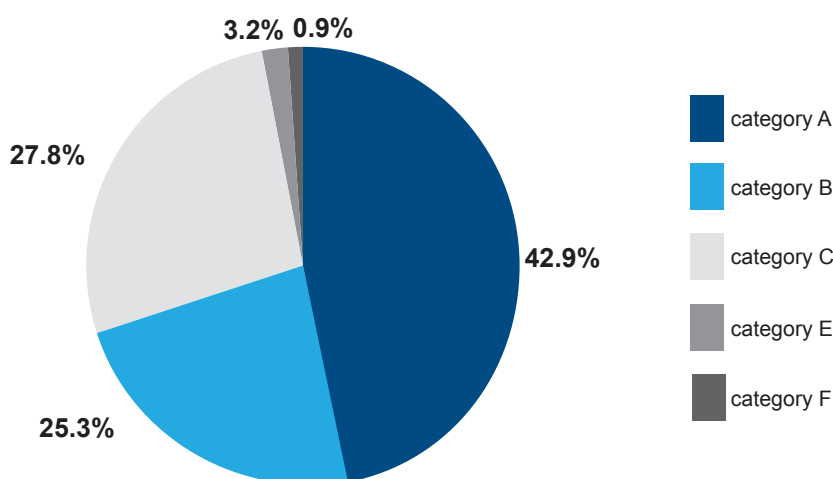


The railway line network managed by PKP Polskie Linie Kolejowe S.A. features 12,156 level crossings, with 5,362 crossings equipped in traffic safety equipment, which represents 44.1% of all level crossings.

The computer technology is also used in traffic safety equipment installed on level crossings. Equipment used at crossings features auto-diagnostic systems, systems that register all operation events as well as solutions controlling the operation of the entire system.

The intersections of railway lines managed by PKP Polskie Linie Kolejowe S.A. and public roads are equipped with 2,021 sets of such modern technical solutions, installed on cat. A, B, C and E crossings, which represents 37.7 % of all types of crossing equipment used.

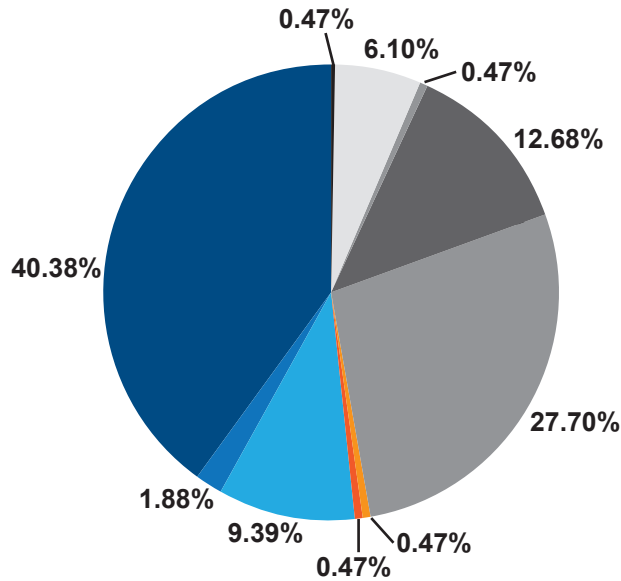
Division of road/railway level crossings equipped with traffic protection devices into categories



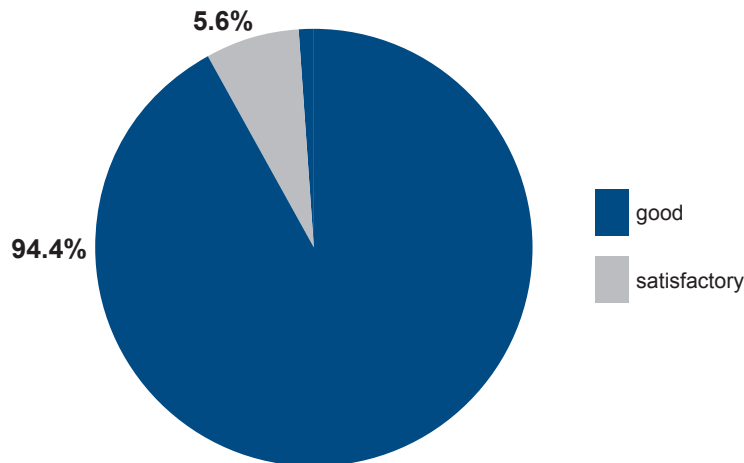
In order to ensure a constant and high level of operating safety, the modernised railway lines were equipped with defect detectors (dSAT). Currently, dSAT equipment are installed in 213 locations on the premises of 22 Railway Lines District Units. These systems, depending on their diagnostic configuration, can detect remotely (while the train is in motion) the following emergency conditions:

- failure of axle bearings (GM function);
- failure of block and disc brakes (GH function);
- deformation of wheel rims (PM function);
- dynamic overload (PD function);
- excessive axle and line loads (OK function).

Percentage share of types of defect detectors used



Technical conditions of defect detectors used



In 2019, work was carried out on the implementation of ERTMS/ETCS level 2 within the following projects:

- “Design and installation of ERTMS/ETCS Level 2 and ERTMS/GSM-R system with control-command and signalling equipment of the superior layer for 8 LCS on the railway line E-65 Warszawa – Gdynia”;
- “Design and construction of LCS Skierniewice and ERTMS/ETCS Level 2/GSM-R on the Warszawa Zachodnia – Koluszki section from km 3,900 – 104,918

of line No. 1 and Koluszki – Łódź Widzew from km 26,400 - 7,200 of line No. 17”;

- “Construction of ERTMS/ETCS Level 2 system on the E30 line, Podłęże – Rzeszów”;
- “Installation of ERTMS/CS system on line No. 278 Węglińiec – Zgorzelec”;
- Installation of ERTMS/ETCS Level 2 system on the E59 line on the Wrocław – Poznań section”;
- “Development of the ERTMS/ETCS Level 2 system on the E20 line Kunowice – Terespol (excluding the Warsaw junction)”.

Work also continued within multi-discipline projects involving the installation of ERTMS/ETCS Level 2 on tasks: "Works on the railway line No. 7 Warszawa Wschodnia Osobowa – Dorohusk on the Warszawa – Otwock – Dęblin – Lublin section, stage II" and "Restoration of traffic in the Łódź Railway Junction (TEN-T), stage II, the Łódź Fabryczna – Łódź Kaliska/Łódź Żabieniec section". Tender procedures were resolved and contracts were signed with the contractors for the development of ERTMS/ETCS Level 2 within the tasks "Implementation of ERTMS/ETCS Level 2 with the construction of LCS and automatic line block system on the section of railway line No. 4, Korytów – Zawiercie" and "Design and development of ERTMS/ETCS on the E75 line on the Warszawa Rembertów – Białystok section".

A contract was also signed for the implementation of a multi-discipline project covering the development of ERTMS/ETCS Level 2 within the task entitled "Construction works on line 227/249 and Gdańsk Zaspas Towarowa station and line No. 722" as part of the project entitled: "Improvement of railway access infrastructure to the Port of Gdańsk".

Important achievements in the field of research and technological development regarding automation and telecommunications:

1. the following television equipment systems are permitted:
 - 1) TVUZ-1A broadcast television – cat. A by KZA Lublin Sp. z o.o.;
 - 2) SABEL-IPTVK CCTV by SABEL Biuro Wdrożeniowo-Projektowe Sabat Roman;
 - 3) SMOK-2IP-B CCTV by KZŁ Bydgoszcz Sp. z o.o.;
 - 4) SAMNET CCTV by Thales Polska Sp. z o.o.;
 - 5) DR-TECH CCTV by DR-TECH Sp. z o.o.;
 - 6) TVIP-1M CCTV by Wielobranżowa i Projektowa Sp. z o.o. MONAT.
2. supervision over the implementation of testing plots was carried out in order to conduct operational tests for the purpose of obtaining the certificates of approval for operation issued by the Office of Rail Transport for:
 - 1) ESA 44-PL station system of CCS equipment by AŽD PRAHA s.r.o.;
 - 2) PEBL semi-automatic line block system by KZA Lublin Sp. z o.o.;
 - 3) Eap-2000 semi-automatic line block system by PPHU Maciej Grot Sp. z o.o.;
 - 4) electro-hydraulic ECOSTAR 4 points machine by voestalpine SIGNALING Poland sp. z o.o.;
 - 5) KPI-41 blade position controller by AŽD Praha s.r.o.;
 - 6) AZD 70-PL railway signalling device by AŽD Praha s.r.o.;
 - 7) ELS and ELK railway signalling device by KOLBUD Sp. z o.o.;
 - 8) P-80 G F.E points machine by Alstom Konstal S.A.;

3. supervision over the realization of testing plots was carried out in order to carry out operational tests for obtaining vehicle type authorisation issued according to SMS-PW-17 procedure:

- 1) energy-saving WLED railway indicators made in LED technology by KZA Krakow S.A.;
- 2) TLT-8/K LED traffic signal lantern module by Telko Sp. z o.o.;
- 3) KSS type points machine diagnostics system by Kolster S.A.

Electrical power equipment

Material situation

Electrical power equipment managed by PKP Polskie Linie Kolejowe S.A. in 2019 in comparison to 2018

Specification	Unit of measure	Year	
		2019	2018
Traction network equipment:			
length of electrified railway lines	km	11,998	11,862
length of traction network	tkm	24,991	24,783
catenary disconnectors	pcs.	20,093	20,371
including controlled	pcs.	13,483	13,669
Direct current equipment 3 kV (leased by PKP Energetyka S.A.):			
traction substations/sectional cabins	pcs.	11	11
modernised traction substations/sectional cabins	pcs.	26	26
Electric points heating system (EOR):			
single turnouts, including locking equipment	pcs.	33,587	33,630
External lighting and power systems in buildings:			
points of external lighting	pcs.	205,826	205,157
installation points and internal lighting	pcs.	198,571	192,530
MV distribution lines:			
non-traction lines (NTL)	km	757	751
Electric power delivery points:			
number of electric power delivery points	pcs.	16,647	16,342
contracted capacity	kW	379,494	363,382

Traction network

Technical condition of the traction network equipment

The criteria for assessing the traction network equipment are based on a mathematical algorithm. Adopted scale of assessment of the technical condition of the equipment:

- good condition – modernised equipment with acceptable degree of wear and tear; its technical condition enables further safe operation;
- satisfactory condition – equipment requiring minor and point repairs; its technical condition enables further safe operation;
- unsatisfactory condition – equipment eligible for renovation/modernisation; the technical condition of the equipment enables its further operation with increased diagnostic supervision;
- inadequate condition – which due to poor technical condition should be subjected to a complete renovation (modernisation). It can be operated with increased diagnostic supervision and more intensive maintenance activities.

Technical condition of traction network equipment (percentage)

Specification	Technical condition	2019	2018	2019 vs. 2018
		%	%	%
Traction network	Good	24.6	24.2	+ 0.4
	Satisfactory	46.7	47.7	- 1.0
	Unsatisfactory	26.6	25.7	+ 0.9
	Inadequate	2.1	2.4	- 0.3

Traction networks broken down by speed

The breakdown by operational speed is related to the nature of train traffic on a given railway line (line speed). Higher-speed lines are available for express trains for which the

correct power supply and interaction between pantograph and overhead contact line should be ensured.

Traction network broken down by maximum speed

Traction network	160 <V ≤ 200 km/h	120 <V ≤ 160 km/h	V ≤ 120 km/h
Number of tkm	3,998	7,747	13,244
Share expressed in %	16	31	53

External lighting equipment

The criteria for assessing the external lighting equipment are based on a mathematical algorithm. Adopted scale of assessment of the technical condition of the equipment:

- a) good – modernised equipment with acceptable degree of wear and tear; its technical condition enables further safe operation;
- b) satisfactory – equipment requiring minor and point repairs; its technical condition enables further safe operation;

- c) unsatisfactory – equipment eligible for renovation/modernisation; the technical condition of the equipment enables its further operation with increased diagnostic supervision;
- d) inadequate – equipment which, due to poor technical condition, should be subjected to a complete renovation (modernisation). It can be operated with increased diagnostic supervision and more intensive maintenance activities.

Technical condition of the external lighting equipment

Specification	Technical condition	2019	2018	2019 vs. 2018
		%	%	%
External lighting equipment	Good	31.5	31.2	+ 0.3
	Satisfactory	27.2	27.1	+ 0.1
	Unsatisfactory	18.4	18.1	+ 0.3
	Inadequate	22.9	23.6	- 0.7

The year 2019 witnessed the continuation of the programme consisting in the replacement of external lighting fixtures and poles.

As part of renovation work and the programme aimed to improve energy efficiency, 1,700 fixtures were replaced with power efficient units.

These measures ensure more effective lighting of railway areas as well as help reduce power consumption.

Electric points heating system (eor)

Evaluation of the technical condition of eor equipment uses a methodology, which to a great extent consists of the subjective assessment of the diagnostician or inspector diagnostician who conducts the assessment. Adopted scale of assessment of technical condition of eor equipment:

- a) good condition – this grade is given to equipment that meets the following criteria:
 - current period for which equipment has been in operation does not exceed 50% of the anticipated operation period;
 - equipment that has the technical and operational parameters that are complaint with the standards and requirements established for such equipment;
 - equipment that does not require renovation, with the exception of renovation resulting from normal operational wear and tear.
- b) satisfactory condition – this grade is given to equipment that meets the following criteria:
 - current period for which equipment has been in operation is between 50% and 100% of the anticipated operation period;
- c) unsatisfactory condition – this grade is given to equipment that meets the following criteria:
 - equipment that has the technical and operational parameters that are complaint with the standards and requirements established for such equipment;
 - require replacement of worn elements as part of scheduled repair/renovation work.
- d) inadequate condition – this grade is given to equipment that meets the following criteria:
 - the anticipated operation period has been exceeded;
 - the technical condition of equipment permits its safe operation;
 - equipment requires comprehensive modernisation or renovation work.
- e) inadequate condition – this grade is given to equipment that meets the following criteria:
 - given the degree of its use, equipment fails to meet the required technical and operational parameters;
 - due to the risk of breakdown and safety risk, equipment should be put out of service.

Technical condition of the electrical points heating system (eor)

Specification	Technical condition	2019	2018	2019 vs. 2018
		%	%	%
PHS equipment	Good	51.5	50.4	+1.1
	Satisfactory	45.8	47.0	- 1.2
	Unsatisfactory	1	1.2	- 0.2
	Inadequate	1.7	1.4	+0.3

Electrical points heating systems (eor) are being systematically equipped with weather stations, which streamline their proper utilisation. This results also in significant reduction of energy consumption. At present, 70% of eor is controlled automatically, whereas the remaining ones are controlled manually.

Another way to raise the efficiency and reliability of eor is to replace old transformer boxes which, due to the high rate

of separating transformer thefts have to be regenerated on multiple occasions.

Regeneration of old equipment (transformer boxes) does not fully restore their technical parameters (tightness and durability), which makes it necessary to replace it with new, tight, made of composites, additionally equipped with anti-theft systems.

Power consumption and energy costs

As part of its core activities, ensuring the proper functioning of railway infrastructure, the Company purchases energy throughout the entire country.

In 2019, the purchase of electric power has been carried out through 16,647 electrical power delivery points for which 379,494 kW of electric power has been ordered.

Compared to 2018, the number of delivery points increased by 305, while the installed capacity increased by 16,112 kW. Such a significant increase in installed capacity is the result of modernised railway infrastructure being put into service.

Equipment lease

The Company manages the infrastructure used to distribute electricity, which is leased by PKP Energetyka S.A. - the entity using this infrastructure to act as a Distribution System Operator.

In 2019, an agreement was in force between PKP Polskie Linie Kolejowe S.A. and PKP Energetyka S.A. which regulates issues related to the use by PKP Energetyka S.A. of supporting structures of the traction network belonging to the Company. The material scope in 2019 included 68,925 support structures.

In 2019, PKP Energetyka S.A. leased power processing equipment. Under the lease agreement, 885 assets in the form of power processing and distribution equipment were leased to PKP Energetyka S.A.

In addition, in 2019 PKP Polskie Linie Kolejowe S.A. leased part of the premises in the managed buildings under the contract for PKP Energetyka S.A. for USB2 control cabinets used to control local catenary disconnectors. In 2019, the agreement covered 838 facilities with 1,973 USB2 cabinets installed on them.

Important achievements in the field of standardisation, research and technical development

1. Research and Development in Railway Infrastructure (BRIK) – a joint initiative of the National Centre for Research and Development (NCBiR) and PKP Polskie Linie Kolejowe S.A.

PKP Polskie Linie Kolejowe S.A., as part of a joint venture with the NCBiR, runs a programme called BRIK – Research and Development in Railway Infrastructure. The measure is a response to the need for innovative development, and its main objective is to increase the competitiveness of rail transport by implementing modern technical solutions which improve the functioning and ensure continuous development of the industry.

The following undertakings in the field of power engineering are carried out as part of the initiative undertaken with NCBiR:

- a) development of an innovative system for controlling the lighting infrastructure on the network managed by the Company;
- b) the introduction of self-cleaning efficient photovoltaic panels on a flexible substructure integrated with an acoustic screen and smart monitoring system;
- c) development and implementation of the anti-theft system of the road network in rail transport.

2. Center for Railway Energy Efficiency

PKP Polskie Linie Kolejowe S.A. accepted the invitation to participate in the Program Council of the Center for Railway Energy Efficiency (CEEK). The initiators of the project are PKP Energetyka S.A. and the National Energy Conservation Agency (KAPE S.A.). The CEEK is a joint initiative of the railway industry for energy efficiency, the main objective of which is to seek a platform for dialogue between representa-

tives of rail operators, infrastructure managers and operators, scientific institutions and industry organisations.

The mission of the project is to seek solutions to optimise energy consumption on the Polish railway and to increase the perception of the railway as an environmentally friendly means of transport.

3. Testing ground “Overvoltage protection system for lineside equipment within the 3 kV DC traction network operation area”

In 2019, Polskie Linie Kolejowe S.A. continued the construction of a testing ground under the name: “Overvoltage protection system for trackside equipment within the 3 kV DC catenary operation area”. The assumption of the testing ground is to look for solutions to increase the safety of the infrastructure in use due to lightning as well as other occurring surges in the area of the catenary impact. As part of the work in progress, the failure rate of catenary and trackside equipment is observed in relation to adjacent sections of other railway lines on which no protective equipment has been installed. The summary report prepared within the agreement regulating the functioning of the experimental testing ground will specify the effectiveness of the applied solutions. The experience gained during the constructed testing ground will allow us to make a decision on the possible implementation of additional regulations in the Company in the field of protection against electric shock, overvoltage and lightning in the area of impact of the DC 3 kV catenary.

Other important events having a significant impact on the Company's operations that occurred in the financial year or are anticipated in the following years

1. Continuation of the programme regarding the replacement of traction network for composite insulators,
2. Continuation of the programme of exchange of lighting poles and fittings (especially for fittings in LED technology);
3. Continuation of the programme for the replacement of load anchors with load-free tensioning equipment for traction network;
4. Successive elimination of "old" types of traction network. This will result in standardisation and operation of 5÷7 types of traction network. In the main line and main stations, a traction network of 420 mm² or 450 mm² cross section is to be standard (contact wire material made of copper-silver alloy (CuAg) or copper-magnesium alloy (CuMg));
5. As part of the development of the existing "Energy Management System" (SZE), an analysis was carried out and new modules were implemented: Traction network, Outdoor lighting, eor (electric point heating system). The implementation of the implemented modules is planned for 2020;
6. As part of the adopted Energy Efficiency Improvement Programme, energy efficiency improvement measures

are being implemented in all possible areas of activity, in terms of power consumption and energy costs. Sample actions implemented under the programme:

- a) thermal upgrading of buildings,
 - b) changing the building heating system,
 - c) replacement/optimisation of the power supply system of the facilities,
 - d) reactive power compensation,
 - e) replacement of outdoor lighting fixtures,
7. In 2019, PKP Polskie Linie Kolejowe S.A. operated 23 photovoltaic system with a total installed power of 245 kW. Gross electricity production in 2019 amounted to 243,624 MWh, while consumption for own needs amounted to 164,224 MWh. Electricity production increased by 32.7 MWh compared to 2018.

Track Machinery Plant

Track Machinery Plant in Kraków is a specialised organisational unit of PKP Polskie Linie Kolejowe S.A. which carries out tasks comprising ongoing repairs, maintenance of railway lines and engineering structures as well as investments. The plant has specialist machinery and equipment as well as process lines for restoring and welding rails.

The maintenance of railway lines and engineering structures along with investment tasks are implemented using high performance specialist machinery for track and track bed work. What is crucial in the case of machinery groups is that repairs are carried out in a single take, without the need to disassemble the railway track, this significantly reduces the repair time and helps maintain uniformly high railway track parameters. This is especially important in the context of environmental protection and impact on areas adjacent to railway lines: there is no need to disturb the structure of the areas adjacent to the section under repair, to destroy access roads or to establish haul roads for transporting materials and diggings.

Thanks to the modernisation of the Rail Welding Section in Kędzierzyn Koźle completed in 2019, it is possible to weld 120 m long rails to a maximum length of 240 m. The use

of 240 m rails instead of 120 m in the modernisation of railway lines makes it possible to halve the number of welds made directly in the track, which shortens the time of track closures, and thanks to the better quality of welds made in stationary conditions it increases the safety of railway traffic. In 2019, 30,870 m of rails were welded at the Rail Welding Section in Kędzierzyn Koźle, while 113,726 m of rails were welded at the Rail Welding Section in Bydgoszcz, of which 81,106 m were reclaimed rails after tamping. Some of the reclaimed rails obtained during the investment works are intended for regeneration, which is carried out in a specialist unit, i.e. the Rail Welding Section in Bydgoszcz. In this process, the correct profile of the rail head is restored and then the rails are welded into a rail up to 210 m long. The rails after regeneration are used by Railway Lines District Units during maintenance works, which allows them to significantly reduce the costs associated with the purchase of materials.

Workshops of the Track Machinery Plant in Kraków perform repairs of the P2, P3 level of railway vehicles and the planned repairs of machines and track laying machines. Track machines and welding machines are operated by a highly experienced and qualified team of workers which en-

sure that the quality of performed work meets the most stringent expectations of clients.

To confirm the quality of services provided, the Plant has obtained the ISO 9001:2015 certificate.

Operation of track machines from the Track Machinery Plant in Kraków in 2019

Machine	Quantity	Unit of measure
AHM 800 R	30,988	r.m.
P-93 i P-95	111,277	r.m.
OT-800 i RM 80	122,456	r.m.
CSM 09	284,751	r.m.
ZTU 300	240,340	r.m.
DGS 62 N	250,851	r.m.
UNIMAT [j.r.]	721	r.o.u.
UNIMAT [mb]	53,810	r.m.
USP [mb]	360,720	r.m.
USP [j.r.]	309	r.o.u.

Diagnosics Centre

The Diagnostics Centre is a specialised unit within the Company's structures in the field of railway infrastructure diagnostics, which ensures the safety of railway traffic by constantly monitoring and analysing the technical condition of railway infrastructure during its operation. In addition, the unit supervises the maintenance of technical standards for the execution of railway surface elements, during maintenance and investment works.

