PKP PLK climate change adaptation strategy

Athens, 18th November 2019
PKP Polish Railway Lines (PKP PLK) general information

PKP Polish Railway Lines – the national railway infrastructure manager
a company with majority stock held by the State Treasury

Creating the best conditions for providing transportation services for the country by:
- ensuring proper level of safety,
- respecting the natural environment,
- providing access to railway lines to passenger and freight railway undertakings,
- ensuring a high standard of information on passenger trains traffic,
- acting to increase accessibility, attractiveness and reliability of railway transport.
PKP PLK in figures

18,536 km of railway lines

38,815 turnouts

14,173 level crossings

25,152 engineering structures

5,764 buildings of technical posts

14,487 structures (umbrella roofs, platforms, acoustic screens)
Polish National Strategy for Adaptation to Climate Change with the perspective by 2030

Strategy for the Responsible Development to 2020 with the perspective by 2030

Plan for Railway Infrastructure Adaptation to Climate Change – document of PKP PLK
Plan for Railway Infrastructure Adaptation to Climate Change

- Indicates which PKP PLK operational areas are vulnerable to climate change;
- Develops methods for assessment of climate change impact on PKP PLK performance;
- Indicates the set of actions which should be undertaken.

source: kolejnakolej.info
Climate factors

- Storms, lightnings, hailstorms,
- Rainfall – extreme flows, floods (from the river/sea, sudden, urban floods), landslides,
- High temperature (fire),
- Strong and very strong wind,
- Low temperature (incl. black ice), snowfall,
- Fog.

source: historia.trojmiasto.pl
# Elements of the rail system vulnerable to climate factors

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**Recommended actions**

Guidelines on how the climate issues should be addressed in the environmental documentation

- reports on environmental impact
- project information sheets
Recommended actions

Development of the SEPE system

SEPE - Operating Performance Registration System

Features to be added to SEPE:
- the cause of an incident;
- the reaction time of the teams minimising the consequences of the incident;
- the time needed to restore train traffic;
- the number of teams involved;
- the equipment necessary to repair any damage.
Recommended actions

**Tree inventory**

recognition of trees within a distance of 25 metres of the railway tracks

results presented in GIS

source: imgw.pl
Recommended actions

*Systematic removal of trees that directly threaten railway infrastructure*

based on the inventory

avoid possible effects of fallen trees

source: radio90.pl
Recommended actions

Replacement of the heating systems of buildings

low-emission heating devices

source: plk-sa.pl
Recommended actions

Research project - increasing energy efficiency of devices for electric heating of the turnouts

reduced consumption of electricity

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reduced CO$_2$ emission
Recommended actions

Updating the Plan for Railway Infrastructure Adaptation to Climate Change every 5 years

- assessment of vulnerability
- implementation of changes
- proposal for new actions
Installation of photovoltaic cells in acoustic screens

Advantages:

- providing acoustic comfort
- generating solar energy

Cooperation with the National Centre for Research and Development
Thank you for your attention