

It's ecology's turn! - PKP Polskie Linie Kolejowe for the environment

PKP Polskie Linie Kolejowe S.A. (PLK), the manager of the national railway network, protects the environment currying during investment works and in the course of daily operational activities. The measures are taken to reduce the impact of railways on the environment, improve energy efficiency and reduce CO₂ emissions. In Poland, the role of railways as an ecological, sustainable, and competitive transport mode compared to other modes is growing, which is in line with the assumptions of the European Green Deal. The implementation of many objectives in the field of environmental protection is possible thanks to funds from the European Union.

Noise under control

PKP Polskie Linie Kolejowe S.A. (PLK) owns the Acoustic Laboratory. Highly qualified employees and contemporary equipment allows the ongoing monitoring of noise on railway lines and taking appropriate actions depending on the data obtained. The modernization of railway routes brings positive effects in terms of reducing the noise caused by passing trains. The acoustic impact of railways on the environment is limited - by building contactless rail tracks, new turnouts, grinding rails, mats laying to reduce vibrations and noise, using vibrating dampers and where necessary, building acoustic screens.

Railways safe for animals

Railway lines managed by PLK run by, among others, through environmentally valuable nature reserves, Natura 2000 areas.

For most animals, railway tracks are not a barrier. This is confirmed by the photo trap recording and analyses made as part of monitoring the environmental impact assessment after the completion of the investment.

When a railway line crosses animal migration corridors, the infrastructure manager pays special attention to creating appropriate conditions for the free migration of animals. Special passages are being prepared or sound animal protection systems are used. Hundreds of railway facilities are being modernized for the needs of animal migration.

Already at the investment preparation stage, PKP Polskie Linie Kolejowe S.A. analyses how the work and future use of railway tracks may have an impact on the environment. Where necessary, appropriate forms of security are proposed and designed.

Energy efficiency and lower CO2 emissions

The electrification of railway lines has a positive effect on reducing the emission of pollutants into the atmosphere - the use of diesel rolling stock is limited.

Until 2023, PLK intends to electrify about 300 km of lines. In recent years, many lines have been electrified, among many others: Lublin - Stalowa Wola Rozwadów or Węglińiec - Zgorzelec.

The train is becoming an increasingly attractive mode of transport. One train can replace several dozen trucks, which has a positive impact on the reduction of air pollution.

PLK installs **LED lighting** on platforms and grade crossings. This saves energy and reduces CO₂ emissions.

The use of solar energy from photovoltaic installations by PLK has resulted in beneficial changes in energy consumption.

Solar installations are used, e.g. for heating water in service buildings, heat pumps for heating control command and signaling buildings at the Września station.

The geothermal heating installation of turnouts is being tested at the Słupsk station. The generated electricity is used for its own needs and the excess is transferred to the power grid. The Polish Infrastructure Manager is planning to test the possibility of storing the produced surplus energy.

The "Plan for adaptation of railway infrastructure to climate changes" has been implemented in the area of railway lines maintenance, which has taken into account the provisions of anti-smog resolutions.

In 2019 PKP Polskie Linie Kolejowe S.A. joined the initiative of the Railway Energy Efficiency Center (CEEK). Railway market members are committed to saving energy and using it efficiently. The goal is to reduce electricity consumption by 1.2 TWh within the rail sector by 2030. This will allow for the reduction of CO₂ emissions by over 1,000,000 tonnes.

PLK's daily pro-ecological activities include rational waste management, with particular emphasis on hazardous waste, rational use of fuels, heat, electricity, and water.

Time to innovate

In cooperation with the National Center for Research and Development (NCBR), PKP Polskie Linie Kolejowe S.A. implements the innovative "BRIK - Research and Development in Railway Infrastructure" project including ten R&D projects.

These projects include the development of an innovative lighting infrastructure management system on the network managed by PLK, which has, inter alia, ensured optimization of electricity consumption. The BRIK project also includes pro-ecological tasks related to protection against vibrations and noise caused by rail traffic.

A project that fits in the assumptions of the European Green Deal - in the context of the use of energy from renewable sources, is the development of an innovative methodology for installing photovoltaic panels on acoustic screens. This is an opportunity for additional sources of energy to illuminate passages under the tracks or power devices. These types of solutions are pioneering activities in the field of photovoltaics development.

PLK and NCBR are working on the development of cooperation and the launch of new research and development projects, including ones devoted to environmental issues.

Passenger and business-friendly railway

Modernization of railway lines creates new possibilities for travel among voivodships, regions, and cities by public transport. It favours access to the labor market, education, and recreation. Railway becomes more comfortable, accessible, and attractive in terms of travel time - especially in agglomerations. Rail transport generates lower CO₂ emissions to the atmosphere compared to road or air transport. The increasingly better possibilities of freight transport guarantee entrepreneurs efficient and timely transport of goods and affect the development of economic relations.

See more: <https://www.plk-sa.pl/>