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# **Infrastructure sector in Poland – planned investments and market overview**

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## Roads

The government documents contain information on the key challenges faced by the Polish road infrastructure. These include, in particular: the absence of a coherent network of highways and express roads, the failure to adjust to the appropriate load bearing capacity per axle. The aforementioned measures are particularly important due to the increasingly higher number of vehicles travelling on roads and the commitments entered into by Poland within the scope of the implementation of the core TEN-T network until 2030 and the comprehensive TEN-T network until 2050.

At present, the key programme conducted within the scope of road investment projects is the Programme for the Construction of National Roads. In addition to the above-indicated aims, its goal is to reduce travel times between Warsaw and other voivodeship cities, as well as to increase road safety. The programme assumes the construction of 3,900 kilometres of roads and 50 city bypasses. For the 2014-2020 period of the budgetary perspective, the General Directorate for National Roads and Highways (GDDKiA) plans to implement 113 contracts, in total, of which nearly 60% will be carried out in the "Design & Build" mode.

The Programme for the Construction of National Roads is gradually gaining speed. The first project, which was implemented under this programme, was completed in 2016. It referred to the construction of a nearly 1.5-kilometre-long bypass of Brodnica in the Kuyavian-Masovian Voivodeship, which greatly reduces the travel time from Toruń in the direction towards Olsztyn.

Last year, there were also other projects implemented. The construction of the A4 highway was completed (which is the first complete motorway in Poland, with a length of 672 kilometres within the territory of the country) and 40 kilometres of the A1 highway were opened for service. Moreover, there were two major investments completed, which were financed by local authorities. The first one refers to the construction of a tunnel under the Martwa Wisła river in Gdańsk. It was the biggest and most expensive investment project in the history of the city, which costed PLN 885 million. The length of the entire route amounts to 10 kilometres and it lies 35 metres beneath the riverbed at its deepest point. Another major investment project financed by local authorities, implemented outside the General Directorate for National Roads and Highways (GDDKiA), is the last section of the diametric highway (Drogowa Trasa Średnicowa, DTŚ) in Gliwice. As many as 14 engineering facilities, including seven road junctions, were constructed at the section with a length of 5.6 kilometres.

In November 2016, the Deputy Minister of Infrastructure and Construction Jerzy Szmit announced three giant investments, which are to be directed for implementation in the nearest future.

- The first project concerns the construction of the 81-kilometre-long section of the A1 highway between Piotrków Trybunalski and Częstochowa,
- Others include the construction of the S3 express road section from Bolków to Lubawka, and
- The construction of S61 express road at the section from Ostrowia Mazowiecka to Szczuczyn.

The invitations to tenders concerning the implementation of construction works within the last investment mentioned above have already been issued. The selection of contractors and the conclusion of agreements for the

- Design and construction of S19 express road at the following sections: Lasy Janowskie – Nisko Południe (24.3 km) and Nisko Południe – Sokołów Małopolski (29.9 km) is also planned for 2017.

At the end of the previous year, the General Directorate for National Roads and Highways (GDDKiA) had road projects contracted for the sum of PLN 81 billion, which means that the amount of PLN 26 billion remains to be contracted.

According to the Programme for the Construction of National Roads, the following investment projects will be implemented as from 2018:

Bypass roads:

- Construction of Kołbiel bypass 2019-2022
- Construction of Opatów bypass 2018-2022
- Construction of Ujście and Piła bypass - Stage 1 - Ujście bypass 2019-2022
- Construction of Kostrzyn nad Odrą bypass 2022-2025
- Construction of Łochów bypass 2018-2022
- Construction of Chełm bypass 2020-2023
- Construction of Głogów bypass 2020-2024
- Construction of Tarnowskie Góry bypass 2019-2023
- Construction of Bartoszyce bypass 2020-2024
- Construction of Sępólno Krajeńskie and Kamień Krajeński bypass 2020-2024
- Construction of Praszka bypass 2018-2022
- Construction of Starogard Gdański bypass 2019-2023
- Construction of Ostrołęka bypass 2019-2022
- Construction of Przecław and Warzymice bypass 2018-2020
- Construction of Krosno Odrzańskie bypass 2019-2024
- Construction of Strzelce Krajeńskie bypass 2019-2024