The Diagnostics Centre performs measurements, tests and analyses the technical condition of infrastructure in the areas of maintenance and investment:

1. track geometry, structure gauges, measurements of the transverse and longitudinal profile of the rails, and other specialist matters such as roughness or hardness of the rails; chemical composition of joints, etc;
2. the geometry of the traction network, contact wire wear and defects and deficiencies in some of its components;
3. defectoscopic testing of rails, their connections and certain turnout components (revealing defects in terms of surface and internal damage);
4. functional diagnostics of dSAT equipment (rolling stock emergency detection) by simulating emergency conditions using special apparatus installed on the track geometry car;
5. calibration of measuring devices such as track gauges and steel straight-edges with a length of 1,000 mm;
6. supervision and control of rail and turnout welding and evaluation of rail joints;
7. field and laboratory tests of the quality of rail connections and training of technical staff for the Company in this area;
8. technical acceptance of surface elements intended for incorporation into railway infrastructure;
9. relay maintenance (RM) for relays used in signalling and train control systems;
10. preparation of opinions and expert opinions in the above-mentioned areas.

In 2019, the Diagnostics Centre performed – as part of their primary business – among others:

No.	Task	Quantity	Unit of measure	
1.	Measurement of horizontal and longitudinal track geometry in plan and profile, using two EM120 measuring vehicles and the UPS-80 special vehicle	47,898.6	km of tracks	
2.	Inspection of internal rail structure in a track using a track defect detection wagon	7,258.8	km of tracks	
3.	Inspection of internal rail structure in a track using a track defect detection bogie	42,844.2	km of tracks	
4.	Defect detection test on railway track elements	Welds	1,807	pcs.
		Padding welds	112	pcs.
		Turnouts crossings	1,267	pcs.
	Specialist test on railway track elements	Longitudinal rail profile	71,105	pcs.
		Transverse rail profile	496	pcs.
		Running surface coarseness	124	pcs.
		Measurement of straightness of rail connectors	3,278	pcs.
Eddy current testing of rails	70,623	metres		
5.	Control of operation of axle welding sensors using defect detection car (DSAT) which simulates an axle-box breakdown	378	devices	
6.	Participation in bridge structure inspections using a specialist vehicle Volvo – SRS Svabo vehicle, for the purposes of inspectors from Railway Lines District Units	153	facilities	
7.	Lab tests of rail welding joints	25	reports	
8.	Field tests of rail welding joints	6	reports	
9.	Tests of rail welded joints on open testing sites for welded joints (2 tests per year)	7	reports	
10.	Training and courses in rail welding and welding supervision	121	persons	
		22	courses	
11.	Periodic and certification exams in rail welding	196	persons	
12.	Instruction and issuing of competence certificates, identification cards for welding supervision	154	pcs.	
13.	Calibration	of track gauge	938	pcs.
		straight-edges	133	pcs.
14.	Technical acceptance of railway track elements	Turnouts	1,425	sets
		Various components for turnout production	58	pcs.
15.	Relay maintenance	Own units	43,925	pcs.
		External units	21,816	pcs.

The values listed in the above table are planned annually on the basis of obligatory regulations and the demand from the Company's maintenance units.

Passenger Service Facilities

PKP Polskie Linie Kolejowe S.A. undertakes a number of initiatives in the field of passenger infrastructure, with a view to providing travellers with better comfort of using platforms, access routes and convenient access to trains. Clear marking of the stations, access to information on train traffic are ensured. Passenger stations shall be equipped with the necessary elements to wait comfortably for the train and shall be adapted to the needs of persons with reduced mobility.

In 2019, the Company managed platforms and access roads at 2,762 passenger stations.

Since 1 December 2019, the Company has also been the manager of the Łódź Fabryczna passenger station, which includes a railway station integrated with the bus station and a multi-storey car park.

Passenger information

Resolution No. 404/2019 of the Management Board of PKP Polskie Linie Kolejowe S.A. of 17 June 2019 introduced the Framework Rules for using passenger stations, which are published in the information showcases at passenger stations. The new Rules have been updated in accordance with the provisions of Regulation 2016/679 of the European Parliament and of the Council (EU) of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation), as well as in accordance with the amendments to the Regulation of the Minister competent for infrastructure of 23 November 2004 on the rules of order applicable in the railway area, in trains and other railway vehicles.

In 2019, the Company piloted a new service at passenger stations – stops on demand. The service was introduced at two passenger stations in the Lower Silesian Province – Krzyżowa and Nowa Wieś Legnicka. The stations have been marked with special plates with the information “Stop on demand. Please wait for the train in a place visible to the driver”. On stations with the service in place, if there are no passengers on the platform or passengers alighting from the train, the train may pass without stopping. Passengers waiting for a train on the platform supporting the solution should position themselves in a place visible to the driver, and if they wish to leave the train they should report it to the train crew.

The dynamic passenger information service is provided at 1,353 railway stations and passenger stops across the country, which accounts for approximately 49% of all stations and passenger stops managed by the Company. In 917 locations, this is direct voice information provided by the operator – an on-call operator or a megaphone operator.

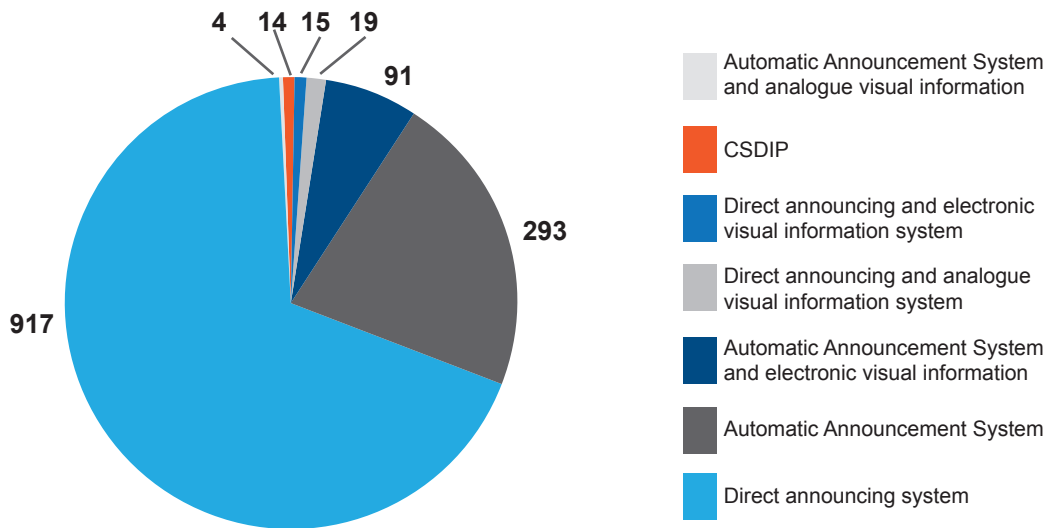
The Automatic Announcement System (SAZ) using a local server responsible for generating message content using the TTS (Text-to-Speech) speech synthesizer is installed in 293 locations.

At 129 passenger stations, voice information is accompanied by visual information, of which 106 locations are electronic systems with LCD liquid crystal displays. Analogue visual information systems are installed in 23 locations.

PKP Polskie Linie Kolejowe S.A. is gradually introducing the construction of executive elements of the Central Dynamic Passenger Information System (CSDIP) at passenger stations. The CSDIP is a centralised system which is a collection of all actuators built into the stations to present information to travellers. The Central Application of the Dynamic Passenger Information System (CASDIP), which provides it with timetable data and information about possible delays in train traffic, is a part of the CSDIP. The CASDIP application, in addition to providing source data to CSDIP visualising elements, ensures that the content is displayed on displays and that messages are delivered thanks to the implemented speech synthesizer.

Between 2016 and 2019, 14 locations were connected to the CSDIP, among others: Jelenia Góra, Zielona Góra Główna, Warszawa Wola, Warszawa Powązki, Milanówek, Pruszków and Warszawa Włochy. As at 31 December 2019, a total of 459 devices operate in the CSDIP system. In 2020, another 7 locations are planned to be connected to the CSDIP.

Passenger information systems of PKP Polskie Linie Kolejowe S.A.



Video monitoring

In 2019, among others, the Video Monitoring System (SMW) was developed at the stations of the Warsaw agglomeration: i.e. 3 stations (Wola, Młynów and Koło) as part of the modernisation of the Warsaw ring line; 8 stations (Warszawa Włochy, Ursus, Ursus Niedźwiadek, Piastów, Pruszków, Par-

zniew, Brwinów and Milanówek) as part of the modernisation of railway line 447 (Warszawa Zachodnia – Grodzisk Mazowiecki). 103 and 184 cameras were provided for these stations respectively, and an access network was built.

Names of passenger stops

In 2019, the process of organising and shaping the public space in which travellers move by assigning and changing the names of passenger stops, in accordance with the applicable regulations, was continued.

The names were given to 22 new passenger stations: Ustka Uroczysko, Olsztyn Dajtki, Olsztyn Śródmieście, Białystok Nowe Miasto, Hryniewicze, Orzechowicze, Miklasze, Szczecin Cmentarz Centralny, Szczecin Niemierzyn, Szczecin Stołczyn Północny, Szczecin Skolwin Północny, Police Dąbrówka, Szczecin Łasztownia, Szczecin Żydowce, Szczecin Dunikowo, Szczecin Trzebusz, Goleniów Park Przemysłowy, Lubin Stadion, Toruń Mokre, Burkatów, Jedlina-Zdrój Centrum, Kraków Grzegórzki.

In addition, names of 12 passenger stations have been changed:

1. Lubin (formerly Lubin Górniczy);
2. Szczecin Żelechowa (formerly Szczecin Żelechowo);
3. Szczecin Stołczyn (formerly Szczecin Glinki);
4. Daleszewo (formerly Daleszewo Gryfińskie);

5. Grzędzice (formerly Grzędzice Stargardzkie);
6. Łódź Lublinek (formerly Lublinek);
7. Skoki - Borowa (formerly Zarzeka);
8. Olsztyn Gutkowo (formerly Gutkowo);
9. Lublin Główny (formerly Lublin);
10. Tuszyna (formerly Przecław Tuszyna);
11. Rzeszów Miłocin (formerly Miłocin);
12. Nowa Sucha (formerly Leonów).

Equipment and maintenance of platforms and platform access routes

In 2019, the implementation of tasks aimed at improving the comfort of travellers' waiting time for a train within passenger stations continued:

1. approx. 120 platform shelters have been purchased and installed in over 75 locations;
2. approx. 450 trash bins have been purchased and installed in over 180 locations;
3. approx. 140 platform benches have been purchased and installed in over 60 locations;
4. approx. 620 bicycle stands have been purchased and installed in over 110 locations;
5. approx. 410 noticeboards have been purchased and installed in over 250 locations;
6. new permanent marking boards have been installed in more than 300 locations.

Adaptation of passenger service facilities to meet the needs of persons with disabilities and persons with reduced mobility (PRM)

In 2019, PKP Polskie Linie Kolejowe S.A. continued its efforts to eliminate architectural barriers at passenger stations in order to adapt them to the needs of people with disabilities and people with reduced mobility.

As part of the reconstruction and revitalisation tasks carried out by the Company, more than 310 platforms were rebuilt (e.g. in Rybnik, Dęblin, Garwolin), taking into account their adaptation to the needs of people with reduced mobility, including among others: 28 passenger lifts were installed, 179 slipways leading to the platforms were built, routes for visually impaired and blind people were built, the height of the platforms was adjusted to the binding guidelines.

In addition, in 2019 the Company continued its cooperation with Polskie Koleje Państwowe S.A. (PKP S.A.) with regard to the provision of assistance to disabled persons and persons with reduced mobility at passenger stations by physical security personnel of persons and property employed by PKP S.A. Within this cooperation, more than 16,400 assistants to persons with reduced mobility were provided in 58 passenger stations in 2019.

A summary list of results of activities undertaken in 2019 to adapt passenger stations managed by the Company to the needs of disabled persons and persons with reduced mobility is as follows:

1. 1,570 platforms were modernised;
2. elevators were installed on 296 platforms;
3. vertical platforms were installed on 80 platforms;
4. platforms situated near stairs were installed on 144 platforms;
5. 38 escalators are leading to 17 platforms;
6. 8 moving belts are leading to 4 platforms,
7. more than 800 platforms are equipped with tactile warning strips;
8. more than 950 passenger stations are equipped with ramps leading to platforms;
9. more than 145 stations have information in Braille.

Passenger stop inspections

In 2019, the update of internal guidelines introduced a new scope for reviewing the state of passenger infrastructure and preparing reports on station inspections. The updated guidelines regulate the principles of conducting audits and inspections of the technical condition and cleanliness of the

passenger infrastructure by the employees of the Company. The implementation of inspections and audits of passenger stations is a continuous process based on an analysis of the state of the infrastructure and the identification of possible irregularities and defects with a view to their rectification as soon as possible.

The average monthly number of inspections of passenger stations in 2019 amounted to nearly 4,400. In total, 52,220 inspections of 1,094 passenger stations and 3,961 audits of 2,592 passenger stations were carried out.

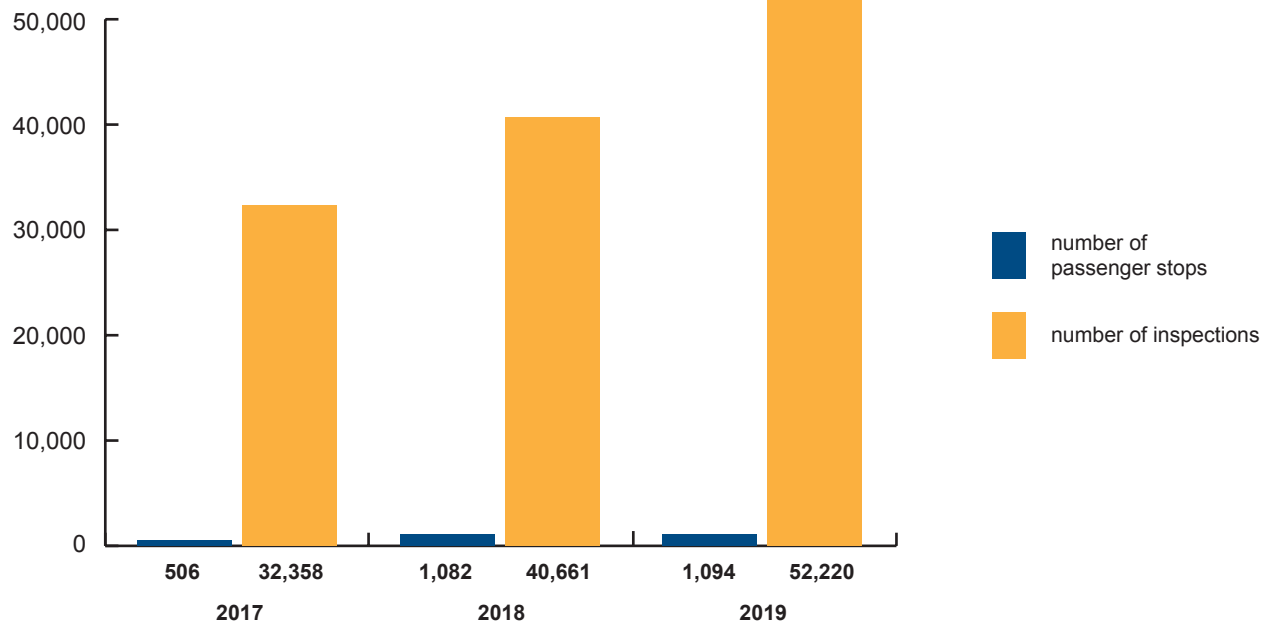
The above audit and control measures are undertaken primarily for the sake of the passenger. They are intended to ensure the required level of cleanliness and proper maintenance of the elements of passenger infrastructure to ensure the comfort of travellers using rail transport.

Inspections and audits of stations consisted of checking areas of passenger infrastructure, in particular:

1. the level of cleanliness including:
 - platforms, access roads, intersections, escarpments;
 - street furniture elements, platforms marking, SDIP elements;
 - removal of graffiti on buildings and street furniture elements;
 - equipment for PRM;

2. the level of winter maintenance including:
 - platforms, access routes;
 - street furniture elements, platforms marking, SDIP elements;
 - equipment for PRM;
3. the technical condition of the passenger infrastructure, including:
 - elements of street furniture, elements of platforms and access roads marking, noticeboards, shelters;
 - platforms and access roads, walkways, footbridges, other traffic routes;
 - bicycle racks;
 - equipment for PRM;
4. publication of different types of train timetables, including:
 - the line timetable (detailed);
 - the relational timetable;
 - the future timetable;
5. the dynamic efficiency of visual and voice information and time signalling systems;
6. the occurrence of illegal advertising.

Comparison of years 2017-2019 in terms of total number of inspections of passenger infrastructure and number of stations inspected



Winter protection of railway lines

Intense snowfall, low temperatures and strong winds can cause disturbances in the railway operation and transport process. During the winter alert period, which runs from 15 November to 31 March, a suitable winter alert phase is introduced, depending on the influence of weather conditions on train operation.

The introduction of a specific phase involves the inclusion of a sufficient number of workers, machines and snow machines in the winter work. Economically and socially important transport routes are subject to special winter protection.

Railway lines have been divided into three groups of winter maintenance order. Priority is given to railway lines with suburban train traffic related to commuting and school transport.

PKP Polskie Linie Kolejowe S.A. secured nearly 14.1 thousand people (own employees and external entities) for winter works in the 2019/2020 season. The basic element of the technical protection of railway lines are snow clearing machines – special snow clearance units, ploughs and snow removal machines. The Company owned a total of 251 such machines in 2019.

In addition, more than 17,400 points have been equipped with electric heating systems (eor) to ensure their efficient repositioning during snowfall.

There were also 178 rapid intervention teams available for troubleshooting failures and faults in the railway track and control command and signalling equipment (CCS). Places exposed to snow, i.e. a total of 921 km of tracks, were covered with permanent and portable counter-snow curtains. In addition, up to 66 emergency trains equipped with impact de-icing devices for contact wires and pantographs with reinforced overlays for removing frost and roam frost from contact wires are protected to remedy faults on the overhead contact line. More than 5,000 km of contact wires in the traction network were covered with an anti-icing agent to limit the effects of ice and ice build-up.

Commercial development of passenger infrastructure

In 2019, the verification and agreement of the conclusions of the Railway Company concerning the lease of passenger infrastructure space for commercial purposes continued.

These activities were carried out on the basis of the “Guidelines for commercial development of passenger infrastruc-

ture managed by PKP Polskie Linie Kolejowe S.A.”, which defines the rules for the development of commercial space and-services and advertising in the areas of passenger infrastructure.

Maintenance of order and cleanliness at stations and passenger stops

In 2019, 24 contracts for “Provision of cleaning services in selected locations managed by PKP S.A. and PKP Polskie Linie Kolejowe S.A.”, concluded as a result of a tender procedure in 2018, were continued. Under the contract in question, the cleaning service covers over 2 600 locations managed by PKP Polskie Linie Kolejowe S.A.

The process of performance level control involves the Company’s employees performing audits on the premises of 23 Railway Lines District Units. The auditors were equipped with mobile equipment with a dedicated audit application, enabling them to provide assessment and possible comments to the service provider in real time.

Technical railway rescue team

Safety is the absolute priority in railway traffic management. All measures aimed to ensure a high technical standard of the railway network managed by PKP Polskie Linie Kolejowe S.A. take into account the effective and efficient railway emergency response units. Thus, the railway technical rescue teams are located on the whole network managed by PKP Polskie Linie Kolejowe S.A., mainly at junction stations, in order to reach the places of incidents as quickly as possible. As of 31 December 2019, there were 18 teams operating, i.e. 11 Special Technical Rescue Trains (SPRT) and 7 Technical Rescue Trains (PRT), with vehicles, equipment

and about 500 trained employees meeting the qualification and health requirements.

The basic tasks of railway technical rescue teams are to remove the consequences of railway accidents and incidents that caused interruption or reduction in railway traffic and to transport railway vehicles damaged as a result of technical failures to the nearest station. Railway rescue teams are prepared to work in all weather conditions prevailing throughout the year in our country. The distribution and types of their railway rescue teams were adjusted to the needs and intensity of traffic on the railway network.

In 2019 PKP Polskie Linie Kolejowe S.A. purchased 2 new UniRoller-S rail-road vehicles for the needs of equipping the railway technical rescue teams. Thus, at the end of 2019, 17 UniRoller-S vehicles, equipped with equipment designed to deal with the consequences of railway accidents (mainly hydraulic lifts, rerailling bridges, power generators, control desks, wood for the substructure) and lighting equipment, were at the disposal of railway technical rescue services at the end of 2018. The vehicles also carry the crew performing the tasks of railway vehicle rerailling. They move at speeds of up to 80 km/h on the road and up to 50 km/h on the track.

In 2019, PKP Polskie Linie Kolejowe S.A. also purchased for the railway technical rescue teams a WM-15A/PRT vehicle, which was included in the equipment of the Special Technical Rescue Train in Wrocław.

As at 31 December 2019, the railway technical rescue team had 8 WM-15A/PRT vehicles at their disposal. In addition, 16 reciprocating air compressors for 16 rescue teams were purchased in 2019 as part of the retrofitting of railway technical rescue equipment. The above equipment is used to fill airbags which are used to lift overturned railway vehicles when it is impossible or significantly difficult to rerail vehicles using hydraulic equipment.

In 2019, 2 complete hydraulic sets with automatic side shifting were also purchased, together with cooperating equip-

ment for rerailling of railway vehicles for equipping rail technical rescue team's WM – 15A/PRT vehicles. Additionally, the delivery of 15 control panels with a four-fold control units for equipping 15 rescue teams was completed.

Technical railway rescue teams also have the following equipment at their disposal:

- 15 railway cranes with a lifting capacity of max. 125 tons;
- a crane with a lifting capacity of max. 250 tons;
- 3 Unimog rail-road vehicles;
- 2 Uniman vehicles;
- 10 WZT – 2 recovery vehicles;
- 63 technical and utility wagons equipped with rerailling equipment and wood for the substructure, power generators and lighting equipment, as well as serving as social facilities (dining rooms, drying rooms for working clothes) for technical railway rescue teams, railway commissions determining the causes of incidents or other persons involved in rescue operations.

Infrastructure Repair Company

Infrastructure Repair Company is a specialized organizational unit of PKP Polskie Linie Kolejowe S.A. that performs tasks in the scope of current repairs and maintenance of railway lines.

The entity was incorporated into the Company's structures in July 2018 as a result of acquisition of separate assets of Przedsiębiorstwo Napraw Infrastruktury Sp. z o.o. being at that time in composition bankruptcy, obtaining both fixed (machinery and real estate) and current assets and staff.

PKP Polskie Linie Kolejowe S.A, thanks to the establishment of the unit, was provided with facilities for future repairs of railway machines and wagons, as well as storage yards and buildings. In addition, the acquisition of specialist track machines and wagons and qualified staff (including machine and equipment operators and persons holding executive licenses in rail, bridge, construction and building as well as road specialities) resulted in a significant increase in the operating capacity of the Company in terms of the implementation of maintenance works with the use of its own funds.

2019 was the first full year of operation for the Infrastructure Repair Company.

In 2019, the unit carried out typical maintenance work such as: adjustment in the plan and profile of the tracks and turno-

uts, ballast cleaning, joining of rails in the track by thermite welding and standard welding. In 2019, Infrastructure Repair Company carried out over 20% of track adjustments made by the Company in total and 65% of adjustments in the plan and profile of tracks. Additionally, the Infrastructure Repair Company carried out about 30% of the adjustments in the plan and profile of turnouts with turnout tamping machines, 15% of ballast cleaning works and nearly 70% of rail connections welded with a track welder.

These works were carried out on railway lines No. 2 Warszawa Zachodnia – Terespol, No. 3 Warszawa Zachodnia – Kunowice, No. 6 Zielonka – Kuźnica Białostocka, No. 4 Grodzisk Mazowiecki – Zawiercie.

In 2019, Infrastructure Repair Company strengthened its machine potential by purchasing new machines and vehicles, as well as renovating existing ones. 4 specialist track machines and 48 carriages were renovated and 2 carriages for track measurements were purchased, as well as 33 pieces of small mechanisation equipment, such as: rail drilling machines, diesel caps, rail grinders and 10 track measurement equipment.

Work done with high-performance machines in 2019 type of work/types of machines	Quantity	Unit of measure
Track tamping with DPUS /CSM+DGS+USP	217,764	r.m.
Track tamping with gravel profiling / MD/PT + ZT/ZTU/USP	395,928	r.m.
Track tamping without profiling of the gravel /UNIMAT/PLM	98,418	r.m.
Gravel profiling in the track /TZT/ZTU/USP	60,730	r.m.
Turnout tamping /UNIMAT/PLM	544	pcs.
Gravel cleaning /OT + PTO/TMS	28,970	r.m.
Cess tamping /PŁT + TMS	25,580	r.m.
Chemical weeding of tracks /CHOT50A	2,713,917	r.m.
Making welds /PRSM	132	pcs

Work done with other equipment and manual work in 2019	Quantity	Unit of measure
Revitalisation of the track surface with drainage	6.55	km.
Rail replacement	18,707	r.m.
Turnout part replacement	27	pcs.
Sleeper replacement	1,514	pcs.
Switch sleeper replacement	572	r.m.
Production of thermite welds on rails	714	pcs.

Safety

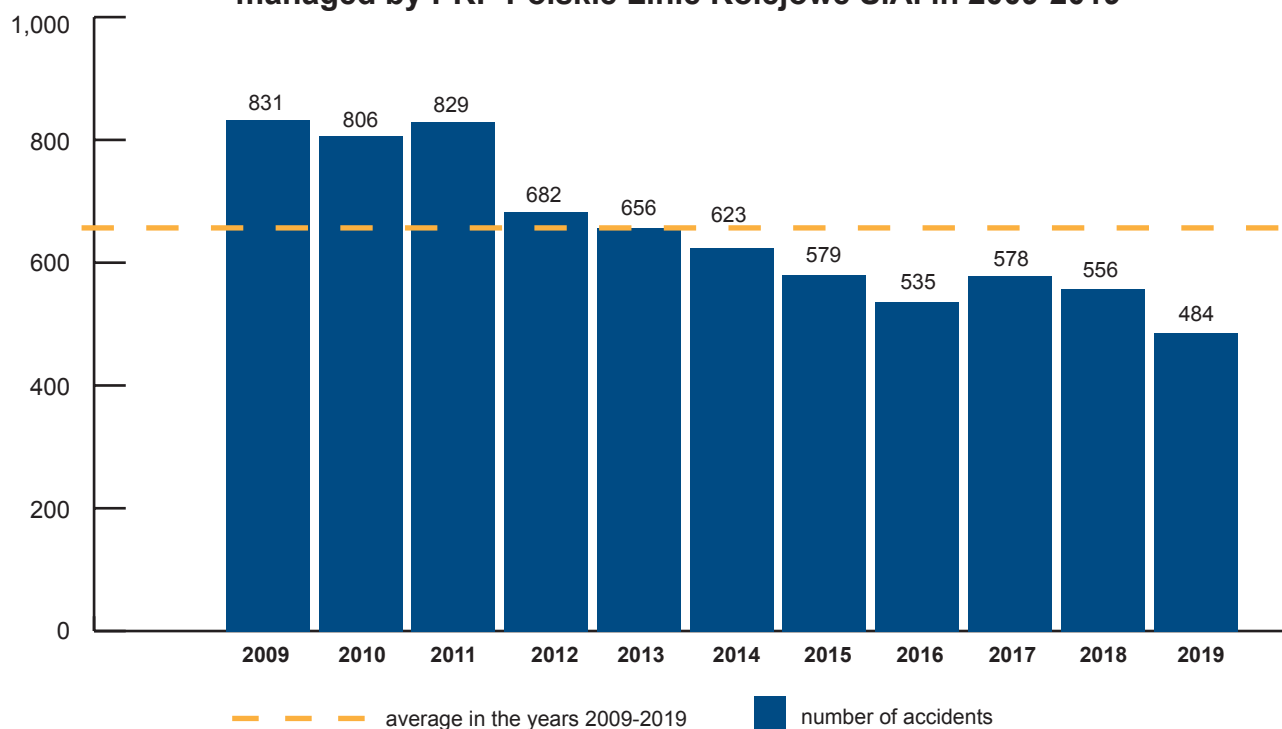


Statistics of railway incidents (As on 30 November 2020)

484 accidents (excluding suicides) occurred on the railway line network managed by PKP Polskie Linie Kolejowe S.A. between 1 January to 31 December 2019.

In comparison to 2018, the number of accidents decreased by 72 (13%).

Comparison between the numbers of incidents that took place on the railway lines managed by PKP Polskie Linie Kolejowe S.A. in 2009-2019

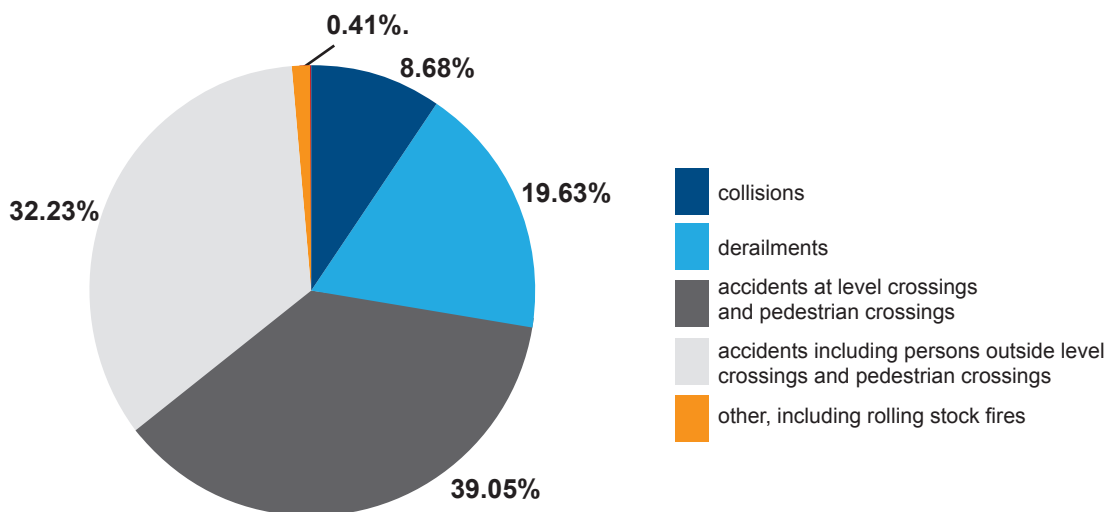


Accidents and serious accidents by type

The accidents classification method used by PKP Polskie Linie Kolejowe S.A. compliant with the requirements of the Office of Rail Transportation (UTK) and the European Railway Agency (ERA) covers:

1. collisions;
2. derailments;
3. accidents at level crossings and pedestrian crossings;
4. accidents including persons outside level crossings and pedestrian crossings (excluding suicides);
5. rolling stock fires;
6. other accidents.

Quantitative structure of accidents on the network managed by PKP Polskie Linie Kolejowe S.A. in 2019, by type



The diagram above shows that the most numerous group of accidents that took place on the network managed by PKP Polskie Linie Kolejowe S.A. were the accidents at level crossings and track pedestrian crossings and accidents involving people outside of level crossings and pedestrian crossings (persons who were on railway premises and were hit by trains, or who attempted to jump on/off trains). Collisions and derailments accounted for less than 29% of all accidents in 2019. These were incidents which are usually caused by the railway system in the broad sense, i.e. technical facilities,

procedures and/or the human and organisational factor (on the part of the railway undertaking or infrastructure manager). The possibility to reduce these two types of accidents depends directly on the measures taken by railway market participants (infrastructure managers and railway operators), and also designers, producers, suppliers and contractors performing construction and maintenance works.

Casualties of railway accidents

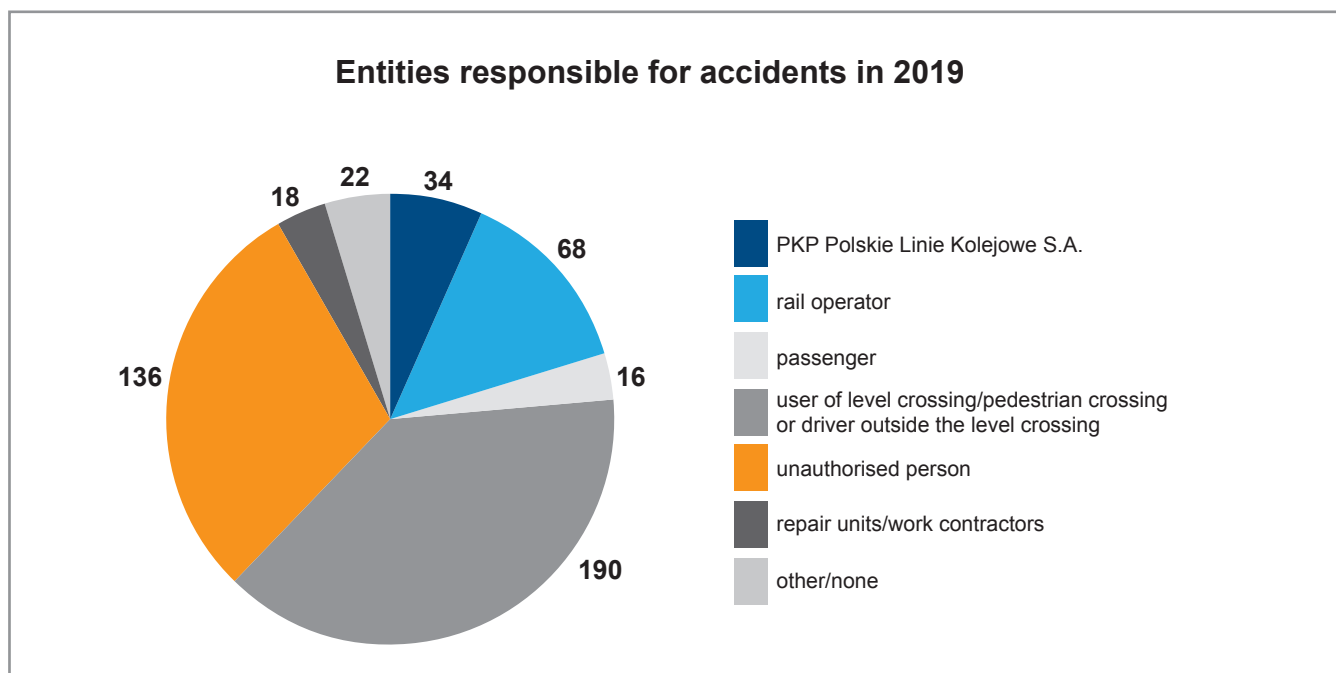
The number of casualties that resulted from accidents that occurred on the network of railway lines managed by PKP Polskie Linie Kolejowe S.A. in 2019 was 203, with 156 fatalities and 47 persons – severely injured. In comparison to 2018, the number of fatalities decreased by 29 and the number of severely injured also dropped by 36. The most numerous groups of fatalities of accidents in 2019 were people who were not authorised to be on railway premises (97

fatalities, i.e. 33 less than in 2018) and users of crossings and passages (58 fatalities, i.e. 14 more than in 2018). As regards persons that were severely injured in railway accidents, the largest group (24 people – fewer by 18 than in 2018) were those with no authorisation to be present on railway premises and users of level crossings and pedestrian crossings (21 people – fewer by 6 than in 2018).

Accidents by fault attribution

The statistics show that the vast majority of rail traffic accidents are caused by users of level crossings and pedestrian crossings and persons not authorised to be on railway premises - their number in comparison with the other

categories as regards entities culpable of accidents on the railway networks managed by the Company is predominant.



In 2019, 34 accidents were attributable to PKP Polskie Linie Kolejowe S.A., including: 7 collisions, 26 derailments and 1 accident on a level crossing.

The most frequent causes of the incidents that burdened the Company were mistakes made by the employees who run the railway traffic and damage to or poor technical condition of the railway road surface.

Measures taken to improve the safety of railway traffic

Initiatives to improve the technical condition of infrastructure and equipment

PKP Polskie Linie Kolejowe S.A. implement a wide-scale programme for the modernisation and revitalisation of railway lines. The scope of works under individual investment projects involves the comprehensive replacement of railway tracks, local control command and signalling equipment and electric power equipment (both traction and

non-traction) as well as the modernisation of level crossings and their removal and replacement with grade-separated junctions.

The replacement of old, run-down and degraded railway infrastructure and technical equipment with new infrastructure

and equipment made using modern technologies allows to significantly improve the operating parameters of railway lines (mainly maximum permissible speeds) while maintaining at least the same level of safety of railway traffic or even improving it.

Modernisation and revitalisation of railway lines reduces the risk of incidents in the form of accidents and incidents and potentially dangerous situations caused by poor technical condition or infrastructure failures. Similarly, by equipping level crossings with additional safety and warning equipment for users, the frequency of accidents at crossings is reduced.

Modernisation and revitalisation work carried out by PKP Polskie Linie Kolejowe S.A. on railway lines included the replacement and retrofitting of elements that play a crucial role in the prevention of the risk of derailment, i.e. turnouts. 1,232 turnouts on the network managed by the Company were covered by investment activities in 2019. As part of the above, the Company completed, among others, the implementation of a dedicated investment project entitled "Safety improvement through the construction of new higher-standard railway junctions – stage II". This project was included in the National Railway Programme (KPK) until 2023 and consisted in the replacement of 244 turnouts with accompanying works in 12 provinces for a total of over PLN 214 million. The largest number of new turnouts was built on tracks in the following provinces: Wielkopolskie (62), Zachodniopomorskie (41), Mazowieckie (28), Świętokrzyskie (24), Dolnośląskie (21), Kujawsko-Pomorskie (21) and Lubelskie (12). In order to ensure greater reliability and safety of rail transport in difficult weather conditions, all pnts installed under this project have been equipped with electric heating system (eor). It prevent the moving parts of points from freezing and make it easier to remove snow and ice, and the modern technology of eor equipment used enables their automatic heating depending on temperature changes.

Additionally, as part of modernisation and revitalisation projects currently in progress, PKP Polskie Linie Kolejowe S.A. is modifying level crossings and pedestrian crossings, equipping them with additional protection and/or warning solutions; moreover, level crossings and pedestrian

crossings are being removed and replaced with viaducts, footbridges or tunnels.

In 2019, the investment activities (within the project entitled "Safety improvement on rail level crossings") covered a total of 704 crossings, where in various locations the scope of modernisation covered: automatic crossing signalling equipment, installation of CCTV equipment and/or replacement of railway track. In addition, 72 grade-separated junctions were built or modernised.

The project has been divided into three stages – as part of the first stage covering the modernisation of 182 level crossings throughout the country, the category of crossings will be upgraded by equipping them with automatic crossing system equipment or replacing worn-out old type equipment with new generation equipment. Moreover, on selected crossings, track and road works has been carried out related to the replacement of railway and road surface in the area of the crossroads. The project was divided into 5 tasks. By the end of 2019, the works on 81 crossings were completed. The first stage of the project is scheduled for December 2020.

Within the framework of the second stage of the project, PKP Polskie Linie Kolejowe S.A. will replace 5 level crossings with two-level crossings with very high traffic ratios. Investments will be carried out jointly with local authorities. Preparatory work, including design work, is currently underway. The completion of the construction work is planned for the years 2020 – 2022.

The 3rd stage of the project gives the Company the opportunity to cooperate with road managers in the scope of co-financing road investments consisting in the liquidation of railway and two-way crossings and construction of collision-free junctions. It is a multi-location project, covering the construction of 29 facilities, including road and railway viaducts, underpasses and footbridges over tracks, in 8 provinces. The completion of all works, together with obtaining an occupancy permit, is planned by 31 December 2022.

Increasing safety during investment work implementation and other track work

The implementation of investment works and other track work requires the closure of track sections. Proper planning and commencement of those operations is crucial from the perspective of safety of the railway traffic carried out on the track located next to the closed track and on other routes and signal boxes located next to it.

Track closure entails the necessity of introducing appropriate obstructions in the scope of railway traffic and, in case of long-term closures – changes in train timetables. Under some disadvantageous conditions this may be an additional risk factor of railway incident.

In 2019, there was a total of 62,365 track closures on the network of PKP Polskie Linie Kolejowe S.A. (i.e. 9% more than in 2018), including 5,595 closures that lasted the whole day (i.e. 11% less than in 2018). Management of trains on railway lines where investment or other work is carried out in the vicinity of active tracks requires additional risk management measures.

In the recent years, the Company has taken a number of steps to improve safety during the implementation of investment projects and other works, both for people working in the vicinity of active tracks and safety of train traffic. Actions implemented in 2019 in this area included, among others:

- increasing the number of traffic stations during the investment at the station/route in the total amount of 36,109 hours;
- performing thematic audits of the Safety Management System (SMS) concerning railway traffic safety during the performance of investment works (8 such audits

have been carried out in 2019 and it will be continued in 2020);

- railway traffic safety inspections at investment works sites – in 2019, controllers on behalf of the Company's units and organizational units conducted 46 inspections in respect of the proper securing and signalling investment works sites from the side of tracks active for train traffic and temporary rules for traffic management during works;
- applying the "Safety rules during the performance of investment, revitalisation, maintenance and repair works by employees of foreign companies on the premises of PKP Polskie Linie Kolejowe S.A." and "Guidelines for providing information and informing the employee of another employer about threats concerning safety and health while performing work on the premises of PKP Polskie Linie Kolejowe S.A." lbh-105.

Purchase of specialist technical equipment for the diagnostics and repair of infrastructure faults

Under the draft Operational Programme Infrastructure and Environment (OPI&E) 5.2-10 entitled "Improvement of railway traffic safety through the purchase of specialist technical equipment", PKP Polskie Linie Kolejowe S.A. allocated PLN 250 million for the purchase of 47 specialist vehicles and equipment for infrastructure diagnostics and efficient removal of faults on railway lines.

The ordered equipment gradually delivered to technical teams all over the country.

In addition, in 2019 the Company purchased a rail-road vehicle to inspect engineering structures (e.g. bridges), which, thanks to the use of a cherry picker, will enable the inspection of hard-to-reach places on approximately 6,400 engineering structures on the railway network.

Installation of track occupancy control systems

In 2019, in order to reduce the risk of collision of rolling stock on the station tracks, the installation of trackside control systems in stations not yet equipped with such devices continued.

In 2019, the track occupancy control systems were built on 344 tracks at 82 railway stations, which will be continued in 2020.

Interlocking of the level crossing equipment in station control-command and signalling equipment

In order to improve safety at level crossings of cat. A located within the boundaries of railway stations, in 2016, an action was initiated, and in 2019, continued with the installation control-command and signalling equipment (CCS) on level crossings, the so-called interlocking, thanks to which the display of signals allowing trains to run on

semaphores is possible provided that the level crossing gates of the crossing have been closed. In 2019, this solution was applied at 81 level crossings. Activities within the said project will be continued in 2020.

Purchase of W 24 indicators made with the use of LED technology

Starting from 2016, the Company has been implementing an activity aiming at improvement of the safety system on the railway network, consisting in the replacement of W 24 indicators "Opposite direction indicator" using incandescent LED light sources with LED indicators. Thanks to the use of such technology it is possible to significantly increase the visibility and readability of these indicators, both due to the better visibility of the light source and the ability to adjust the brightness of the indicator to the right conditions (day/night, weather conditions). In accordance with the guidelines included in the internal regulations of PKP Polskie Linie Kolejowe S.A. and the basic investment documents, only W 24 indicators made in LED technology should be used when installing new or replacing old CCS equipment, whereas in equipment not covered by invest-

ment projects, indicators should be replaced gradually and as far as possible.

In 2019, 595 indicators were purchased and installed as part of the central purchase of W 24 indicators in LED technology, to be installed in locations designated on the basis of identified needs and operational criteria, i.e. average 24-hour train traffic, line category, type of CCS equipment built at the control point, (in 2016 - 2019 a total of 2,715 indicators). In selected locations, they replaced the existing indicators made in technology based on incandescent light sources (signal bulbs).

Marking of road-rail access routes with horizontal lines slowing down the train

In order to reduce the risk of collisions at crossings, PKP Polskie Linie Kolejowe S.A. implemented in 2014 and continued in the following years the activity consisting in placing special warning and slowing down signs on the access roads and railway crossings. The purpose of stripes applied to the access road surface at an appropriate distance from the railway line is to warn the driver of the road vehicle of approaching the railway crossing a place of increased risk, where special care should be taken.

Thanks to the small convexity, the strips generate characteristic vibrations and sound, while the bright red colour is

a visual informational and warning factor. These activities are directed mainly at increasing the level of safety at level crossings of category D (without barriers and light and sound signalling system), however, in justified cases signs are also carried out at crossings of categories B and C. From the moment the project was initiated until the end of 2019, the signs were made on the access roads to 415 level crossings.

Initiatives of the Company aimed at improving staff competences and shaping safety-oriented attitudes

PKP Polskie Linie Kolejowe S.A. is implementing a major programme aimed to develop safety-oriented attitudes among its employees, as well as its stakeholders. The actions taken in this area in 2019 included, among others:

- running 15th edition of "Safe rail-road level crossing";
- implementation of workshops on safety at railway and road crossings for representatives of driver training centres and provincial traffic centres (WORDS);
- driver training centres (WORD);

- conducting "Discussion about safety" and safety clubs;
- implementation of the 6th edition of the knowledge competition for employees entitled "Safety First";
- conducting a series of training courses for employees on a simulator of railway control and communication equipment;
- job placement as part of professional preparation for work in the Company in the field of basics of Safety Management System, risk management as well as human factor and safety culture;

- preparation and distribution of teaching and support materials for the Company's employees in the form of a bookmark to the traffic log with the slogan "Switch on the sensors!" and a pocket calendar with most important rules of safety culture;
- providing all employees of the Company with semi-annual and annual information on safety on the managed railway network;
- developing information bulletins concerning railway incidents that have occurred and distributing them to employees responsible for railway traffic safety;
- participation in the 4th edition of the competition entitled "Safety culture in the rail transport" organised by the Office of Rail Transport (UTK).

Since 2016, as a signatory of the Declaration on the Development of Safety Culture in Railway Transport, PKP Polskie Linie Kolejowe S.A. has taken part in the consecutive

editions of the UTK competition entitled "Safety culture in rail transport". Each year, the initiatives implemented by the Company related to the area of safety culture gain recognition of a jury composed of representatives of the UTK and the world of science.