- Construction of Olesno bypass 2019-2024
- Construction of Radomsko bypass 2019-2022
- Construction of Oborniki bypass 2019-2024

Highways and express roads:

- S7 Gdańsk - Warsaw, section: Płońsk (S10) – Czosnów 2018-2021
- S7 Gdańsk - Warsaw, section: Czosnów - Warszawa (S8), 2018-2022
- S1 Kosztowy - Bielsko-Biała, 2018-2021
- S12 Radom - Lublin, 2020-2023
- S69 Bielsko-Biała - national border (the bypass road of Węgierska Górka), 2018-2021
- S1 Kosztowy - Bielsko-Biała, 2018-2021
- S3 Troszyn - Świnoujście 2018-2022
- S74 Sulejów - Kielce 2019-2023
- S12 Lublin - Dorohusk, section: Piaski - Dorohusk 2018-2022
- S74 Kielce - Nisko 2018-2023
- S10 Piła - Szczecin, section: Stargard Szczeciński - Piła 2019-2023
- S11 Kórnik - Ostrów Wielkopolski 2022-2026 □ S11 Ostrów Wielkopolski - Kępno 2022-2026
- S10 Płońsk - Toruń 2018-2021
- S19 Lubartów - Białystok 2018-2024
- S19 Lublin - Lubartów 2018-2021
- S11 Piła - Poznań 2019-2026
- A2 Siedlce - national border (Kukuryki) 2019-2022
- S19 national border - Białystok 2018-2025
- S12 Piotrków Trybunalski - Radom 2019-2023
- S10 Bydgoszcz - Piła 2018-2025
- S17 Piaski - Hrebenne 2018-2022
- S19 Rzeszów Południe - Babica node 2018-2023
- S19 Babica - Barwinek 2018-2023
- S11 Kępno - A1 2017-2024
- S11 Szczecinek - Piła 2022-2026
- S11 Koszalin - Szczecinek 2019-2022

## Railways

For the time being, there are about 19,000 kilometres of railway lines being operated in Poland, out of which 96% remain with the PKP PLK (Polish Railway Lines). Part of them is modernized and revitalized from the European Union funds. It is estimated that, within the current EU budgetary perspective (2014-2020), Poland would receive about PLN 42.8 billion for railway transportation. PKP PLK, the national infrastructure manager responsible for investments in railway network, as well as its maintenance, is to receive EUR 9.7 billion, the equivalent of PLN 40.16 billion, from the aforementioned amount. The financial resources, which enable the execution of the above-mentioned tasks, also include the state budget and the Railway Fund. The National Railway Programme indicates the following sources of financing: Cohesion Fund (under the Operational Programme Infrastructure and Environment and the Connecting Europe Facility), European Regional Development Fund - under the Operational Programme Eastern Poland and the Regional Operational Programmes, the state budget and the Railway Fund.

What railway investments will be implemented in the forthcoming years? The national strategic papers outline the three main objectives that determines which of the investment projects are to be implemented. The key priority is to strengthen the effectiveness of the railway transportation. Under this priority, the following investment projects will be carried out:

- Projects aimed at improving the technical condition of the core and comprehensive TEN-T network (the continuation of works on the C-E 30, E 20/C-E 20, E 59/C-E 59, E 65/C-E 65, E75 corridors and on the international corridors),
- Projects aimed at increasing the capacity of railway lines in the major agglomerations and their access roads (Warsaw, Łódź, Gdańsk),
- Projects enabling the achievement of an attractive travel time for trains compared to road transportation,
- Projects relevant to individual regional transportation systems,
- Projects located within the stretch of so-called Eastern Main Railway Line (Rzeszów/Kielce – Lublin – Białystok – Olsztyn),
- Projects aimed at improving the condition of infrastructure, which provides access to the seaport in Szczecin.