Monitoring the Safety Management System (SMS)

PKP Polskie Linie Kolejowe S.A. implemented a monitoring process for their "Safety Management System", laid down in procedure SMS/PD-04 Monitoring and Continuous Development of the Safety Management System and the Maintenance Management System (MMS), in order to meet the requirements laid down in Commission Regulation (EU) No 1078/2012 of 16 November 2012 on a common safety method for monitoring to be applied by infrastructure managers after receiving a safety authorisation. Moreover, in compliance with the provisions of this Regulation, the Company implements a Monitoring Strategy establishing, among others, the principles for selecting tools and methods of SMS monitoring for problem areas as well as qualitative and quantitative ratios used in SMS monitoring. Main areas subject to the monitoring process include:

1. the safety of railway traffic operated on the railway network managed by PKP Polskie Linie Kolejowe S.A.;
2. the correct and effective application of SMS procedures at the Company;
3. the introduction of technical, operational and organisational changes considered as significant in the change management process (procedure SMS/MMS-PR-03);
4. cooperation with suppliers and contractors whose products/services have a direct or indirect impact on railway traffic safety;
5. the effectiveness of implementation of preventive and corrective measures, including:
 - the implementation of guidelines and recommendations of National Railway Accident Investigation Board (PKBWK);
 - the implementation of guidelines of railway committees included in the Final Memorandum of Understanding (PUK);

- the implementation of post-inspection conclusions from inspections carried out by the UTK or other public administration authorities;
 - the implementation of conclusions and recommendations from SMS audits, SMS controls, SMS inspections;
 - the implementation of recommendations issued by risk analysis teams;
 - the implementation of conclusions from the previous monitoring process application;
 - the implementation of tasks provided for in the Safety Improvement Programme;
 - the implementation of training, periodic and ad hoc instructions.
6. the effectiveness of implemented risk management measures and actions implemented as part of constant SMS optimisation.

The basic tools and methods of SMS monitoring at the Company include:

1. maintaining an Accidents and Incidents (WiW) database and performing statistical analyses of data collected therein;
2. running the Operating Performance Registration System (SEPE) application and a performing statistical analyses of data contained therein;
3. analysing common safety indicators (CSI) and how they change over time;
4. SMS audits;
5. SMS controls, taking into account all internal regulations concerning the performance of controls in the Company;
6. SMS inspections.

Risk management activities

A total of 640 change significance assessments have been conducted in 2019, with 5 changes deemed to be significant – within the meaning of Commission Regulation (EC) No. 402/2013 of 30 April 2013.

In addition, 233 risk assessments for railway traffic safety has also been performed as an element of the Safety Ma-

agement System in force at the Company, so as to determine additional risk management measures in justified cases and minimise the degree of risk (enhance safety) related to the Company's activity.

Implementation of the Railway Traffic Safety Improvement Programme

The primary purpose of developing and implementing the Railway Traffic Safety Improvement Programme in 2019 was to prevent any unacceptable risks and limit the frequency of hazards and their consequences through the application of appropriate risk management measures. Measures stipulated in the Programme are aimed at the implementation of main safety targets for the year 2019, laid down in Resolution No. 791/2018 of the Management Board of PKP Polskie Linie Kolejowe S.A. of 09 October 2018.

Apart from measures allocated to individual initiatives and targets, the Programme also includes indicators that allow to monitor the target achievement progress on an ongoing basis. These indicators have been designed in such a way, so as to enable their comparison in cumulative periods with the state as at the end of the base year. Warning and alarm values have also been determined for each indicator in reference to all periods.

Organisational units of the Company are tasked with submitting quarterly reports from the implementation of the Programme in 2019.

In these reports, the units participating in the implementation of the Programme presented quantitative (expressed in percentages) and qualitative information concerning the performance of tasks stipulated in individual initiatives and provided the values of main safety target achievement indicators in relation to their own activity. Quarterly reports for the implementation of the Programme for the year 2019 were based on the verification and analysis of information provided and subject to approval by the Vice President of the Management Board, Director for Operational Affairs.

In 2019, the Company also implemented a number of additional measures to improve railway traffic safety in all areas of its activity. PKP Polskie Linie Kolejowe S.A. monitored "The implementation of undertaken measures by developing the Schedule of Safety Improvement Measures of PKP PLK S.A. for the years 2019-2021". The total number of measures included in the schedule that were undertaken in 2019 was 56, including 18 technical measures, 23 organisational and operational measures, and 15 employee-related measures.

Railway Security Guard

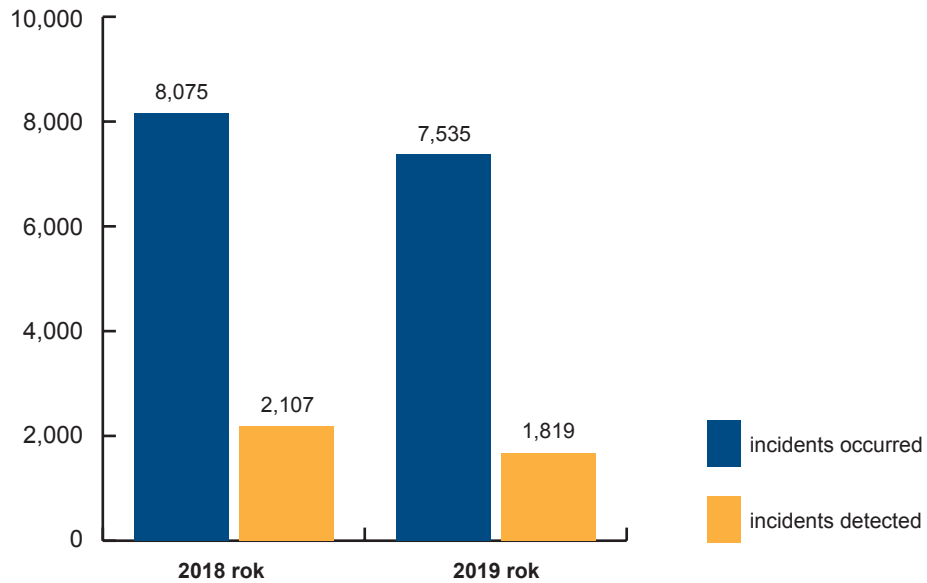
Approximately 7% less dangerous incidents were noted by the Railway Security Guard (SOK) in 2019 in comparison with 2018. Effective preventive measures taken by SOK officers are supported by modern equipment and trained staff. Mobile monitoring centres operate in the field – vehicles equipped with cameras, portable and thermal, installed on masts.

SOK officers are also equipped with thermal and night vision equipment which guarantee better efficiency during activities conducted at night, photo-traps – equipment notifying officers on duty when an unauthorised person appears in the secured area, and company cars which help to move quickly in difficult terrain conditions. During the activities undertaken,

SOK officers are supported by specially trained patrol and guard dogs.

In 2019, the Railway Security Guard carried out more intensive preventive and anti-theft measures on trains, railway stations and railways. Due to the activity of officers of the Railway Security Guard, the number of offences committed in the railway area decreased by 6.7% (from 8,075 in 2018 to 7,535 in 2019, i.e. less by 540 incidents).

Incidents recorded by the Railway Security Guard in the years 2018-2019



In 2019, in comparison with 2018, a slight increase in losses resulting from crimes and offences committed in the railway area was recorded by 1.04%, but the value of railway property recovered by SOK increased by 47.6%.

In 2019, the largest percentage of all incidents recorded (42.08%) were devastations and other hooligan pranks. Compared to 2018, the number of incidents recorded in this category has increased by 138 cases (from 3,033 in 2018 to 3,171 in 2019). This represents a 4.4% increase in incidents.

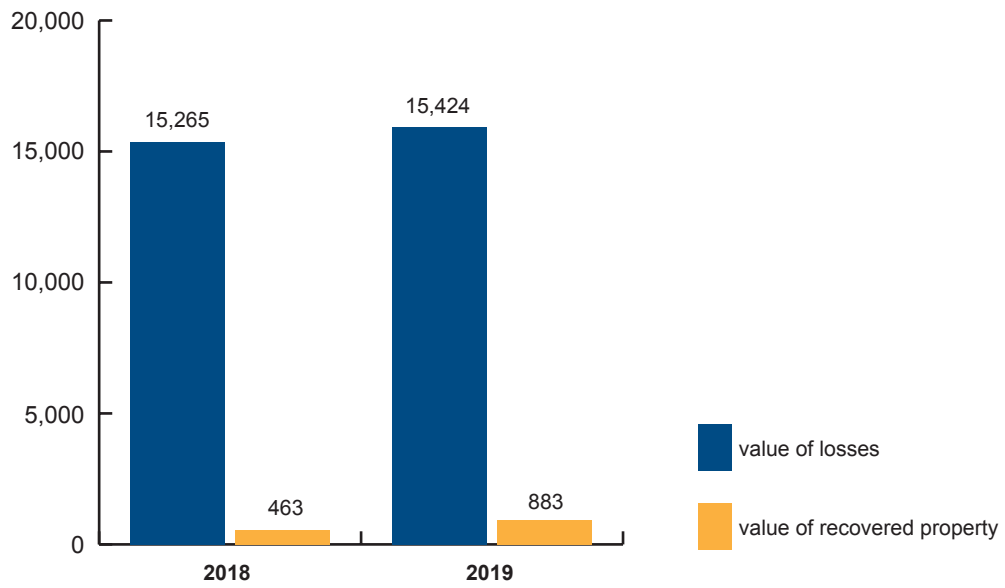
Other groups of incidents that stand out because of the number of cases recorded were:

- theft and devastation of equipment at level crossings – 11.2% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has dropped by 59 cases (from 908 in 2018 to 849 in 2019). This represents a 6.5% drop in incidents;
- theft and devastation of equipment on open railway lines – 8.36% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has dropped by 135 cases (from 765 in 2018 to 630 in 2019). This represents a 17.7% drop in incidents;
- apprehension of persons wanted, possessing drugs, dealing with smuggling, illegal migration and intoxicated persons – 9.67% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has dropped by 30 cases (from 759 in 2018 to 729 in 2019). This represents a 4% drop in incidents;
- theft of rolling stock surface elements, materials, tools, official objects and goods from bulk consignments – 7.74% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has dropped by 142 cases (from 725

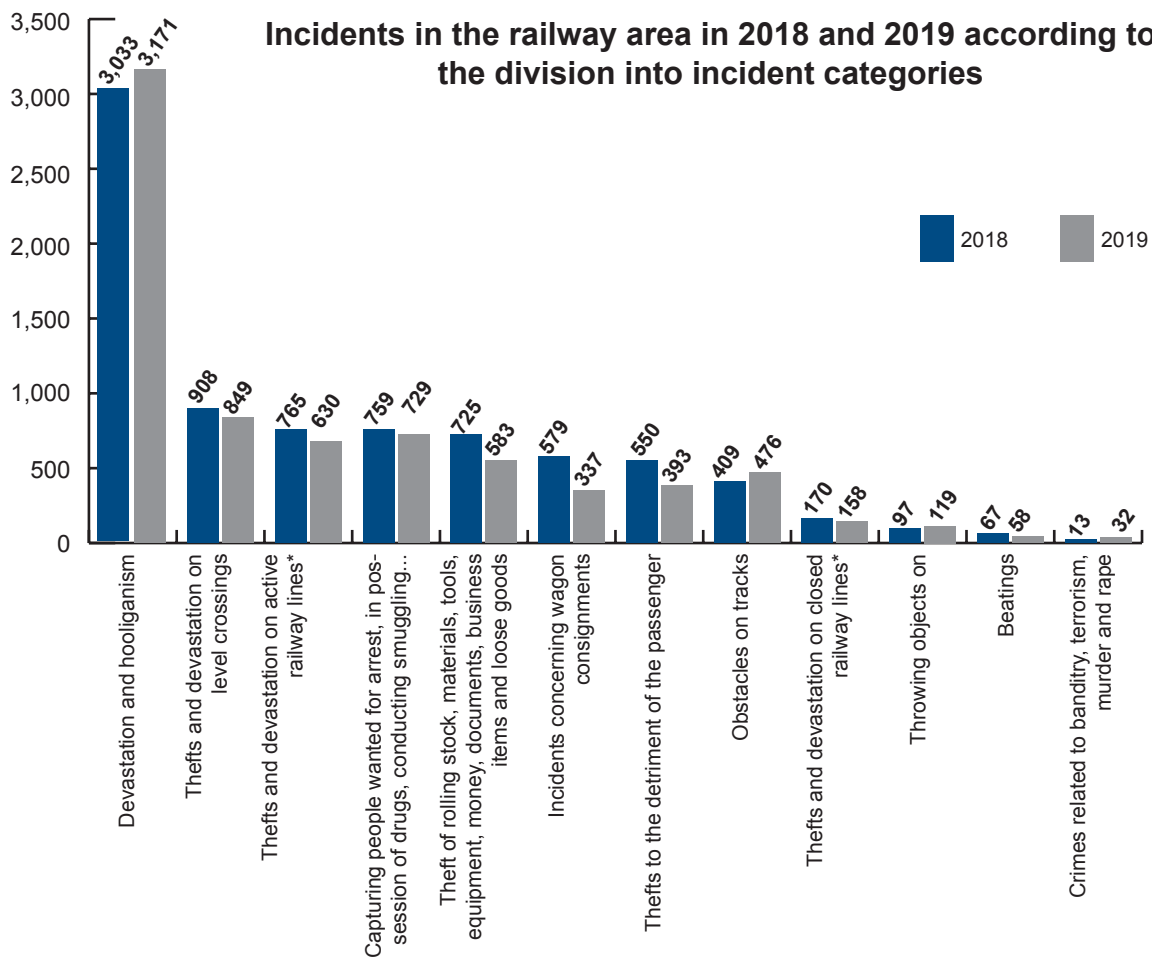
in 2018 to 583 in 2019). This represents a 19.6% drop in incidents;

- incidents related to freight consignments – 4.47% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has dropped by 242 cases (from 579 in 2018 to 337 in 2019). This represents a 41.8% drop in incidents;
- theft to the detriment of travellers – 5.22% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has dropped by 157 cases (from 550 in 2018 to 393 in 2019). This represents a 28.5% drop in incidents;
- obstacles on the tracks – 6.32% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has increased by 67 cases (from 409 in 2018 to 476 in 2019). This represents a 14.1% increase in incidents;
- throwing objects at trains – 2.09% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has dropped by 12 cases (from 170 in 2018 to 158 in 2019). This represents a 7.1% drop in incidents;
- theft and devastation of equipment on closed railway lines – 1.58% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has increased by 22 cases (from 97 in 2018 to 119 in 2019). This represents a 18.5% increase in incidents;
- persons' battery – 0.77% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has dropped by 9 cases (from 67 in 2018 to 58 in 2019). This represents a 13.5% drop in incidents;
- banditry, terrorism, murders and rapes- 0.42% of all incidents recorded in 2019. Compared to 2018, the number of incidents recorded in this category has increased by 19 cases (from 13 in 2018 to 32 in 2019). This represents a 59.4% increase in incidents.

Losses resulting from the offences committed in the railway area in PLN thousand



Incidents in the railway area in 2018 and 2019 according to the division into incident categories



In 2019, Railway Security Guard officers:

- checked 54,875 people;
- cautioned 56,012 people;
- imposed 30,784 fines by way of a ticket for the amount of PLN 2,240,155;
- submitted 1,428 motions for punishment to court;
- carried out a total of 17,478 inspections of scrap yards (carried out on an ad hoc basis and under the „Infrastructure” measures), which revealed
- 28 pieces of railway property from theft of a total value of PLN 111,571. As a result of the actions, 10 purchasers and 22 sellers of illegally acquired rail infrastructure elements were apprehended;
- apprehended 2,199 perpetrators of offences;
- carried out 58,113 patrols on passenger trains;
- carried out 165,539 patrols of routes;
- carried out 177,825 patrols of stations and passenger stops;
- carried out 56,410 patrols of freight stations;
- checked 979,891 freight wagons.

In addition, SOK officers took an active part in the following actions:

- social campaign “Safe rail-road level crossing” – SOK officers secured 17,491 railway crossings and intervened with regard to 2,989 persons who committed offences;
- “Wild crossings” – the officers secured 44,155 so-called wild crossings, intervened in relation to 11,003 persons who crossed the railway tracks in a place not designated for this purpose;

- “Safe Track” – activities aimed at controlling the rights to stay in the railway area – during the activities, CSC officers inspected 22,045 employees performing work in the railway area and 5,274 outsiders. 19,431 SOK officers took part in the activities;
- “Infrastructure” – within country-wide actions, SOK officers inspected 11,391 railway routes and 8,944 scrap yards. In the course of its activities, 22 perpetrators of theft were apprehended;
- 1,059 lectures were held with 64,020 children and young people taking part.

An important area of public safety also remains the protection of passengers when participants in mass events travel by rail. In 2019, the Railway Security Guard officers secured the railway area during the passage of 765 trains, in which were 114,207 football fans.

In the Central Headquarters of the Railway Security Guard, there is a nationwide emergency telephone, which receives reports of incidents in the railway area. 3,456 emergency calls were registered from 1 January to 31 December.

Social campaign “Safe rail-road level crossing”

2019 was marked by a new version of the social campaign “Safe rail-road level crossing”. The new strategy, the website, multimedia activities and tools thanks to which the Company aims to reduce the number of accidents at crossings and railway areas have changed the campaign beyond recognition. Modern thinking and effective action have translated into increased public awareness of safety in railway areas. “Listen to the voice of reason, do not risk crossing the railway tracks!” - This is how the new campaign, launched in November 2019, is being called for by women – Security Ambassadors. They appear in the educational materials of campaigns aimed at different age groups. They teach safety rules in railway areas. Their appeals in television and radio spots recall the application of the rules and prudent conduct at crossings and level crossings.

Along with the new strategic approach, a modern website has also been created as a communication centre for

the entire social campaign “Safe rail-road level crossing”. It contains, among other things, in-depth information about the activities carried out, safety instructions for the driver, games and materials for children: an educational booklet and a colouring book. In line with the spirit of the times, new mobile applications have also been developed. The “Safe Passage” application contains information about the campaign and an intuitive tool for reporting faults at level crossings. In addition, the “Safe Passage VR” application, aimed at younger audiences, is a game that uses elements of the railway infrastructure and allows you to move to virtual pedestrian crossings and level crossings, teaching through play the appropriate behaviour in railway areas. Both applications can be downloaded for free to iOS and Android phones.

PLK Yellow Sticker supports users of level crossings

One of the key projects carried out within the campaign in 2019 was #PLKYellowSticker. PKP Polskie Linie Kolejowe S.A. has marked almost 14 thousand level crossings with special stickers containing an individual identification number allowing to locate a given intersection (INI). Additionally, the INI database was integrated with the IT system used by operators of the emergency number 112. The crossing identification number on the yellow sticker, provided by the person reporting the risk or accident, shall allow the operator of the emergency number 112 to indicate the exact location of the pedestrian crossing or level crossing and to react quickly by railway staff and, if necessary, by emergency services.

An immediate reaction increases the chance, e.g. to stop a running train at a safe distance from the crossing and thus prevent an accident.

By 2019, the stickers had already been used 4,352 times, calling the emergency number 112 and using the information contained on them. In 269 cases, train speed limits and the order for the driver to drive carefully were applied and in 167 cases, train movements were stopped so that tragedy did not occur.

numer
skrzyżowania:

003 299 660

W razie wypadku lub zagrożenia wypadkiem tel.:

112

W razie awarii tel.: +48 012 345 678, +48 01 23 45 678

About safety on the road - for children and adults

Workshops and trainings being organised should be included among the equally important aspects of the activity of PKP Polskie Linie Kolejowe S.A. within the framework of the "Safe rail-road level crossing" campaign. In 2019, the seminars were attended by security specialists, including representatives of local Driver Training Centres, Regional Traffic Centres (WORD), Railway Security Guards, Regional Police Headquarters, Regional Headquarters of State Fire Service and medical rescue teams. During the meetings, topics such as road traffic law in the context of level crossings were discussed, categories of crossings and the most common offences committed by drivers were presented in detail, as well as video materials from CCTV cameras, showing dangerous behaviour of drivers were shown. In addition, in 2019, teaching materials were made available to representatives of over 1,300 Driver Training Centres.

Another project within the campaign was "Safe Friday", organised all over Poland on every holiday Friday on the

busiest crossings in the country and along the tracks with so-called "wild crossings".

In 2019, as part of the project, nearly 600 information and prevention actions were carried out, about 89 thousand information materials were distributed, almost 800 improperly behaving persons were cautioned, 575 mandatory fines were issued and over 2,000 sobriety tests were carried out. This extremely important initiative is intended to remind every traffic participant of their obligation to comply with traffic regulations and common sense.

The Company also reached out to the children with the message of the "Safe rail-road level crossing" campaign by organising educational lectures in schools and kindergartens. In 2019, the more than 1,477 educational lectures attended by 56,599 thousand were conducted. During educational meetings, children learnt the basic rules related to crossing level crossings, learnt signs, acquired knowledge considering what they must not do in the area of railways.

“Safe Passengerail-road level crossing” appreciated by specialists

The social campaign “Safe rail-road level crossing” was awarded four times in 2019 in key industry competitions, including one of the 30 most significant national social projects of the past 30 years. During the awards ceremony, which took place in the seat of the Ministry competent for investment and development, the projects that have had the greatest impact on social attitudes in the last 30 years were distinguished. During the “Złote Spinacze” gala, during which prestigious awards were given for the most creative and effective communication activities carried out in 2019, the campaign was awarded in the “Automotive and Transport” category.

Moreover, PKP Polskie Linie Kolejowe S.A. was honoured in the competition “Safety Culture in Railway Transport”, organised by the Office of Rail Transport (UTK), with two highly regarded awards in the railway industry for the implementation of the project #PLKYellowSticker, which is an integral part of the social campaign “Safe rail-road level crossing”. For the implementation of the project of a life-saving sticker on level crossings, the Company’s representatives received the statuettes in the following categories: “System Solution” and “Audience Award”.

“Safe rail-road level crossing” in numbers

In 2019 the following were conducted:

- 1,477 educational lectures on railway safety – more than 55 000 educated children;
- 1,316 leaflet and prevention actions at level crossings / pedestrian crossings (together with the „Safe Friday” project); – 575 persons were fined, 922 persons got cautioned, 2,168 were subjected to alcohol test, 8 drivers proved to be drunk;
- 261 defects reported via the “Zgłoś usterkę” form were repaired;
- 13 workshop trainings for representatives of Driver Training Centres;
- 2 crash simulations;
- 95 open-air events;

The following were produced, published and broadcast

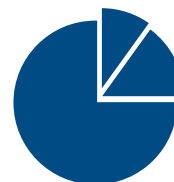
- 2 spot campaigns in the biggest, national television stations;
- 2 spot campaigns in multiplex cinemas and studio and local cinemas (the campaign spot was seen by a total of over 5 million viewers);

- 50 press articles in national and regional newspapers and magazines;
- 200 billboard carriers;
- advertisement on 300 LED billboards and 1,000 LCD/LED screens throughout Poland.

Campaign achievements:

- about 2,000,000 recipients of the graphics “Co zrobić, gdy utkniemy na przejeździe z zamkniętymi rogatkami?”
- approximately 11,000 Facebook infographics on safety at the level crossing;
- approximately 10,000,000 hits of the campaign spot on YouTube.

Development prospects



General strategic framework

PKP Polskie Linie Kolejowe S.A., in accordance with the statutory obligations, fulfils the function of the managing body of the national railway network, operating within the framework of the state policy in the area of railway transport.

The development prospects of PKP Polskie Linie Kolejowe S.A. result from decisions taken at the governmental level concerning railway transport and provisions in this area adopted in EU and national strategic documents. It is assumed that they will be implemented continuously in subsequent years.

The strategy for Responsible Development until 2020 (with perspective up to 2030)¹ defines strategic projects for the railway sector. Two of them relate directly to the Company's business. These include: National Railway Programme until 2023. Railway infrastructure managed by PKP Polskie Linie Kolejowe S.A.² (KPK) and the long-term programme "Assistance in financing the costs of railway infrastructure management, including its maintenance and repair until 2023"³. The KPK includes investment projects co-financed from the EU funds within the financial framework 2014-2020/23 and other investments in railway infrastructure managed by PKP Polskie Linie Kolejowe S.A. financed from public funds, while the second of the above-mentioned programmes is to ensure sustainability of railway infrastructure operating parameters, stability of financing and effective infrastructure management.

The long-term programme "Assistance in financing the costs of railway infrastructure management, including its maintenance and repair until 2023" is implemented in complementarity with the activities carried out within the framework of the KPK, ensuring co-financing of the costs of railway infrastructure management until 2023, especially in the area of maintenance and repair. This will improve the quality of rail infrastructure and shorten travel times, increase passenger safety and, as a result, increase the competitiveness of rail transport. The execution of the programme in question is an agreement⁴ concluded between PKP Polskie Linie Kolejowe S.A. and the Ministry competent for infrastructure on 21 December 2018.

In 2019, a further multiannual programme was established, entitled Programme for Complementing Local and Regional Railway Infrastructure – Rail + until 2028, conducted under the umbrella of the Ministry competent for infrastructure, for the implementation of which PKP Polskie Linie Kolejowe S.A. is responsible. The objective of the Programme is to supplement the railway network with railway connections of towns with more than 10 thousand inhabitants, which do not have access to passenger connections with province capitals or those which have access to rail, but the existing connections need to be improved.

The Programme is aimed primarily at local government units which would be interested in developing the railway infrastructure in their area, taking into account the commu-

¹ Document adopted by the Council of Ministers on 14 February 2017.

² Document adopted by the Resolution of the Council of Ministers on 15 September 2015

³ Document adopted by the Resolution of the Council of Ministers on 16 January 2018

⁴ Agreement of 21 December 2018 for the implementation of the long-term programme „Assistance in financing the costs of railway infrastructure management, including its maintenance and repair until 2023”

nication needs of the inhabitants. The Programme assumes the implementation of line investments, i.e. modernisation of the existing or construction of new railway lines and point investments, such as the construction of new stops, passages or railway lines. The projects implemented will be able to be financed 85% by the Programme and 15% by local authorities.

The development and detailing of the country's most important strategic objectives in the field of transport is presented in the Transport Sustainability Strategy to 2030 (SRT 2030), a horizontal, integrated sectoral strategy within the system of nine integrated national development strategies.

Key development activities in 2019 and subsequent years will focus on the implementation of investments specified in the KPK and in the Detailed Plan of Implementation of the KPK, including planned expenditures and sources of financing of individual investment projects.

The main prospects of the Company's development are also determined by actions aimed at improving railway traffic safety, increasing the quality of the infrastructure offer and expanding cooperation with operators and contractors. Further work is expected to be carried out in order to increase the efficiency of the Company's operations. Particular attention will also be paid to taking the greatest possible account

of the needs of railway undertakings and the expectations formulated by society and the economy. Activities related to ensuring compliance of technical solutions applied with the requirements of the Technical Specification for Interoperability (TSI) will be continued.

In the longer term, the Company's activities will continue to focus on the implementation of investment projects aimed at modernising the railway network and providing an infrastructure offer at a level corresponding to market demand and the society's needs. They will be implemented within the framework of the next multiannual programme for the new EU perspective 2021-2027 and in the framework of the next edition of the multi-annual programme for infrastructure management and maintenance.

National cooperation

In 2019, the Company continued cooperation with local government units in the area of implementation of investment projects under the Regional Operational Programmes (ROP) 2014-2020 throughout the country.

The activities related to running projects from the ROP were connected with the current cooperation on the implementation of investment priorities.

International cooperation

In 2019, the Company continued its participation in the EU project of key performance indicators (KPI PRIME) concerning all areas of activity of railway infrastructure managers in the EU,

on the basis of which the European Commission published another publicly available comparative report.

Legislation - EU levels

In 2019, work was carried out at EU level on proposals for regulations under the Multiannual Financial Framework, as well as on a draft new regulation on the rights and obligations of rail passengers and a draft directive on improving measures to make progress in the implementation of investments on the TEN-T (the so-called SMART TEN-T – Trans-European Network – Transport).

In addition, work has been carried out in the framework of the revision of the regulation on EU guidelines for the development of the Trans-European transport network (TEN-T guidelines), as well as an initial analysis of the revision of the EU strategy ("Transport White Paper") and the new "Strategy for Sustainable and Intelligent Mobility". The Company also monitored the creation of new legislation and the development of an EU strategy on climate policy.

Strategic planning

In 2019, the Company provided the Ministry competent for infrastructure with a list of proposed projects to be included in the New Financial Perspective for 2021-2027. The list includes projects indicated for implementation under the Cohesion Fund and the European Regional Development Fund (ERDF). In preparation for the New Perspective the Company decided to start developing pre-project documentation for projects with a total value of almost PLN 100 billion.

In 2019, the planning works initiated in 2017 related to the preparation for the implementation of investment tasks from the funds of the ROPs in the New Financial Perspective for the years 2021 – 2027 were continued. The result of the work is the development of a list of investment projects planned for implementation in the coming years and the identification of those projects which, on the basis of analyses, will best fit into the network nature of rail transport, and thus will contribute to the increase in the number of passengers and cargo.

In 2019, PKP Polskie Linie Kolejowe S.A. adopted the Master Plan for the Warsaw agglomeration, setting out the directions of infrastructure development at the Warsaw Railway Junction. On the basis of the Company's experience resulting from the preparation of the Master Plan for the Warsaw agglomeration, decisions were taken on the implementation of subsequent studies (feasibility studies) for junction stations in large cities, such as: Wrocław, Poznań, as well as for the feasibility study for infrastructure investments in the Małopolska region.

The aim of the study is to carry out a comprehensive analysis at the scale of the agglomeration, which will allow the identified operational and investment ideas to be verified on the basis of the identified and projected transport needs.

The Company also conducted ongoing cooperation with Central Transport Port (CPK) for the exchange of information on:

- the scope of investment projects;
- operational assumptions to be included in the pre-design documentation;
- agreeing on the points of contact for investment projects.

Support for investment projects

Ongoing cooperation was conducted with organisational units of communes, districts, marshal and provincial offices in the scope of infrastructural railway projects implemented in the 2014-2020 perspective, in particular project initiation, setting investment priorities, target list of projects and its updates, co-financing rules and the scope of documentation required when applying for funds from the European Regional Development Fund (ERDF).

Moreover, it was analysed in terms of purposefulness and the possibility of the Company's undertaking possible implementation or cooperation with government and local government administration units, in the scope of initiatives and investment motions submitted by those units which concern railway transport, e.g. changing the location and construction of new stops, restoration (reactivation) of railway traffic.

The Microsimulation and Analytical Model of Track Systems (MAMUT) as a specialist IT tool for testing the capacity of railway lines based on a precise mapping of infrastructure (with accuracy to the location of e.g. single turnouts and semaphores), was used for current analyses supporting the investment process of the Company. The micro-simulation modelling was also used in the developed feasibility studies to support the identification of technical solutions beneficial for rail traffic. In 2019, it was used, among other things, to analyse traffic and operating possibilities of changing the location and building new stops on the suburban line in the capital: Warszawa Rondo de Gaulle'a and Warszawa Solec.

Interoperability

Resolution No. 842/2019 of the Management Board of PKP Polskie Linie Kolejowe S.A. of 19 December 2019 introduced "Guidelines for the implementation and application of the essential interoperability requirements in the

lop-1 investment process". This is the first document in the Company on the issue of interoperability, which aims to introduce uniform regulations for the implementation and application of the essential requirements for interoperability.

Research and development activities

One of the most important activities undertaken in 2019 by the Company was the continuation of cooperation with the National Research and Development Centre (NCBiR).

In 2019, the process of concluding contracts for the implementation of research and development projects included in the "Joint Undertaking of PKP Polskie Linie Kolejowe S.A. and NCBiR entitled BRIK - Research and Development in Railway Infrastructure" was completed.

As a result, 10 research and development projects are being implemented with a total value of over PLN 42.9 million (including the Company's financial contribution – PLN 17.6 million), i.e:

1. Development of standard technical solutions for interfaces in computerised signalling equipment (CCS);
2. Development of innovative methodology of building photovoltaic panels in acoustic screens on the network managed by PKP Polskie Linie Kolejowe S.A.;
3. Development and implementation of a technology for measuring the temperature of rails installed in tracks with wireless transmission of the obtained measurement data to IT systems;
4. New solutions to protect people and the environment from noise;
5. New solutions for the protection of people and buildings against vibrations;

6. Development of a prototype (technical solution) monitoring device for traffic network line in terms of efficiency, continuity and completeness;
7. Testing and improving the electromagnetic compatibility of control command and signalling equipment (CCS) and rolling stock;
8. Optimization of the ultrasonic transducer system for detection of internal defects of railway rails in accordance with PKP Polskie Linie Kolejowe S.A.'s catalogue of defects;
9. Development of an innovative method for determining the precise trajectory of a railway vehicle;
10. Development of innovative methodology/system of lighting infrastructure management on the network managed by PKP Polskie Linie Kolejowe S.A.;

Additionally, one of the directions of the Company's development includes the expansion of the base of elements permitted for use on the network of railway lines managed by PKP Polskie Linie Kolejowe S.A. from the road, automation and telecommunications and energy sectors. In addition, as part of the introduction of new technical solutions, the Company supervises a number of training grounds, where equipment and components from the above industries are subjected to observed use and testing.

Development of freight corridors

Freight corridors operate under Regulation (EU) No. 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight, which defines the rules for their creation, operation and development. On this basis, 11 freight corridors were created, three of which run through Polish territory: Baltic-Adriatic Rail Freight Corridor 5, North Sea - Baltic Rail

Freight Corridor 8 and Amber Rail freight corridor No. 11. Freight corridors are not investment projects. Their main objective is to enhance the competitiveness of international rail freight transport through cooperation between EU rail infrastructure managers, allocation bodies, transport ministries, operators and terminal managers and owners.

The European network of freight corridors is intended to enable rail freight services to be provided under good conditions and to optimise the use of the European rail network. Improving the functioning of the internal rail market, in particular as regards international freight transport, is an essential element of progress towards sustainable mobility. In this respect, actions are and will continue to be implemented, including organisational improvements, among others: harmonisation of requirements and removal of barriers (especially cross-border ones), provision of information to customers and creation of a joint offer of capacity ordered in one place (one-stop-shop for (C-OSS applications). The offer of freight corridors may be used by authorised applicants, i.e. railway operators, international groupings of operators, consignors, freight forwarders or combined transport operators.

The Baltic – Adriatic Rail Freight Corridor 5 connects Polish ports with the ports of the Adriatic Sea. Six countries are cooperating within the corridor: Poland, Czech Republic, Slovakia, Austria, Slovenia, and Italy. The freight corridor No. 8 North Sea–Baltic, which connects east and west of

Europe, is formed by: Belgium, the Netherlands, Germany, Poland, the Czech Republic and Lithuania. Intensive work is under way to extend Corridor No. 8 to Latvia and Estonia. Both corridors were launched at the end of 2015 and there is a European Economic Interest Grouping (EZIG) on each of them.

In 2019, the Amber Rail Freight Corridor No. 11 was launched to connect the industrial and commercial centres of the countries forming the corridor with a common capacity offer for international goods trains. The corridor was included in the European network of freight corridors and complemented the system of freight corridors running through Poland. PKP Polskie Linie Kolejowe S.A. acts as a corridor one-stop-shop (C-OSS).

Enterprise Asset Management System

In 2019, the Company continued the process of preparing the implementation of an IT system for maintenance of railway infrastructure – Enterprise Asset Management. From the infrastructure manager's point of view, the computerisation of railway infrastructure maintenance is cru-

cial as the Company makes significant investments in the infrastructure as part of the National Railway Programme, taking care to maximise its useful life as a result of the largest railway infrastructure modernisation programme in history.

International cooperation

In terms of international cooperation the Company participated in the works of the most important international organisations: the International Union of Railways (UIC), the Organisation for Cooperation of Railways (OSJD), the Association of European Railway Infrastructure Managers and RailNet Europe (RNE), the Community of European Railways and Railway Infrastructure Companies (CER), the General Assembly of the Association of European Railway Infrastructure Managers (EIM), United Nations Economic Commission for Europe (UNECE), Colpofer (the European organisation of railway companies and police forces, established in 1980), and the Platform for European Railway Infrastructure Managers (PRIME).

PKP Polskie Linie Kolejowe S.A. was represented in the statutory bodies of selected international organisations and bodies, including RailNetEurope (RNE), UNECE – Trans-European Railways (TER) project and EIM.

The most important events concerning the Company's activity in international organisations and bodies included, among others, the General Assembly of RNE organised by PKP Polskie Linie Kolejowe S.A. in Warsaw, the High Level Infrastructure Meeting EIM/CER (HLIM), the General Assembly of EIM, the meeting of EIM representatives and the PRIME plenary meeting in Bern. There has also been active bilateral cooperation with rail infrastructure and railway managers from neighbouring countries and other institutions and entities representing the railway sector.

In cooperation with German partners, the most important events include the Polish-German Railway Summit in Wrocław, the Company's Border Conference and DB Netz AG (German Rail Infrastructure Manager) with carriers in Goerlitz and the Round Table of Polskie Linie Kolejowe S.A. and DB Netz AG with freight operators. Within the Infrastructure Group with DB Netz AG, the Company continued to coope-

rate in planning and execution of infrastructure projects in the border area (e.g. electrification of the Węliniec-Zgorzelec-Görlitz section, construction of a railway bridge at the Kostrzyn-Kietz crossing, modernisation and electrification of the Szczecin-Angermünde-Berlin line or launching the ETCS/ERTMS system on Polish-German sections used in border traffic).

In addition, a representative of the Company's Management Board attended a meeting of the Polish-Belarusian ministerial Working Group on Transport in Minsk. A Polish-Belarusian joint working group was also set up to analyse the technical and technological aspects of the construction of a new border railway bridge over the Bug River at the Terepol-Brest border crossing.

In terms of cooperation with the Czech Infrastructure Manager SZDC, the most important event was the Border Conference of PKP Polskie Linie Kolejowe S.A. with rail operators in Olomouc.

In the area of multilateral cooperation, the Company continued to engage in the work of the Visegrad Group's team

of railway experts, the team of 7 railways (Belarus, China, Kazakhstan, Mongolia, Germany, Poland and Russia) for the development of the New Silk Road.

The Representative Office of PKP Polskie Linie Kolejowe S.A. in Belarus (extended to Lithuania, Russia and Ukraine) continued its activity, supporting, among others, key investment projects carried out on the Polish-Belarusian border and activities related to the growing intensity of railway traffic across the border.

International cooperation made it possible to exchange experiences and good practices and the above-mentioned activity allowed to expand the market of contractors for investments conducted and planned by the Company. It has also strengthened the Company's image as a partner open to dialogue and new technologies.

Information Technology

Systems area – railway domain

1. Within the framework of the Maintained and Developed System of Network Description (POS, e-POS) and Application Change of Railway Operating Parameters (ZMIPEL), a register of technical posts was developed and implemented, extended with additional information necessary for the implemented GSM-R system. Mechanisms were developed to calculate the measures of monitoring the multiannual agreement for the implementation of the programme entitled "Assistance in financing the costs of railway infrastructure management, including its maintenance and repair until 2023" in terms of infrastructure quality;
2. In order to comply with the requirements arising from the Railway Transport Act imposing an obligation on the infrastructure manager to draw up and maintain a register of assets together with the costs of infrastructure renewal and modernisation, the Company developed and implemented an IT tool for reporting the elements of railway infrastructure constituting the Company's assets (Register of Assets);
3. As part of the maintained settlement software the Poznań Records of Limitations and Their Settlement System (POSEOR), tools for detailed data verification have been developed, allowing for the analysis of the reasons for speed limits introduced into the system in terms of assigning them to the appropriate category and industry.
4. In the framework of the maintained and developed system of timetable construction system (SKRJ) and the internet train route ordering system (ISZTP), among others: an interface for data transmission for the train compression functionality in the Operating Performance Registration System II (SEPE II), functions dedicated to track closures or functions dedicated to rail substitution. New functionalities have been implemented: on-demand parking, a stop for alighting only and a stop for boarding only. Train length control has been introduced in relation to the lengths permitted on railway lines. In addition, the possibility has been introduced to return the order to make up for the deficiencies of the applicant operator. The SZTP system optimised train movement charts and improved the efficiency of database procedures and implemented additional filters.

5. The following changes to the modules have been developed and implemented as part of the SEPE system that is maintained: Settlement of Accounts for the Access of Railway Undertakings to Railway Infrastructure in the Train Timetable (RJP) for 2019/20 and Quality for the Execution of the Train Timetable for 2019/20 Timetable;
6. Within the maintained and developed applications of the Train Dispatcher Support System (SWDR) and the Internet version of the Operating Performance Registration System (e-SEPE), the module called "E-SEPE" was adapted. "Services" for updated business requirements for ordering by railway undertakings: shunting, depot stops and wagon shunting;
7. As part of the developed system, the Passenger Portal (PDP) (version 3.0.0.31 taking into account the standard of adjustment of the service to the requirements of the Act on Digital Web Accessibility, i.e. to WCAG rules 2.0) the application was extended with further

functionalities such as: stops on demand, stops only for getting off, alight-only stops, train communication functions. Moreover, the Google Maps component has been replaced by the Open Street View component;

8. The new mobile application Passenger Portal version 3.0 (and its subsequent versions) has been published in Google Play and Apple Store in a new graphic design with adaptation to WCAG 3.1 requirements. The previous version of the application called "Rozkład Kolejowy" has been discontinued;
9. Within the maintained and developed Energy Management System (EMS), the following modules were implemented: Traction Network, Outdoor Lighting, eor (electric point heating system);
10. The next stages of the system's development were carried out within the framework of the Railway Line Information System (SILK).

Systems area – business domain

1. A new financial planning system, SAP BPC, was implemented, which improved the planning process, eliminated errors and involved a wider range of business users;
2. A new Procurement Platform (PZ2) was implemented in production to prepare and conduct purchasing procedures;
3. The Company's Electronic Invoice Circulation (EOF) has been integrated with the Electronic Invoicing Platform (PEF) for automatic collection of invoices;
4. A new version of the Norma Pro system for cost estimation of construction works has been implemented.

Significant changes and implementations in the business domain

1. Functional development of the Human Resources Management System – SAP HCM

e-Teczka – implementation of electronic employee documentation and adaptation of the SAP HR system in accordance with the Regulation of the Minister competent for family, labour and social policy of 10 December 2018 on employee documentation (Journal of Laws 2018 item 2369).

2. Functional development of SAP – FI/CO

- a) Split payment – implementation of the solution in the area of sales and adjustment to the requirements of the Regulation in force from 1 November 2019, introduced by the Act of 9 August 2019 amending the Act on Value Added Tax and certain other acts (Journal of Laws of 2019, item 1751);
- b) JPK – (Uniform Control File) – implementation of new JPK structures in SAP ERP according to the provisions of the Act on Value Added Tax (as amended).

Architecture and international cooperation area

1. As part of the TAF/TAP TSI system being developed, the Interface has been updated to the latest version, which has improved the performance and safety of the system. The quality of data sent to the Train Information System (TIS) has been improved;
2. In the scope of the Infrastructure Register System (RINF) being developed, the completeness and quality of PLK's railway infrastructure data submitted to the RINF register was improved. An application has been made to submit applications for the registration of sidings.

Geoinformation

2019 was a time of dynamic development of the Railway Line Information System (SILK) application supporting the Company's employees in the analysis of spatial data related to the railway infrastructure. A number of IT solutions have been implemented to ensure optimisation of the tasks performed and to increase the security of published data. Moreover, several new functionalities of the SILK application have been implemented, thanks to which the employees of PKP Polskie Linie Kolejowe S.A. have been provided with tools supporting searching, displaying and analysing geographical data in the system applications. In order to ensure the safety of published data within the SILK application, solutions have been implemented to ensure full control over the correctness of updates and visualization of data on the interactive map of railway lines (MILK). The introduction of changes has increased the reliability of the presented data and the possibility to control its publication. In addition, solutions have been implemented to ensure that current data on the location of railway and road crossings is provided on an ongoing basis for the emergency number 112 as part of the Company's #PLKY-ellowSticker project.

The Railway Information System is constantly expanding its integration with systems operating within the Company, providing up-to-date spatial data, but also supporting the implementation of key projects outside the Company, such as the Central Transport Port (CPK).

In close cooperation with the Ministry competent for infrastructure, the Ministry competent for investment and the Centre for EU Transport Projects (CUPT), a working workshop was held to present the possibilities of using the MILK application in visualization and analysis of data on investments implemented by the Company. Under the cooperation agreements signed, institutions have been given access to the MILK application together with functionalities enabling them to view and analyse investment data.

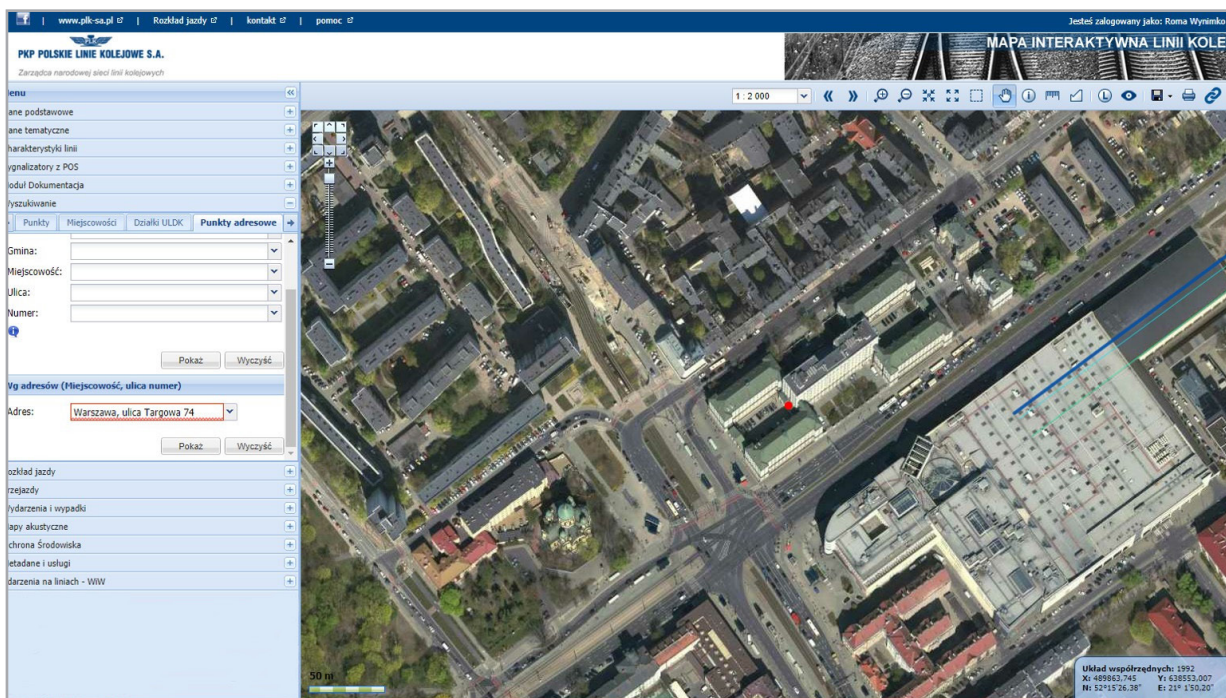
As part of the maintenance and development works of the SILK system, spatial data are constantly updated and their scope is constantly adjusted to the needs received in order to provide reliable data for the purposes of the Register of Railway Infrastructure (RINF) or emergency services.