The second goal is to increase safety of the operation of railway transportation. Within the above scope, the following investment projects will be implemented:

- Installation of ERTMS/ETCS and ERTMS/GSM-R systems on the railway network in Poland,
- Improvement in the quality of offer and the safety of infrastructure, the access to which is provided by PKP PLK to rail carriers.

The third objective, according to which investment projects are selected for implementation, is the improvement in the quality of passenger and cargo services. In particular, the following projects are recognised in this case:

- Projects aimed at improving the technical condition of railway lines, which establish so-called freight corridors pursuant to the Regulation (EU) No. 913/2010 of the European Parliament and of the Council of 20 September 2010,
- Projects aimed at improving the condition of railway infrastructure operating on the border-crossing sections at the intersection of standard gauge and broad gauge railway lines (1435 mm and 1520 mm, respectively),
- Projects aimed at improving communication between Warsaw and other regions that are crucial for areas of the lowest transport accessibility, or projects aimed at improving communication between voivodeship cities and between major economic centres, as well as projects ensuring seamless train connections with seaports with the purpose of integrating various modes of transport.
- Projects aimed at improving the technical condition of other railway lines, which are particularly significant for freight traffic. This applies, in particular, to the projects ensuring the bypassing of the agglomerations of Warsaw, Poznań and Upper Silesia, as well as projects improving access to seaports in Gdańsk, Gdynia, Szczecin and Świnoujście. The investment projects enabling the exit from other points generating the biggest transportation streams will also be of high importance.

The largest tenders, invitations to which will be issued in the nearest future, will refer to the following:

- Works on the railway line no. 7 Warsaw Osobowa - Dorohusk at the section Warsaw - Otwock - Dęblin - Lublin (stage 1),
- Modernization of the E75 Rail Baltica railway line Warszawa - Białystok - national border with Lithuania, stage 1, at the section Warszawa Rembertów - Zielonka - Tłuszcz (Sadowne), phase 2,
- Construction of the Kraków Zabłocie - Kraków Krzemionki rail link,
- Modernization of the E30 / C-E 30 railway line, at the section Kraków - Rzeszów, stage 3, phase 2,
- Modernization of the railway line no. 8, at the section Warsaw Okęcie - Radom (task A, B, F), phase 2.

The agreements for the co-financing from the EU funds have already been signed for the implementation of the above-mentioned investment projects.

## Environmental protection - low-emission collective transport

Under the Operational Programme Infrastructure and Environment for the period 2014-2020, there are nine substantive priority axes financed from the Cohesion Fund and the European Regional Development Fund. Some of these priority axes are directly related to environmental protection. These include:

- Priority Axis 1: Decarbonisation of the economy, which includes, among others, the measures for supporting the generation and distribution of renewable energy, the energy efficiency of buildings, or the development and implementation of smart energy distribution systems, as well as promoting the use of high-efficiency cogeneration of heat and power.
- Priority Axis 2: Environmental protection, including mitigation of climate change, which encompasses the implementation of measures including, but not limited to, municipal waste management, water and sewage management in agglomerations.
- Priority Axis 6: Development of low-emission collective transport in cities, under which investments projects within the framework of the collective public transportation are implemented.
- Priority Axis 7: Improvement of energy security, which includes measures related to the development of smart energy storage, transmission and distribution systems.

Within the framework of the Priority Axis 1, the investment projects are implemented by such enterprises as: ENEA Operator Sp. z o.o.; PSE S.A.; Energa Operator S.A.; TAURON Dystrybucja S.A.; Veolia Energia Warszawa S.A. or any other municipal heating plants, as well as combined heat and power plants. The value of the majority of them does not exceed several dozen million Polish zloty. Many of them are modernization works on heating networks worth of several million Polish zloty.