The following changes have been introduced in the scope of process optimization within the modification of the SILK system:

- solutions have been implemented to optimise the process of updating data placed in the MILK application. The process of updating visualized data by System administrators has been shortened several times. IT solutions have also been provided to update data on demand (ad hoc);
- the process of importing and exporting real estate data within the Real Estate Module application and a number of other changes improving the comfort of using the application has been simplified;
- new administrative tools of the System were provided, thanks to which the process of updating data concerning geographical visualization of the borders of the National Register of Borders (PRG) and organisational units of the Company was optimised. Additionally, IT solutions were implemented to enable continuous use of current PRG data by other systems used in the Company.

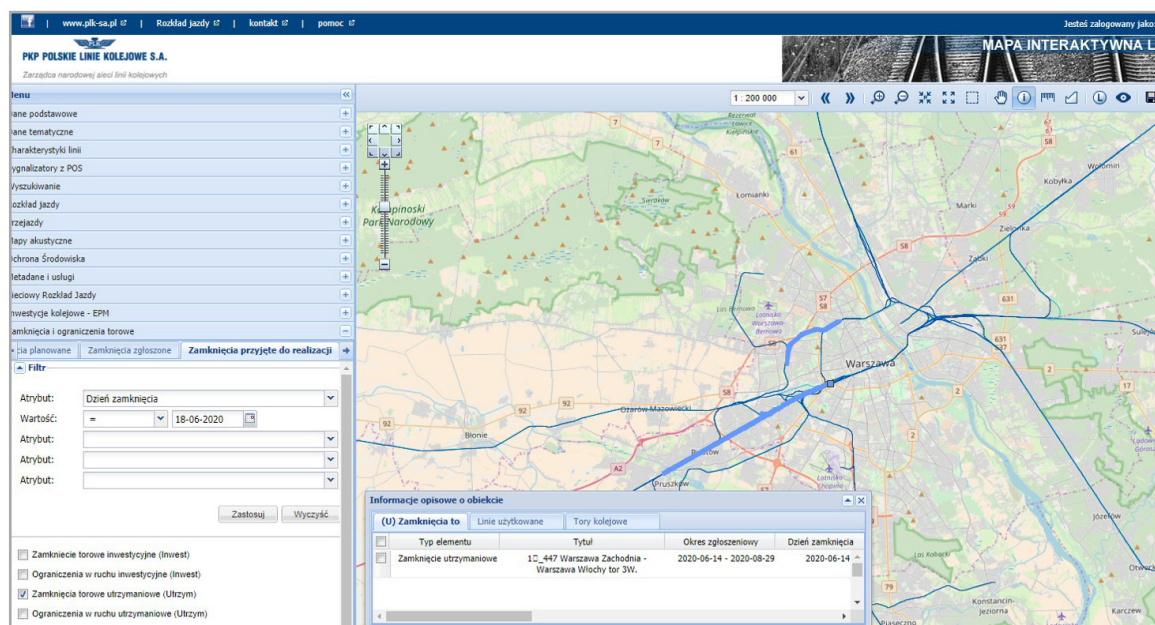
As part of introducing new functionalities of the SILK system:

- a new MILK data search functionality has been provided, enabling address points to be searched in two ways, i.e. by entering a set of six data by administrative division and a search shortened to three parameters;



Visualisation from the SILK System – searching for address data

- a new solution has been introduced, which is to show maintenance track closures on a map. In such a way, operators, using the possibility of data filtering, can perform basic analyses of spatial data in this scope as well.
- the SILK application has been integrated to present geographically the data collected by the central repository of operational documentation (Documentation Module). Through the map, the employees can check the availability of the collected maps, analyse the information contained in them, and directly access the location of the document/map in the data repository from the MILK application level;
- a number of changes were implemented in the application of the Real Estate Module responsible for collecting data on the Company's real property purchased for investment purposes. Using the services of the Geoport system, for which the Surveyor General of Poland is responsible, made it possible to display the location of plots of land on the map where aerial photographs or Open-StreetMap general geographic data are used as a basis for data visualisation;
- new geographical data presenting the railway infrastructure, investment data and environmental data are placed on the MILK map.



Visualisation from the SILK system – track closures

Environmental protection

Environmental issues are an important part of PKP Polskie Linie Kolejowe S.A.'s activity as they affect the date and costs of investment preparation and implementation. This is primarily due to the need to carry out an environmental impact assessment, the performance of which requires the preparation of reliable environmental documentation. The quality of documentation depends on the state of knowledge about the environment – therefore it is necessary to carry out an environmental analysis along the railway line and to assess the impact of the planned investment on the environment before commencing the execution of the investment. In order to obtain a decision on environmental conditions for railway investment projects carried out by PKP Polskie Linie Kolejowe S.A. from the EU perspective 2014-2020, two framework agreements for development of environmental documentation concluded in 2015 and 2018 have been implemented. The total budget of the two agreements amounts to PLN 11,059,400 net.

As part of the execution of framework agreements in 2019, 18 execution agreements worth PLN 2,382,314.32 net were signed.

In 2019, PKP Polskie Linie Kolejowe S.A. obtained 16 decisions on environmental conditions and 2 decisions amending the decision on environmental conditions, as well as 9 decisions specifying the conditions for the investment at the stage of the renewed environmental impact assessment. Obtaining these decisions allowed for further administrative steps to be taken in order to obtain the necessary decisions in the process of investment preparation.

Decisions on environmental conditions may also impose the obligation to perform post-execution analyses or environmental monitoring after the completion of implementation of investment projects and commissioning of railway lines for use. By the end of 2019, the Company was carrying out 45 post-construction analyses and nature monitoring studies covering approximately 900 km of railway lines, of which 38 studies have already been completed, including 29 transferred to the relevant regional environmental protection directorates.

So far, post-construction analyses have indicated the need for implementation:

- acoustic screens – with a total length of about 54 km;
- rail absorbers – on the length from about 64 to 99 km of railway tracks;
- installation of slipways in settling tanks and precast concrete perforated drainage troughs (to protect amphibians).

In addition, in 2019, the Company received 3 decisions on environmental conditions imposing on PKP Polskie Linie Kolejowe S.A. the obligation to implement additional mini-

mising measures resulting from post-construction analyses for completed projects.

It is important to highlight that the most important issue, both at the stage of investments, as well as during daily operation and maintenance of railway lines, is the problem of noise level generated by railway lines. Reconstruction of railway infrastructure, and thus increasing the speed of train traffic and traffic reports, may change the nature of the acoustic impact. There is also an increase in urbanisation of areas located in the immediate and close vicinity of the railway area. The first line of development in many locations across the country, especially in urban areas, has been brought significantly closer to the railway area. Therefore, the company concentrates its activities, among others, on limiting the acoustic impact and vibrations caused by rail vehicles: removal of faults in rails by means of rail tamping, tamping of tracks, rail lubrication, installation of rail absorbers, installation of acoustic screens and use of anti-vibration mats.

In the current analysis of noise from railway lines, as well as in the analysis of environmental documentation, a significant role is played by a specialist research laboratory operating within the Company's structures to carry out measurements of railway noise in the environment, whose competence has been confirmed by the certificate of Polish Centre for Accreditation (PCA). In 2019, the laboratory carried out noise level measurements at 44 different locations throughout the country, not including system measurements (i.e. those carried out as part of an external audit, an audit conducted under the supervision of the PCA, intercalibration and inter-laboratory comparisons), including tests of the effectiveness of rail absorbers.

Noise protection is also about planning the use of areas close to noise sources. Locating acoustically protected buildings in the immediate vicinity of railway lines increases the number of people exposed to excessive noise. Therefore, the Company actively participates in the process of issuing opinions on planning documents, in particular, local spatial development plans and studies of conditions and directions of spatial development of communes in order to reduce the number of residential buildings erected in the close vicinity of railway lines. To this end, a total of approx. 850 planning documents were analysed in 2019.

In 2019, the Company adopted for implementation the "Plan for adaptation of railway infrastructure to climate change", which includes, but is not limited to:

- reducing sources of low emissions by replacing heating equipment in buildings;
- increasing the use of eor (electric points heating system) equipment and SMUE (Electricity Equipment Monitoring System);

- improving the energy efficiency of eor equipment (research project);
- managing greenery in the vicinity of railway lines that threatens the safety of railway traffic.

The implementation of the tasks is planned until 2030 with the possibility of updating every 5 years. In addition, in 2019, the Company implemented the “Guidelines on how to include climate issues in environmental documentation”, which are a set of methodological and executive guidelines enabling appropriate inclusion of climate change and biodiversity issues in environmental impact assessment. The purpose of the guidelines is to facilitate the implementation of a comprehensive and effective assessment of the impact of individual projects of PKP Polskie Linie Kolejowe S.A. on the climate and biodiversity, as well as the analysis of the projects’ resilience to climate change and the ability to cope with extreme events.

Moreover, since 2019, PKP Polskie Linie Kolejowe S.A. together with the National Centre for Research and Development (NCBiR) has been looking for new solutions and equipment to protect people and buildings from noise and vibrations caused by railway operation. The joint venture under the name: “BRIK – Research and Development in Railway Infrastructure” will allow the development of effective vibroacoustic solutions other than standard acoustic screens. Implementation of innovative solutions in the future will result in minimising the nuisance from the sound source as well as reducing the impact of the equipment used on the natural landscape.

As part of the project entitled: “New solutions to protect people and the environment from noise”, among others, prototypes of track and rail silencers have been made so far and laboratory tests have been carried out on the effectiveness of noise reduction.

Additionally, within the project entitled “New solutions to protect people and the environment from vibrations” the following works were carried out:

- the static and dynamic characteristics of anti-vibration mounts parameters were determined for subsequent batches of materials for the following products: USP pads, UBM mats, under-slab mats (USM), under-block mats (UBP) and elastic EBS embedding and pouring compounds.
- environmental resistance tests have been carried out for the following products: USP pads and UBM mats;
- a testing station for impulse method testing of structural sections of the superstructure in a gravel pit was built and launched.

The project has determined, among other things, the characteristic parameters of the materials from which the selected prototypes were made and carried out tests of strength and resistance to environmental conditions of some of them. Additionally, a test stand for laboratory tests of prepared prototypes was launched.



Investments

General information

The investment activity of PKP Polskie Linie Kolejowe S.A. as the manager of the national railway network is aimed at improving the availability, efficiency and performance of the Polish transport system through the realisation of an extensive investment programme including modernisation of numerous railway lines.

In 2019, the Company continued the implementation of investment projects included in the National Railway Programme until 2023 (KPK). The programme was adopted in September 2015, and its update was adopted in September 2019 by Council of Ministers Resolution No. 110/2019 of 17 September 2019.

The main objective of the KPK is to strengthen the role of rail transport in the country's integrated transport system by creating a cohesive and modern railway network, which stems directly from the provisions of the "Strategy for Sustainable Transport Development until 2030" in terms of rail transport.

The KPK assumes the maximum use of EU funds to finance projects within the scope of: Operational Programme Infrastructure & Environment (OPI&E) for the years 2014-2020, Connecting Europe Facility (CEF), Operational Programme Eastern Poland (OP EP) for the years 2014-2020, and the Regional Operational Programmes (ROP-S) for the years 2014-2020.

The value of the KPK programme for the years 2014-2023 in terms of the basic list is PLN 75.7 billion⁵. Among the

largest projects (with outlays exceeding PLN 2 billion) implemented under the KPK's basic list are:

1. works on railway line C-E 65 on the Chorzów Batory – Tarnowskie Góry – Karsznice – Inowrocław – Bydgoszcz – Maksymilianowo section;
2. works on railway line No. 7 Warszawa Wschodnia Osobowa – Dorohusk on the Warszawa – Otwock – Dęblin – Lublin section;
3. works on the E 75 line on the Czyżew – Białystok section;
4. works on the E 59 railway line on the Poznań Główny-Szczecin Dąbie section;
5. construction of the ERTMS/GSM-R system infrastructure on railway lines of PKP Polskie Linie Kolejowe S.A. within the framework of ERTMS NPW;
6. works on the E 20 railway line on the Warszawa – Poznań section – other works, the Sochaczew – Swarzędz section.

⁵ Implementing document to the National Railway Programme until 2023 adopted by Resolution No. 110/2019 of the Council of Ministers of 17 September 2019 amending the resolution on establishing the KPK.

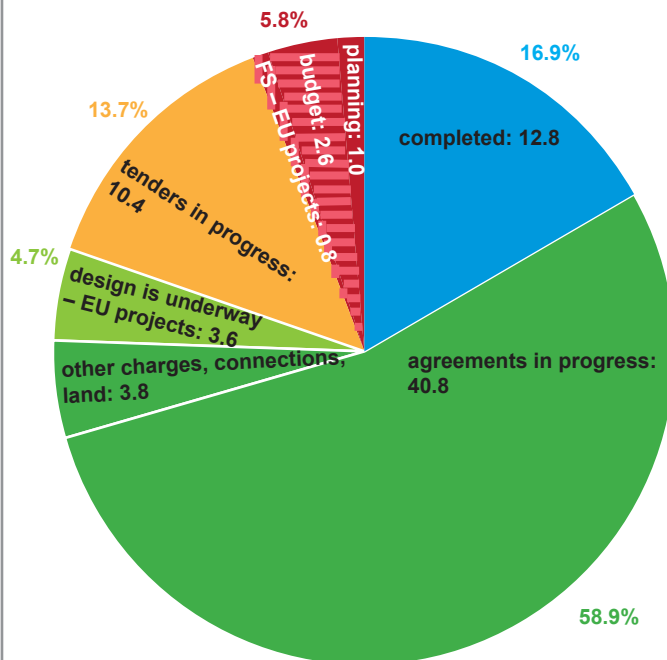
Implementation of the National Railway Programme

In 2019, the Company implemented investment projects throughout the country on the basis of agreements concluded with contractors. Activities related to the comprehensive monitoring of all projects on the KPK core list continued to be carried out, in particular in the scope of key issues

such as: execution of works on construction sites, forecast execution of outlays, public procurement procedures, timely execution of milestones and project schedules.

Status of KPK implementation as at 31 December 2019

IN TOTAL: PLN 75.7 billion



Completed – value of completed agreements

Agreements in progress – value of signed agreements

Other fees and connections – value of expenditure carried out on an ongoing basis on projects without the need to conduct contract award procedures

Tenders in progress – value of ongoing tender procedures (estimated net value of contracts)

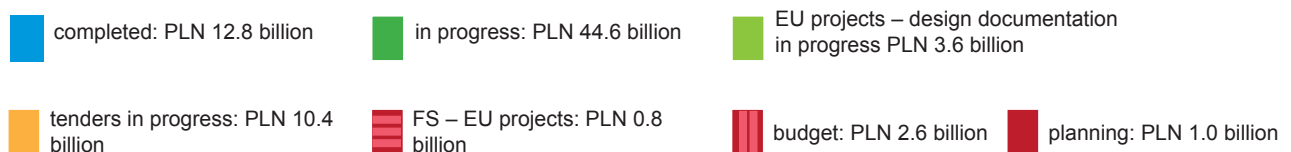
EU projects in progress project documentation – value of planned to announce tender procedures for construction works for which project documentation is being prepared

EU projects – value for which feasibility studies are being prepared

Planned – agreements before the announcement of the contract award procedure

Budget – value of Feasibility Studies (FS) agreements planned for implementation in subsequent years in accordance with the budget limits for individual years until the end of the implementation of the KPK.

The list comprises the order values for the projects included in the KPK to the limit of the provided financing in the KPK basic list.



At the end of the sixth year of the current EU perspective, out of the global amount of the KPK programme PLN 75.7 billion, almost 76% (of the total KPK value) were in progress (in different advancement levels) or were completed.

In the period from January to December 2019, PKP Polskie Linie Kolejowe S.A. signed contracts worth approximately PLN 15.1 billion net.

Largest agreements signed in 2019 (PLN million)

No.	Project Name	Name of the programme	Net value of the contract with the contractor
1.	The improvement of railway access to sea ports in Gdynia	CEF 14-20	1,487.41
2.	Work on primary passenger lines (E 30 and E 65) within the Śląskie Voivodship, stage I: LOT C	CEF 14-20	1,399.75
3.	Works on railway line C-E 65, section Chorzów Batory – Tarnowskie Góry – Karsznice – Inowrocław – Bydgoszcz – Maksymilianowo (works on railway lines Nos. 131, 686, 687, 704 on section Kalina – Rusiec Łódzki)	The Operational Programme Infrastructure and Environment 14-20	1,238.36
4.	Improvement of railway access to sea ports in Szczecin and Świnoujście (at Szczecin Central Port station – Task 1)	CEF 14-20	936.59
5.	Improvement of the railway infrastructure for access to the Port of Gdańsk (works on line 226 and the Gdańsk Port Północny station and line 965 and the Gdańsk Kanał Kaszubski station)	CEF 14-20	758.04
6.	Works on railway line No. 7 Warszawa Wschodnia Osobowa - Dorohusk on the Otwock - Dęblin - Lublin section, stage I (on the Nałęczów – Lublin section)	The Operational Programme Infrastructure and Environment 14-20	627.70
7.	Works on railway line No. 7 Warszawa Wschodnia Osobowa - Dorohusk on the Otwock - Dęblin - Lublin section, stage I (on the Dęblin – Nałęczów section)	The Operational Programme Infrastructure and Environment 14-20	616.42
8.	Works on the E59 railway line on the Poznań Główny – Szczecin Dąbie section (the Stargard – Szczecin Dąbie SDA section)	CEF 14-20	588.04
9.	Works on railway line C-E 65, section Chorzów Batory – Tarnowskie Góry – Karsznice – Inowrocław – Bydgoszcz – Maksymilianowo (works on railway lines Nos. 131, 542, 739 on the Rusiec Łódzki – Zduńska Wola Karsznice section)	The Operational Programme Infrastructure and Environment 14-20	582.72
10.	Improvement of railway access to sea ports in Szczecin and Świnoujście (at the Świnoujście station – Task 2)	CEF 14-20	508.05

The vast majority of contracts signed in 2019 were construction works contracts – almost 97%.

At the same time, more than 87% were agreements for programmes implemented with EU funds from the 2014-2020 perspective CEF, OPI&E 14-20, OP EP, ROP 14-20).

Agreements signed in 2019 broken down by programmes and types (PLN million)

	Budget	CEF 14-20	OP EP 14-20	The Operational Programme Infrastructure and Environment 14-20	ROP 14-20	In total
Supplies	0.0	0.0	0.0	12.3	0.0	12.3
Construction works	1,628.2	7,236.8	8.8	3,976.4	1,787.0	14,637.2
Services	252.2	79.4	0.1	72.3	49.5	453.5
In total	1,880.4	7,316.2	8.9	4,061.0	1,836.5	15,103.0

Investments in 2019

The basis for the investment activity carried out by PKP Polskie Linie Kolejowe in 2019, as in previous years, was the Company's Investment Plan (PI 2019) which assumed the implementation of projects financed using funds from the Cohesion Fund, the state budget, the Railway Fund and the Company's own resources.

PI 2019 as an element of the Company's Operation Plan was adopted by the Management Board of PKP Polskie Linie Kolejowe S.A. by Resolution No. 105/2019 of 19 February 2019. The most important group in PI 2019 were projects financed by CEF and OPI&E programmes. Within the PI 2019, over 220 investment projects were accepted for implementation, and its execution in 2019 amounted to approx. PLN 10.0 billion.

The largest capital expenditures were incurred for:

- works on railway line No. 7 Warszawa Wschodnia Osobowa – Dorohusk on the Otwock – Dęblin – Lublin section, stage I (PLN 1,332.3 million);
- works on the E59 railway line between Poznań Główny – Szczecin Dąbie (PLN 466.7 million);
- works on the E20 railway line on the Warszawa – Poznań section – other works, the Sochaczew – Swarzędz section (PLN 411.8 million);
- works on the E59 railway line on the Wrocław – Poznań section, stage IV, the Lower Silesia province border – Czempień – (PLN 404.9 million);
- modernisation of railway line E 30, Zabrze – Katowice – Kraków section, stage IIb (PLN 374.8 million);
- works on the E 30 railway line on the Kraków Główny Towarowy – Rudzice section and the addition of the agglomeration line tracks (PLN 279.1 million);
- construction of the ERTMS/GSM-R system infrastructure on railway lines of PKP Polskie Linie Kolejowe S.A. within NPW ERTMS (PLN 259.4 million);
- improving the railway infrastructure for access to the Port of Gdańsk (PLN 250.1 million);
- works on the E 20 railway line on the Warszawa – Poznań section – other works, the Sochaczew – Swarzędz section – the LCS Konin area (PLN 244.9 million);
- the improvement of railway access to sea ports in Szczecin and Świnoujście (PLN 244.4 million).

Investment outlays in material terms

The scope of individual investment projects carried out by PKP Polskie Linie Kolejowe S.A. includes comprehensive replacement of railway superstructure, railway traffic control and power engineering equipment (traction and non-traction), as well as modernisation of level crossings and their liquidation and replacement by two-level crossings. Replacement of old, worn out and degraded elements of railway infrastructure and technical equipment with new ones, made with the use of modern technologies, allows for a significant

improvement in the operational parameters of railway lines (mainly maximum permissible speeds) while maintaining and increasing the level of traffic safety.

As part of the implementation of IP 2019 on the railway network managed by PKP Polskie Linie Kolejowe S.A., investment works were carried out, including in particular the modernisation, revitalisation or construction of 1,942 km of tracks, 704 level crossings, as well as 143 railway and road viaducts were built or modernised.

Implementation of selected material indicators in 2019

No.	Rate	Unit of measure	Plan	Implementation
1.	Modernisation of railway track (including: repair of a railway surface, track bed, OC rails)	km of tracks	1,417.06	1,942.47
2.	Construction of turnouts	pcs.	1,190	1,224
3.	Engineering structures, including:	pcs.	1,148	1,213
	3.1. Bridges	pcs.	168	156
	3.2. Viaducts	pcs.	126	143
	3.3. Culverts	pcs.	854	914
4.	Platforms	pcs.	302	321
5.	Traction network	tkm	1,250.57	1,184.63
6.	Level crossings	pcs.	817	704

Threats, risks and actions taken

In 2019, investment projects were carried out throughout the country. Intensification of work and the need to coordinate many contracts at the same time required efficient project management – not only from the point of view of monitoring the physical and financial progress of investment projects, but above all from the point of view of the ability to operate trains while modernising railway lines.

Many of the identified and monitored hazards in 2019 are events typical for the implementation of investment projects. The most significant risk areas which affected the course of project implementation in 2019 are:

1. Administrative proceedings and decision making processes – extending the administrative decision making procedure

The high level of complexity of railway infrastructure projects and their unique nature makes it necessary to obtain a large number of administrative decisions to implement the project. The possibility of meeting the deadlines set in the project schedules was burdened with risk, in particular by the occurrence of discrepancies in the interpretation of regulations by administrative bodies and the failure to meet the deadlines for issuing decisions by the authorities. In 2019, PKP Polskie Linie Kolejowe S.A. intensified its ongoing cooperation with the authorities issuing individual decisions.

2. Delays in tender procedures – submission of bids above the amount that the employer intended to use to finance the contract, problems in obtaining a performance bond by the contractors

Delays in investment schedules at the stage of tender procedures were mainly due to the changing market situation, in particular the increase in prices of construction materials and works. This resulted in the submission of bids in proceedings whose prices significantly exceeded the amount that the Company intended to use to finance the contract. At that time, it was necessary to cancel such tendering procedures, re-launch them or seek additional funding. Moreover, in 2019, contractors reported problems with obtaining a guarantee to secure the proper performance of the contract, which significantly contributed to the extension of the tender procedure.

3. The issue of insufficient human and equipment capacity of contractors and limited availability of subcontractors

In 2019, it was particularly important for the contractors to meet the contractual conditions for ensuring human and equipment capacity to carry out the tasks. Undertaking track closures without maximum mobilisation of the contractor's potential posed a risk of prolonging the works, and thus the track closures, which in turn has a significant impact on the timetable planning process. In order to minimise the risks in this respect, the identified hazards were monitored and

the progress of the works on the ground was continuously monitored.

4. Low quality of design documentation developed by contractors

The quality of prepared studies and design documentation has a significant impact on the stage of investment execution. Errors and shortcomings in the studies are the cause of the contractor's claims and the reason for delays in administrative proceedings related to obtaining administrative decisions necessary to implement the investment. The poor quality of documentation determines in some cases the need for alternative design solutions or their modification and additional works. In addition, the commencement or continuation of construction work on the site is often dependent on the need to correct errors that have occurred at the design stage.

In order to minimise the risk of errors and deficiencies in the design documentation, the Company took care of the personnel potential, and the contractors cooperated with the Project Engineer and project architect's supervision on an ongoing basis.

5. Issues relating to ensuring the proper organisation of construction work at the interfaces between different investments by one or more contractors

The large number of investment projects carried out at the same time affects the problems arising with ensuring proper organisation of construction works (coordination of track closures, delivery of materials to construction sites, collisions with unlisted foreign infrastructure) at the interface between investments carried out by one or different contractors in a given area.

The scale of the investment work is reducing the capacity of the railway network. In this context, track closures on lines in the vicinity of works already underway may affect the ability of trains to run and thus the time of transporting goods by rail and unloading them on the site. In addition, despite due diligence, during the preparation of the design documentation, situations of unforeseen collisions of the implemented elements with unlisted networks or objects occur. This applies in particular to investments in highly urbanised areas.

In most cases, it is necessary to temporarily suspend construction work, with the consequent failure to meet the original deadlines set in the project schedule and the need for additional work. Depending on the scope of discrepancies with the design, additional costs are incurred in order to carry out the necessary research, changes are introduced in technical solutions or modified technology of works. In order to minimise the above mentioned threat, PKP Polskie Linie Kolejowe S.A. cooperated closely with stakeholders at the

stage of preparation and implementation of the investment and effectively coordinated and supervised their work.

6. Contractors' financial standing

The scale of the investments being carried out and the potential of contractors and design companies operating on the Polish market mean that a significant proportion of contractors carrying out railway infrastructure projects require the involvement of many entities as subcontractors. The Company has noticed cases of delays in the execution of contracts in relation to the financial standing of contractors, manifested by lengthened procedures for obtaining bank guarantees or timely payment of liabilities towards subcontractors. The financial standing of contractors translates into insufficient involvement of staff and equipment capacity, thus affecting the possibility of using the full front line of the works and carrying out the work according to the adopted schedule.

The limited involvement of the capacity of contractors in the implementation of works covered by the planned track closures has a direct impact on prolonged difficulties for railway users. Whereas railway investments are complex and long-term projects which require the involvement of contractors and sub-contractors from a wide range of industries and have taken measures to support the liquidity of the contractors. In order to meet this requirement, PKP Polskie Linie Kolejowe S.A. makes accelerated payments

at the request of contractors, enables the anticipatory purchase of construction materials, and provides the possibility of creating a security for the proper performance of the contract by deductions from invoices issued by contractors. At the same time, the Company safeguards the interests of subcontractors, which is reflected in the instruction for subcontractors in public works contracts published in 2019, containing information on the contracting authority's responsibility to pay remuneration to subcontractors in a situation where the contractor fails to comply with this obligation and containing guidelines on the procedure for approving and reporting subcontracts. The actions taken have a positive impact on the implementation of investment projects.

Measures to streamline the investment process

1. Dialogue with the contractors' market

In order to increase the effectiveness of the investment process, in 2019, the dialogue with representatives of contractors was continued as part of cyclical meetings of the Investment Forum Working Groups and the Council of Experts, aimed at eliminating problems affecting the timely completion of railway investments and working out a joint agreement related to the provisions of agreements. During the investment meetings, issues related to securing the interests of subcontractors, improving the entries in the base documents and geodetic issues in railway investments were discussed. The main issues discussed with contractors in 2019 were related to:

- a) indexation of contracts;
- b) risk matrix in the "design and build" system.

Indexation

PKP Polskie Linie Kolejowe S.A., in cooperation with the General Directorate for National Roads and Motorways, implemented the indexation of new contracts, based on a basket of price indices published monthly by the Central Statistical Office (GUS).

Introduced from 1 February 2019, after prior discussion within the Board of Experts, the monthly adjustment of new contracts is settled on the basis of the construction work actually carried out, together with an interim payment certificate issued. The value of indexation is calculated according to a formula based on FIDIC standards, on the basis of objective macroeconomic indicators published by the Central Statistical Office (GUS) and an established indexation basket, which consists of the most important pricing elements of railway investments such as: labour costs, fuel price and prices of construction materials (including, among others: copper, steel, aggregates and cement). Indexation is a limited amount equivalent to 5% of the value of works indicated in the contract on the date of its conclusion. Similar indexation rules also apply to subcontracting contracts.

Risk matrix

PKP Polskie Linie Kolejowe S.A., in cooperation with members of the Investment Forum, has developed a risk matrix to be used in the investment process.

It was considered that this document, once it has been properly implemented in the contracts used by the contracting

authority, will be a kind of signpost for all participants in the investment process. This will allow the contractor to know what risks he should calculate in the price and then how to manage them. The risk matrix is a compromise in terms of sharing risks in the investment process. A number of currently applied provisions of the agreement and the functional and utility programme prepared as so-called base documents reflect the risks listed in the developed risk matrix. In the description of the subject matter of the contract for the Engineer, a requirement was introduced to consider the contractor's claims with the auxiliary application of the risk matrix. Work is in progress on the implementation of the provisions of the matrix to the basic model contract for design and construction works. This work is carried out together with the contractors who are participants in the Investment Forum.

2. Performance bonds for services and supplies

PKP Polskie Linie Kolejowe S.A. has introduced provisions in the procedures for services and supplies concerning the level of required performance bond, analogous to those applicable to contracts covering the scope of works.

3. Participation in the works on the development of the new Public Procurement Law (PZP)

In 2019, using its experience in conducting large-scale tender procedures, the Company actively participated in work on the development of a new PZP. The Company's representatives have been giving their opinions on the content of this Act and have taken part in working groups and meetings organised by the Public Procurement Office or the Ministry competent for entrepreneurship as part of consultations on the draft PZP-Act.

4. Work of the High Level Group (HLG) on Railway Investments

In 2019, the High Level Group (HLG), established in 2016, continued its work, which included representatives of the European Commission (EC), the Ministry competent for investment, the Ministry competent for infrastructure, the Centre for EU Transport Projects (CUPT) and PKP Polskie Linie Kolejowe S.A. In 2019, the main discussion was about the stage of implementation of the KPK, as well as the difficulties in securing project financing. The issues of simplifying procedures and regulations and taking remedial action were also raised.

5. Streamlining of project management and monitoring

After analysing the current use of video surveillance of the investment with the use of modern technologies during the ongoing control of the progress of investment works, the Company decided to continue its video monitoring activities in 2019.

The tools with which the investment works were monitored were:

- regular helicopter inspection flights allowing to obtain the filmed documentation from long railway lines in a short period of time (2 days), on which a risk of completion deadline was identified, and which were used to talk to contractors about taking corrective actions to mitigate the delays; In 2019, such an inspection was carried out on sections of railway lines with a total length of approximately 2,000 km;
- unmanned Aerial Vehicle (drones) raids. Thanks to cyclic bypasses, video materials and photogrammetric data (digital aerial photographs, orthophotograph) were obtained, which were used to prepare a report on the progress of construction works and analyses consisting in measuring the volume of aggregates or earth masses on a given section of the railway line;
- camera points providing a permanent on-line view of the railway investment areas indicated by the Company and allowing for photographic documentation at a 10-minute interval have been installed in 62 locations covering the construction of engineering structures on railway lines (tunnels, footbridges, bridges, viaducts).

Helicopter flights and drones were used to monitor key investments on railway lines.

Additionally, in 2019, field monitoring was continued on the construction sites of the most important investments. The monitoring teams carried out 125 monitoring visits in total, focusing their attention on projects with the largest outlays planned for 2019 and on single-track lines.

In 2019, PKP Polskie Linie Kolejowe S.A. continued work on improving and optimising the system used for project request (EPM).

In 2019 the monitoring of individual projects included in the KPK and the entire document was carried out in the form of a KPK programme status table. It contains all the projects in the KPK with a breakdown into individual contracts and information on, among others, tender procedures, contracts, material and financial progress and milestones. The report is prepared monthly and submitted to the Ministry competent for infrastructure, Ministry competent for investment and CUPT.

Sources of financing

In 2019, the Company applied for EU funds under the Operational Programme Infrastructure and Environment 2014-2020 (OPI&E). There were 3 applications. The total value of

applications amounted to PLN 1,427,489 thousand, including the value of co-financing from the Cohesion Fund (CF) – PLN 1,114,649 thousand.

List of submitted SAs within the framework of the OPI&E 2014-2020 (PLN thousand)

No.	Project Name	Date of application	Total net project value with the SA	Value of ERDF co-funding in accordance with the SA
1.	Improvement of the technical condition of the passenger service infrastructure (including adaptation to the requirements of the PRM TSI), Stage IV - passenger infrastructure on lines revitalised under OPI&E 2007-2013	2019-06-28	106,531	89,816
2.	Works on the railway lines No. 97, 98, 99 on the Skawina – Sucha Beskidzka – Chabówka – Zakopane section	2019-08-05	1,296,196	1,004,616
3.	Works on railway line 8 on the Skarżysko Kamienna – Kielce – Kozłów section – preparatory work	2019-12-05	24,761	20,217
In total			1,427,489	1,114,649

Funding agreement (FA)

In 2019, PKP Polskie Linie Kolejowe S.A. concluded with the Centre for EU Transport Projects (CUPT) 4 agreements for co-funding within the framework of the OPI&E 2014-

2020 for a total net amount of PLN 2,265,364 thousand, of which the EU funds amounted to PLN 1,630,008 thousand – according to the table below.

Signed co-financing agreements within the framework of the OPI&E 2014-2020 (PLN thousand)

No.	Project Name	Date of signing the funding agreement	Total net value	Net eligible costs	Funding in the funding agreement	EU funding
1.	Work on the railway line No. 93 on the Trzebinia – Oświęcim – Czechowice Dziedzice section	2019-03-26	818,079	817,417	807,669	686,519
2.	Design, supply and installation of the components of the dynamic passenger information system and the video surveillance system, including the technical infrastructure at railway stations and railway stops	2019-03-26	171,970	171,775	171,775	146,008
3.	Works on the railway lines No. 97, 98, 99 on the Skawina – Sucha Beskidzka – Chabówka – Zakopane section	2019-11-22	1,178,390	1,178,057	842,153	715,830
4.	Improvement of the technical condition of the passenger service infrastructure (including adaptation to the requirements of the PRM TSI), Stage IV – passenger infrastructure on lines revitalised under OPI&E 2007-2013	2019-12-20	96,925	96,060	96,060	81,651
In total:			2,265,364	2,263,309	1,917,657	1,630,008

At the end of 2019, the Company had contracted EU funds for 68 projects, as follows, distinguishing between different EU aid programmes:

1. OPI&E – 37 projects for the total EU allocation – PLN 15,935,102 thousand;
2. Operational Programme Eastern Poland (OP EP) – 9 projects for the total EU allocation – PLN 1,536,578 thousand;
3. “Connecting Europe Facility” (CEF) – 22 projects for a total EU allocation – EUR 3,174,673 thousand.

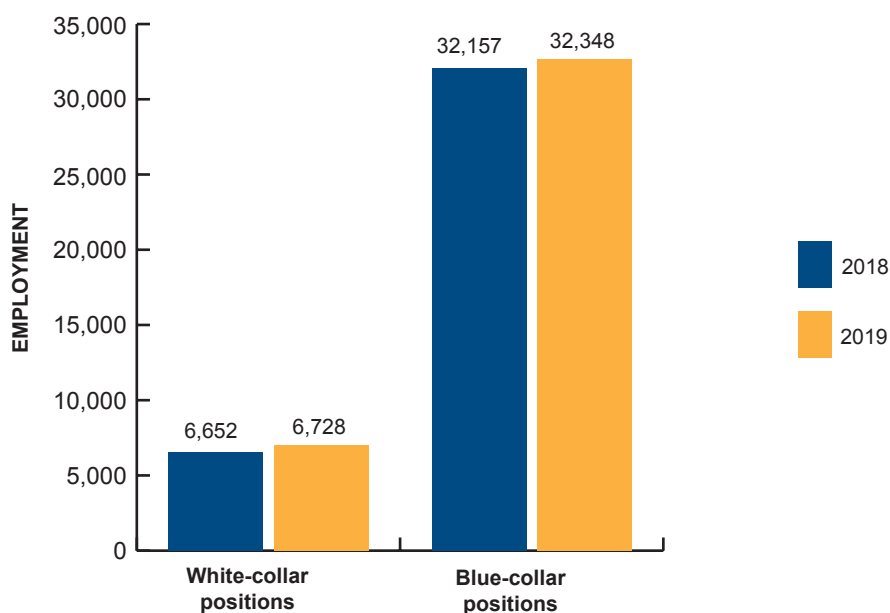
Human Resources

Employment analysis

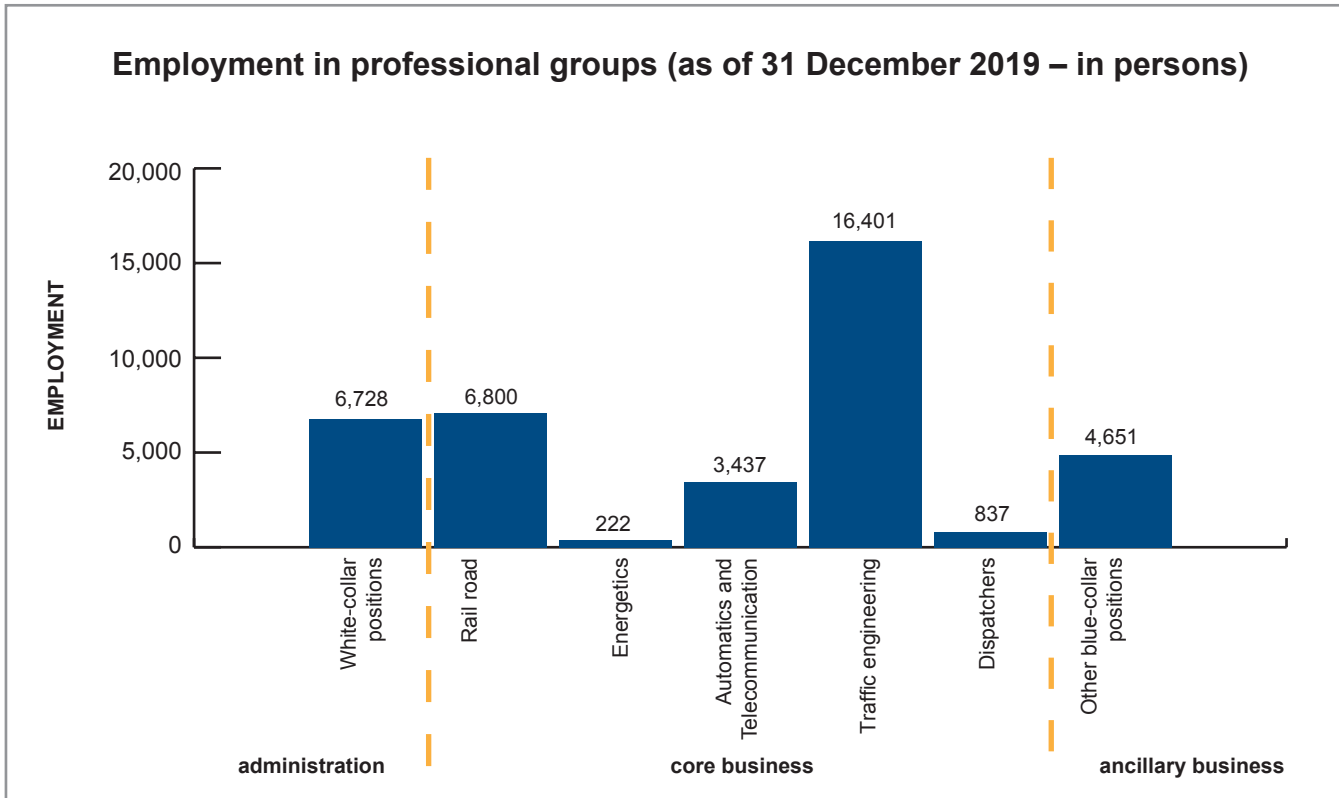
As of 31 December 2019, the employment level at PKP Polskie Linie Kolejowe S.A. amounted to 39,076 people and increased by 267 (0.69%) compared to 31 December 2018. As regards the blue-collar positions, the employment level increased from 32,157 employees (number of employees as of 31 December 2018) to 32,348 employees (number of employees as of 31 December 2019), i.e. the employment level went up by 191 people (0.49%). The reason for the increase in the level of employment in the working positions was the inclusion in the Company's structures of employees of

PKP Telkol Sp. z o.o. As regards the white-collar positions, the employment level increased from 6,652 employees (number of employees as of 31 December 2018) to 6,728 employees (number of employees as of 31 December 2019), i.e. the employment level went up by 76 people (0.20%). The increase in the level of employment in white-collar positions results, among other things, from the strengthening of investment teams.

Employment in professional groups (as of 31 December 2019 – in persons)



Employment in professional groups (as of 31 December 2019 – in persons)

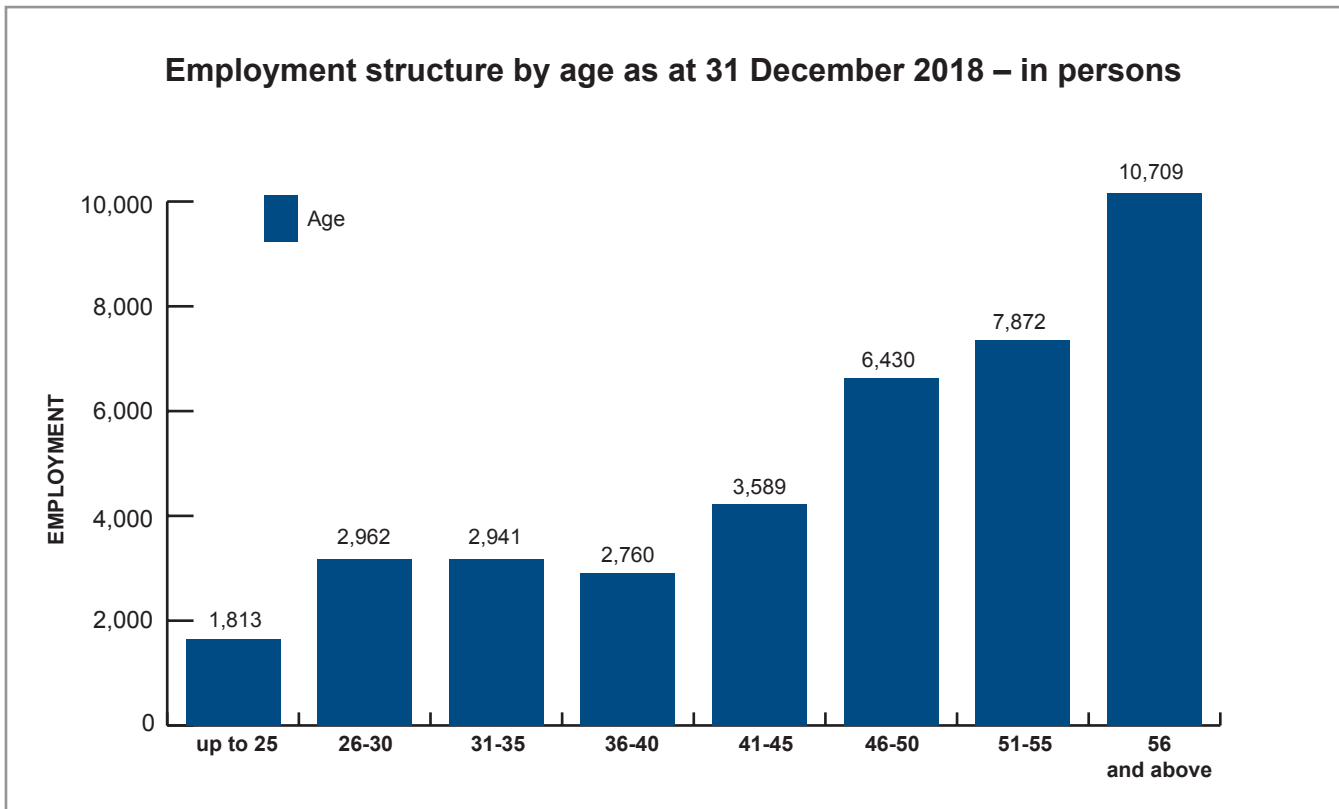


The employees aged 26-50, i.e. who are people in the period of their most intensive professional activity, are the largest group in the Company. In 2019, they comprised 47.81% of the entire workforce (18,682 employees). In relation to 2018, the employment in this group decreased by 188 employees, i.e. by 0.81%. The employees aged 25 and

less comprised 4.64% of the entire workforce in 2019 (1,813 employees).