Under the Priority Axis 2, the infrastructure projects refer mainly to the construction of flood defence infrastructure or sea coast protection infrastructure.

The Priority Axis 7 includes, above all, the gas pipeline investments carried out by Polska Spółka Gazownictwa Sp. z o.o. and OGP Gaz-System S.A., as well as investments aimed at the expansion of energy transmission networks, implemented by such entities as: ENEA Operator Sp. z o.o, PSE S.A.

For the time being, the most interesting projects are investments conducted within the framework of the Priority Axis 6. They have a number of common features:

- They are implemented in the strongly urbanised areas.





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- They often encompass the construction and modernization of track infrastructure.
- They often combine infrastructure works with the purchase of a rolling stock.

Due to the above, with relatively short length of the constructed infrastructure (e.g. several kilometres of a tramway line), the costs are considerable owing to the wide scope of engineering works and the applied solutions (e.g. within the tramway project leading to Wilanów in Warsaw, there are planned tram stops located deeper inland than certain underground stations).

It is also necessary to bear in mind the costs of the rolling stock purchase in some projects. Depending on individual parameters, the purchase cost of one tram is: PLN 7.7 million gross (a unidirectional Moderus Gamma tram for Poznań); PLN 8.3 million gross (Pesa Swing for Łódź); PLN 8.2 million gross (Pesa for Gorzów Wielkopolski). The trains, which have been most recently purchased for the Warsaw underground, cost about PLN 30.5 million for a six-car train.

## Seaports and airports

The recent resumption of the activity of the Ministry of Maritime Economy and Inland Waterway Transport, following an eight-year-long break, exerted great impact on the important of the ports industry in Poland. There are three main seaports in the territory of the country. In terms of the volume of transshipments in recent years, these are, consecutively: seaport in Gdańsk (indisputable leader), seaport in Szczecin and Świnoujście, and seaport in Gdynia.

All three above-mentioned entities plan investments in container terminals in the forthcoming years. At present, the leading terminal in that regard is the DCT terminal in Gdańsk, which completed the construction of the second deep-water quay in 2016, increasing its throughput capacity to 3 million TEU a year. The development of the DCT terminal slightly inhibits the activity of two BCT and GCT terminals in Gdynia, which even started to consider the possibility of a merger to compete with their competitor from Gdańsk. There is also increasing talk about the construction of a large container terminal in Świnoujście.

- One of the biggest investments in the field of maritime economy in Poland is the planned creation of a shipping channel through the Vistula Spit. The project connecting Elbląg with the Baltic Sea is targeted at enabling all-year-long navigation of sea-going vessels to the port in Elbląg and other ports of the Vistula Lagoon. The construction of the channel should be completed in 2022 at the latest and its estimated costs amount to approx. PLN 880 million.

In the forthcoming years, the seaports in Szczecin and Świnoujście, which spent PLN 650 million on investments over the period 2007-2013, plan the implementation of projects worth one billion Polish zloty. The following investment projects are financed from the EU funds:

- Motorway of the sea connecting Świnoujście and Trelleborg,
- Improved access to the Kashubian Basin region,
- Expansion and modernization of technical infrastructure in ports,
- Construction of a berth for the LNG export
- and improved access to the area of the Dębicki Canal.

Besides, there are also planned investments in the improved accessibility of the ports by railway and road transportation. The seaport in Gdańsk shows similar priorities.

Gdynia focuses on its deep-water plans and assumes to achieve this goal by 2027.

- The first step towards this direction is to be the reconstruction of the swing no. 2. The completed project will enable Gdynia to handle the largest vessels with a draught of 15 metres.

For the time being, there are 15 airports operating in Poland. In 2016, these airports served almost 35 million passengers, which means an increase by 12,5% compared to 2015. The dynamic growth of this market results predominantly from investments. Over the past 5 years, the amount of nearly PLN 6 billion has been invested in the Polish airports.