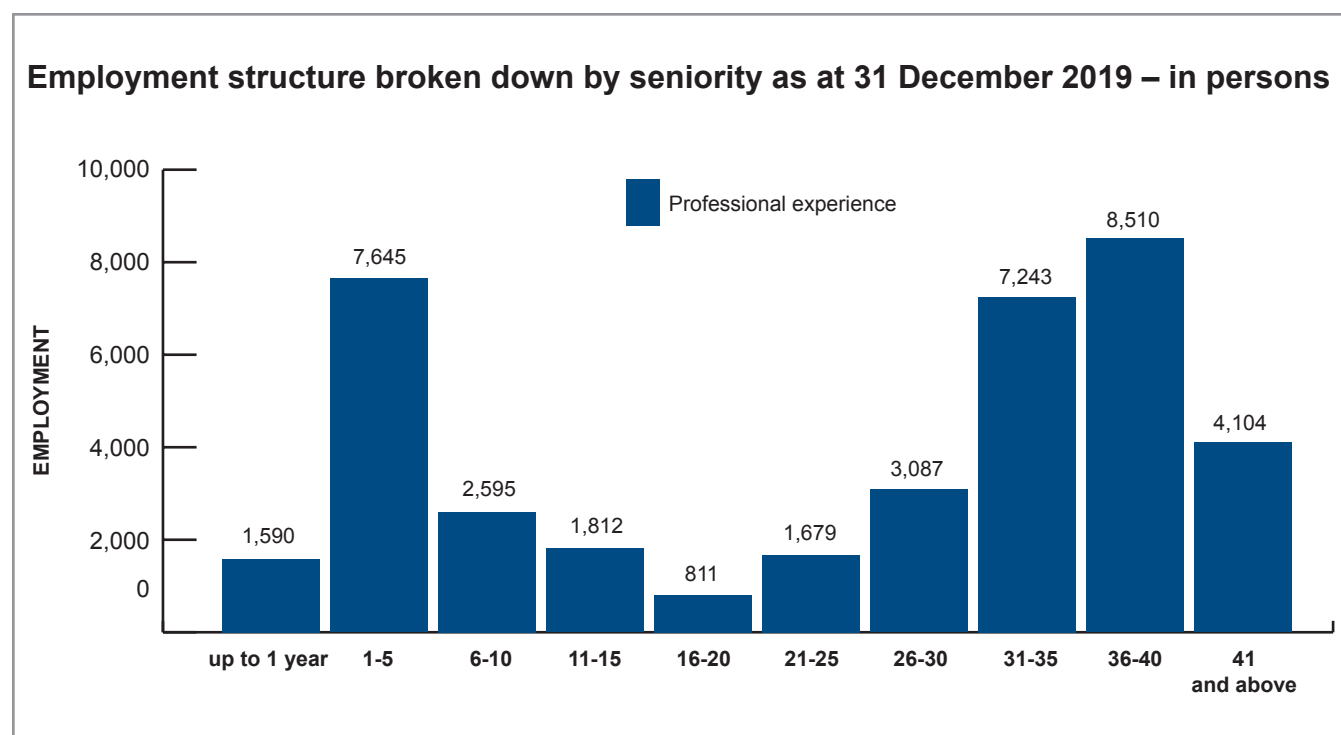
Compared to 2018, the employment in this group decreased by 26 employees, i.e. by 0.10%. In 2019, employees aged 51 and more comprised 47.55% of the entire staff (18,581 employees). In this group, the employment level grew by 481 employees in comparison to 2018, i.e. by 0.91%.

Employment structure by age as at 31 December 2018 – in persons



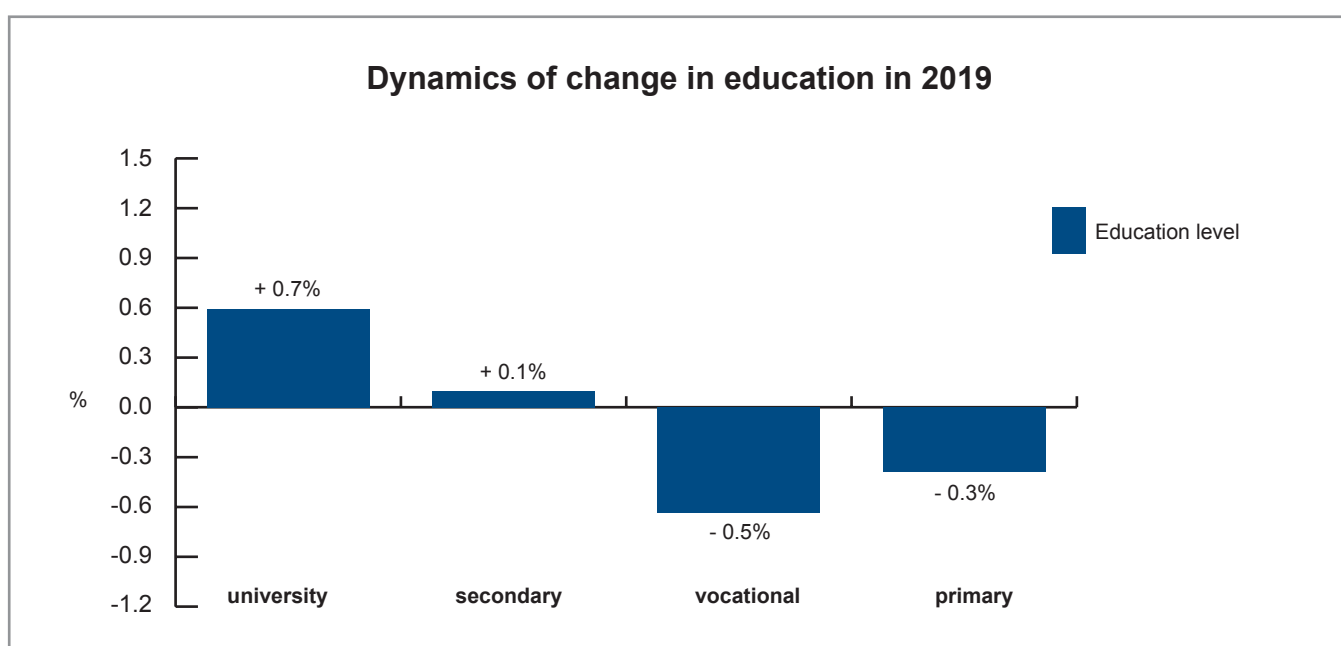
Employees with up to 10 years of seniority comprised 30.27% of the staff (11,830 persons) – this group recorded an increase by 981 employees, i.e. by 2.32% (compared to 31 December 2018). Employees with 11 to 20 years of seniority comprised 6.72% of the entire staff (2,623 persons), which means an increase by 275 employees, i.e. by 0.67% (compared to 31 December 2018).

In 2019, the most numerous group at the Company were employees with more than 21 years of seniority, who comprised 63.01% of the total number of employees (24,623 persons). In comparison to 31 December 2018, this group recorded a decrease by 989 employees, i.e. by 2.99%.



The employment structure at PKP Polskie Linie Kolejowe S.A. is systematically improving due to education. In 2019, the share of employees with higher education increased by 0.7% in relation to 2018, while the number of people with

basic vocational and primary education decreased. This results from a conscious employment policy which aims at recruiting highly-qualified employees and implementing education system by the Company.



Staff development

One of the most important aspects of raising the qualifications of employees is the fact that the Company offers a wide range of development opportunities, i.e. it refers employees to training, specialist professional courses, conferences, as well as refunding the costs of higher and post-graduate studies and foreign language learning. In 2019, the Company allocated over PLN 12 million for improving the qualifications of its employees, including training and further education of nearly 15,500 participants (one employee may participate in several training sessions).

PKP Polskie Linie Kolejowe S.A. has been cooperating with the Association of Railway Employers for many years in the field of postgraduate studies, in particular MBA studies, conducted by the Gdańsk Foundation for the Training of Managers.

Moreover, in 2019, the Company, in cooperation with the Gdańsk Foundation for Managerial Education and CS Natura Tour Sp. z o.o., launched the second edition of post-graduate studies in human resources management.

An important group of employees, to whom specially prepared training cycles are directed, are employees of teams implementing investments and departments preparing and supporting these activities. In 2019, 530 employees of these teams benefited from specialist training.

PKP Polskie Linie Kolejowe S.A. also takes care of acquiring qualified staff by investing in the education of future railroad

men. The company currently cooperates with 43 secondary schools across the country, which educate young people in railway, i.e.:

- Railway Transport Technician;
- Rail Transport Power Engineering Technician;
- Railway Construction Technician;
- Automatic Control and Signalling Technician.

As part of its cooperation, the Company refunds scholarships for the most talented students, which, in 2019, received 243 scholarship recipients. All students have the opportunity to do their apprenticeships and internships on the premises of the Railway Lines Plants and can improve their knowledge and skills, among others, on a modern simulator of control-command and signalling equipment. The Company assists schools in setting up their teaching facilities and also directs its experienced staff to teach young people. PKP Polskie Linie Kolejowe S.A. also establishes cooperation with universities all over the country, which launch studies in railway.

Professional training

In 2019, PKP Polskie Linie Kolejowe S.A. continued the process of professional preparation of its employees to work in positions related to the operation and safety of railway traffic, i.e.: train dispatcher, signalman, switch-man, crossing attendant, track supervisor, trackman, control engineer and train manager. 1,560 participants were trained in 68 qualification courses. These courses were organised as an in-house system, and the classes were conducted by appropriately qualified employees of the Company with knowledge and professional experience. Organising courses on our own allows us to pass on knowledge to participants more effectively, since the instructors who run the courses have previously worked in positions relating to train traffic management and safety.

As part of the on-going supplementation of the staff authorised to drive railway vehicles, the Company has conducted 9 training courses, attended by 109 employees.

The Company also took care to ensure that employees with train driver's certificates are able to continue to

drive by organising periodic instructions and training using a railway vehicle simulator. 920 employees participated in these trainings. Most drivers are licensed to drive several different railway vehicles.

PKP Polskie Linie Kolejowe S.A. has a simulator for railway traffic control and communication, which trains employees working as train dispatchers. During the practical classes, participants had the opportunity to practice various non-standard situations that may occur in railway traffic, as well as their reactions to these situations. In 2019, 1,019 employees participated in these trainings.

External communication

Conference “National Railway Programme – the biggest railway investments – challenges, problems, solutions”

On 18 February 2019, PKP Polskie Linie Kolejowe S.A. organised a conference entitled “National Railway Programme – the biggest railway investments – challenges, problems, solutions”. It was the first edition of the conference organised as part of the National Railway Programme (KPK), which is the largest ever investment programme on the Polish railway. At the conference, during four thematic sessions, issues concerning the quality of the project and investor supervision, the scope of implementation of the KPK and the capabilities of manufacturers, the potential

and involvement of contractors in the implementation of the current perspective, the efficiency of rail traffic in conditions of intensive investment were discussed.

The conference was attended by representatives of the Management Board of PKP Polskie Linie Kolejowe S.A., as well as representatives of ministries competent for infrastructure and funds, contractors, manufacturers, and entities involved in and connected with the implementation of the KPK (nearly 200 people in total).

New mobile application Passenger Portal

PKP Polskie Linie Kolejowe S.A. has made available a new mobile application with a train timetable, called “Passenger Portal” for all Google Play and Apple Store users. Fast connections, selection of favourite stations and routes, actual train time are features that will make travelling easier. The tool replaced the application Rozkład Kolejowy (Timetable). The new version is more detailed and adapted to the needs of blind and near-blind people.

Travellers have been given more opportunities in planning their rail travel. Thanks to the Passenger Portal application it is possible to determine the travel according to your own criteria, e.g. date, time, rail operator, time to change. Users can also obtain information about the platform and track from which the train will depart within the app. You can choose between direct connection options or with changes, and you

can also get acquainted with the services offered on the train, e.g. business compartment, bar car or bicycle transport. Passengers are also able to view the train route in real time. Any user can keep track of the current position of the train and possible changes in the travel. Thanks to the cooperation with some rail operators, the user can take advantage of the buy-ticket option, which, in the form of a redirection to their sales systems, facilitates the purchase of tickets electronically.

13. International Railway Fair TRAKO

Between 24-27 September 2019, representatives of PKP Polskie Linie Kolejowe S.A. participated in the 13th edition of the International Railway Fair TRAKO in Gdańsk. The TRAKO Railway Fair is the most prestigious meeting of representatives of the railway transport industry in Poland. They serve to present the current level of development of transport systems and railway infrastructure in Poland, Europe and the world.

The Company was present at the TRAKO fair as part of the common stand of railway companies. The Company presented information, first of all, about planned and implemented modernisation work on particular railway lines, about the latest technical solutions being deployed in ongoing projects.

The Company's stand attracted many visitors of this important industry expo.

During the fair, representatives of the Company took part, among others, in the debate entitled "Railway Role in Creation of Equal Opportunities" with other railway companies and in the conference "We are changing the Polish railways" with representatives of the Ministry competent for infrastructure, the Land Transport Chamber of Commerce (IGTL) and other railway companies. Moreover, during the fair, a solemn jubilee was organized to celebrate the 65th anniversary of PKP Polskie Linii Kolejowe S.A. subsidiaries.

Image of Marshal Józef Piłsudski again at the PLK headquarters

PKP Polskie Linie Kolejowe S.A., on 26 November 2019, restored a bas-relief with the image of Marshal Józef Piłsudski above the entrance to the Company's headquarters building. The first image was placed on the railway building, on the 15th anniversary of Poland's regaining independence, i.e. 19 March 1933. The bas-relief disappeared from the building after World War II.

The bas-relief can be seen above the entrance to the headquarters of PKP Polskie Linie Kolejowe S.A. in Warsaw, from the side of ul. Targowa. The image together with the

medallion has a diameter of about 120 cm and is 10 cm deep. It weighs about 230 kg. The authors of the new bas-relief, the inscriptions decorating it and the performers of the renovation of the panoplyum are Anna Getler and Piotr Grzegorz Mądrach, visual artists and restorers. Restoring the original view of the tympanum above the entrance to the headquarters of PKP Polskie Linie Kolejowe S.A. is a reference by railroad men to respect for tradition and respect for the ethos of service they perform on a daily basis for the Nation and the Homeland.

Main events in 2019

January

- The first edition of the Railway Development Congress organised by railway companies – PKP Polskie Linie Kolejowe S.A., PKP S.A., PKP CARGO S.A., and PKP Intercity S.A.
- Signing by PKP Polskie Linie Kolejowe S.A. of a contract for PLN 180 million net for the development of project documentation for the project entitled „Construction of a new railway line Podłęże – Szczyrzyc – Tymbark / Mszana Dolna and modernisation of the existing railway line No. 104 Chabówka – Nowy Sącz – Stage I: preparatory works”.

February

- Project #PLKYellowSticker appreciated by the Ministry competent for interior and administration. PKP Polskie Linie Kolejowe S.A. during the celebration of the European Emergency Number 112 Day received thanks from the Minister competent for internal affairs and administration for the implementation of the project #PLKYellowSticker.
- Increasing the value of the National Railway Programme until 2023 (KPK) by PLN 3.2 billion for the implementation of competition projects co-financed under the "Connecting Europe" Facility – CEF. Adoption on

19 February 2019 by the Council of Ministers of a resolution amending the resolution on establishing the National Railway Programme until 2023.

March

- PLK appreciated by the Ministry competent for national education for the development of vocational education. PKP Polskie Linie Kolejowe S.A. received a distinction from the Ministry competent for national education for its efforts to develop vocational training in the railway industry.
- Rail Baltica: Completion of the next stage of work on the section Sadowne – Czyżew. Travellers use the new platforms at stations and stops. The trains run on the new 300-metre long bridge over the Bug River.
- Purchase by PKP Polskie Linie Kolejowe S.A. of a diagnostic vehicle for comprehensive assessment of railway lines, one of the most modern in Europe.
- Completion of the next stage of work on the Lublin – Stalowa Wola Rozwadów route. Travellers use the rebuilt stations and stops between Kraśnik and Zaklików.

April

- Amendment of the regulation on the introduction of train speeds above 200 km/h. Signing by the Minister competent for infrastructure of the amendment to the Regulation on general conditions for running railway traffic and signalling.

May

- Opening of a new railway viaduct on ul. Rydla in Kraków. Another collision-free intersection – consistently increasing safety in rail and road traffic.
- Improving conditions for the transport of goods in Silesia. Signing of an agreement for PLN 61 million by PKP Polskie Linie Kolejowe S.A. for revitalisation of railway line No. 171 in Sosnowiec Dańdówka station, together with reconstruction of the LCC equipment at the Kozioł junction signal box and reconstruction of the main signal box in Dąbrowa Górnicza Wschodnia station, as part of the investment project entitled “Works on the south-eastern GOP bypass and adjacent sections”.

June

- Railways will increase port capacity. PKP Polskie Linie Kolejowe S.A. signed agreements for over PLN 2.6 billion to improve rail access to ports in Gdańsk and Gdynia. The investment is co-financed by the CEF – Connecting Europe Facility.
- Trains present again on the railroad trestle bridge in Gorzów Wielkopolski. Completion of the project “Improvement of technical condition of engineering facilities stage I – Modernisation of the railway trestle bridge in Gorzów Wielkopolski”, co-funded under the Operational Programme Infrastructure and Environment (OPI&E).

- Access to railways has increased in Rzeszów. The new Rzeszów Zachodni stop will be opened to the travellers.
- PKP Polskie Linie Kolejowe S.A. signed a contract for nearly PLN 200 million for the design and execution of construction works under the project „Revitalisation of railway line No. 285 on the section Wrocław Gł. – Świdnica Przedmieście with line No. 771 Świdnica Przedmieście – Świdnica City”, co-financed by the ROP of Lower Silesian Province. It will significantly facilitate communication in Lower Silesia.

July

- Trains run on new trestle bridges in Kraków. The next stage of the project „Works on the E30 railway line on the Kraków Główny Towarowy – Rudzice section together with the extension of the tracks of the agglomeration line”, co-funded by the the CEF – Connecting Europe Facility.
- The next stage of modernisation of the Poznań-Szczecin line. PKP Polskie Linie Kolejowe S.A. signed contracts for PLN 600 million for modernisation of the section between Stargard and Szczecin Dąbie, as part of the project “Works on the railway line E 59 on the section Poznań Główny – Szczecin Dąbie” co-financed by the CEF – Connecting Europe Facility.
- Presentation of the Master Plan for rail transport in the Warsaw agglomeration. Signing of a contract by PKP Polskie Linie Kolejowe S.A. for approx. PLN 315 million net for the modernisation of line 35 on the Ostrołęka – Chorzele section.
- Railways will increase port capacity. PKP Polskie Linie Kolejowe S.A. signed agreements for almost PLN 1.5 billion net to improve rail access to sea ports in Szczecin and Świnoujście. The investment is co-financed by the CEF – Connecting Europe Facility.

August

- Signing by PKP Polskie Linie Kolejowe S.A. of a contract for PLN 98 million for the project “Design and development of the ERTMS/ETCS system on the E75 line between Warsaw Rembertów and Białystok”, co-financed by the CEF – Connecting Europe Facility.
- Signing by PKP Polskie Linie Kolejowe S.A. of a contract for PLN 337 million for design and construction works at the Łódź Kaliska station as part of the project “Increasing accessibility of the E20 and C-E20 main lines by improving the technical condition of adjacent railway lines”.

September

- For speed increase on the Central Rail Line (CMK). PKP Polskie Linie Kolejowe S.A. signed a contract worth PLN 314 million for the design and construction of a system and modern railway traffic control equipment on approximately 210 km of the Central Rail Line from Korytów to Zawiercie.

- New road viaduct in Krzeszowice. Another collision-free intersection – consistently increasing safety in rail and road traffic on the Kraków – Katowice route.
- More efficient travelling in the Lubuskie region. PKP Polskie Linie Kolejowe S.A. signed a contract for approximately PLN 106 million for the project “Modernisation of railway line No. 358 Zbąszynek – Gubin on the section Zbąszynek – Czerwieńsk – II stage”. The investment is co-financed from the ROP for the Lubuskie Province.
- Next stage of the Łódź-Kutno route reconstruction. Signing by PKP Polskie Linie Kolejowe S.A. of a contract for PLN 173 million for the design and renovation of railway line No. 16 Łódź Widzew – Kutno on the section Zgierz – Ozorków, co-funded by ROP for the Łódzkie Province.

October

- Signing by PKP Polskie Linie Kolejowe S.A. of a contract for over PLN 60 million for the development of the Warszawa Gdańska station. The investment is co-financed under the Operational Programme Infrastructure and Environment (OPI&E).
- Railway increases opportunities in the Silesian province. PKP Polskie Linie Kolejowe S.A. signed a contract worth approximately PLN 1.4 billion for the project “Works on basic passenger routes (E30 and E65) in Silesia, Stage I: line E65 on the Będzin – Katowice – Tychy – Czechowice Dziedzice – Zebrzydowice section: LOT C on a section of the junction control box Most Wisła- Czechowice – Dziedzice - Zabrzeg”. The investment is co-financed by the CEF – “Connecting Europe Facility”.
- Signing by PKP Polskie Linie Kolejowe S.A. of a contract worth almost PLN 460 million for the project “Revitalization of railway lines no. 694/157/190/191 Bronów – Bieniowiec – Skoczów – Goleszów – Cieszyn / Wisła Głębcze”, co-funded by ROP for the Silesian Province.

November

- Railway in Warsaw more accessible. Travellers use the new Warszawa Powązki stop.
- Effects of the National Railway Programme (KPK) Completion of the project for PLN 370 million “Works on railway lines No. 140, 148, 157, 159, 173, 689, 691 on the section Chybie – Żory – Rybnik – Nędza/Turze”, co-financed under the Operational Programme Infrastructure and Environment (OP&E).
- Cooperation between PKP Polskie Linie Kolejowe S.A. and Lithuanian Railways. Signing of a three-year cooperation agreement for dealing with incidents on the Rail Baltica route.

December

- Line E 30 Przemyśl – Zgorzelec completely electrified. Completion of the project “Electrification of railway lines No. 274, 278 on the Węglińiec – Zgorzelec section”, co-funded by the CEF – “Connecting Europe Facility”.
- Greater accessibility to railways. Commissioning of 18 new (additional) stops in Poland – among others Ustka Uroczysko, Jelenia Góra Zabobrze, Radziszów Centrum, Mokronos Górny Poznań Podolany, Lubin Stadion, Lublin Zachodni, Nysa Wschodnia, Olsztyn Śródmieście.
- Return of passenger trains to the Legnica-Głogów Copper Belt. Completion of the project “Works on railway line No. 289 on the section Legnica – Rudna Gwizdanów”, co-financed under the Operational Programme Infrastructure and Environment (OPI&E).
- By train to the Tatras. PKP Polskie Linie Kolejowe S.A. signed a contract for over PLN 587 million for the last section of the railway line “Zakopianka” from Sucha Beskidzka to Chabówka, as part of the project “Works on lines to Zakopane No. 97, 98.99 on the section Skawina – Sucha Beskidzka – Chabówka Zakopane”. The investment is co-financed under the Operational Programme Infrastructure and Environment (OPI&E).
- Rail Baltica without bottleneck. The second track and bridge over the Bug River, on the Warsaw-Białystok route, was commissioned.

Contact details

Company's Head Office

Targowa 74 Street
03-734 Warszawa

www.plk-sa.pl
www.plk-inwestycje.pl
www.bezpieczny-przejazd.pl

Board Administrative Department

Phone: (22) 473 25 18
fax: (22) 473 25 67
e-mail: ibz@plk-sa.pl

Communication and Promotion Department

Phone: (22) 473 23 38
fax: (22) 473 23 34
e-mail: iip@plk-sa.pl

Logistics Department

Phone: (22) 473 33 26
Phone: (22) 473 24 69
e-mail: ilg@plk-sa.pl

Sales Office

Phone: (22) 473 20 30
fax: (22) 473 28 04
e-mail: ius@plk-sa.pl

Investment Implementation Centre

Phone: (22) 473 21 53
fax: (22) 473 21 54
e-mail: ir@plk-sa.pl or centrum.ir@plk-sa.pl

Spokesperson

phone: (22) 473 30 02
phone: (+48) 662 114 900
e mail: rzecznik@plk-sa.pl