The investment boom started before 2012, in relation to the UEFA Euro 2012 Championships co-organised by Poland. This is when, under the EU financial perspective for years 2007-2013, airports in the following cities were modernized: Warsaw, Gdańsk, Szczecin, Kraków, Wrocław, Rzeszów, Katowice, Poznań, Bydgoszcz, and Łódź. The airports in Modlin and Lublin were also built, and the airport nearby Olsztyn was adapted to the purposes of passenger traffic.

There are ten Polish airports belonging to the TEN-T network, such as: Warsaw, Kraków, Gdańsk, Katowice, Wrocław, Poznań, Rzeszów, Szczecin, Łódź, and Bydgoszcz.

The following investment projects are planned for the forthcoming years:

- Construction of the runway at the Kraków-Balice airport
- Expansion of the apron and T2 building in Gdańsk
- Expansion of the cargo infrastructure and the railway connection with the Katowice-Pyrzowice airport
- Expansion of the terminal in Lublin
- Expansion of the technical facilities in Wrocław
- Reconstruction and modernization of the terminal in Bydgoszcz
- Construction of the cargo terminal and the railway connection in Rzeszów
- Expansion of the terminal in Szczecin

A separate question is the future of airports in Warsaw. The plans for the expansion of the Chopin airport and the airport in Modlin depend on the decision concerning the construction of the Central Airport. The Central Airport would be adjusted to the handling of 40 million passengers and the costs of its construction are estimated at the level of PLN 20-30 billion. The construction of the Central Airport would mean the closure of the Chopin airport and the restriction of the expansion of the airport in Modlin.

## Energy sector

The main entity on the Polish market of infrastructural investments in energy are Polskie Sieci Elektroenergetyczne (PSE), a national power network operator. The development plan for the transmission system in Poland is worth PLN 13.2 billion until 2025. The value of tasks intended for implementation in the forthcoming years, which were contracted by PSE at the end of 2016, is PLN 7.5 billion.

At the end of the previous year, the top management of PSE admitted that the EU support from the Operational Programme Infrastructure and Environment for the period 2014-2020 would be necessary for the implementation of a portion of tasks planned by PSE. The total value of investment projects, for which PSE intends to obtain co-financing, amounts to over PLN 5 billion, which includes 30 items.

- The planned investment projects will focus, above all, on the expansion of the national transmission networks in the northern and northwestern region of Poland, as well as the construction of transmission lines enabling the evacuation of power from new generation plants, i.e. power plants in Koźienice and Opole.

The result of the undertaken measures is to be the construction of about 4,300 kilometres of new circuits of extra high voltage (EHV) lines, the modernization of the existing 400 kV and 220 kV lines with a length of 2300 kilometres, the construction of new station facilities and the modernization of 23 existing stations and switchboards at the various levels of voltage.

Specifying the directions for future actions, PSE emphasises the uncertainty concerning the construction of the first nuclear power plant in Poland.

- In the energy generation sector, one of the investments considered for the future is also the construction of a power plant in Gubin, which is to be based on the lignite resources. The investor, Polska Grupa Energetyczna (PGE), has not taken any decision yet regarding the final investment completion date, but it is estimated that the first power plant block would become operational in 2030.

The sector of companies that construct and modernize the electricity infrastructure is steadily growing. However, according to the PSE top management, there are no clear leaders that have emerged among the contractors. For the time being, Polskie Sieci Elektroenergetyczne (PSE) cooperate with 40 contractors that, in turn, employ more than 100 subcontractors.

The investments in the electricity infrastructure have been divided into two groups: investment projects being or to be implemented over the period 2016-2020 and investment projects intended for implementation over the period 2021-2025. The



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majority of the projects falling within the first group concerns the connection of evacuation of power from new generation plants in the north of Poland. The projects included in the second group refer mainly to the provision of energy security of the Warsaw agglomeration and the western part of the country.