REDUCING THE CARBON FOOTPRINT OF RUSSIAN RAILWAYS

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RUSSIAN RAILWAYS TODAY

85,600 km
length of railways

16
railways

77
regions of Russia

1.3 bln
cargo units carried

1 bln
passengers carried

86%
of cargos were carried with electric traction

85%
of passengers were carried with electric traction

/ WE BUILD

Railways
Railway stations
Bridges
Tunnels
Public facilities

/ WE CARE FOR THE ENVIRONMENT

Energy-efficient and safe handling of heavy trains

Smart systems for traffic schedule optimization

Energy management
The Russian Federation signed the agreement in 2015 and ratified it in 2019.

**PARIS AGREEMENT AND PLANS OF RUSSIAN RAILWAYS**

**LEGAL FRAMEWORK IN RUSSIA**

- Russian Presidential Decree on National Development Goals until 2030 No. 474 dated 21 Jul 2020
- Russian Presidential Decree on the Reduction of GHG Emissions No. 666 dated 4 Nov 2020
- RF Federal Law on the Restriction of GHG Emissions No. 296-FZ dated 2 Jul 2021
- RF Government Decree on the Criteria for Sustainable Development Projects No. 1587 dated 21 Sept 2021
- RF Government Decree on the Strategy for Low-Carbon Development until 2050 No. 3052-r dated 29 Oct 2021
- RF Government Decree on the Rules of Filing and Checking GHG Emission Reports No. 707 dated 20 Apr 2022

- An Integrated Program for Innovative Development of Russian Railways Holding until 2025
- Russian Railways Long-Term Development Program until 2025
- Russian Railways Environmental Strategy until 2030 and for the long term until 2035
- Russian Railways Energy Strategy until 2030 and for the long term until 2035
- Russian Railways Sustainable Development Concept
RUSSIAN RAILWAYS ENVIRONMENTAL STRATEGY

KEY FOCUS AREAS

✓ GHG EMISSION REDUCTION AND LOW-CARBON DEVELOPMENT
  ✓ Environmental impact mitigation
  ✓ Clean-up of pollution and accumulated environmental damage
  ✓ Preservation of natural ecosystems and biodiversity
  ✓ Development of the environmental management system
  ✓ Retrofitting and deployment of advanced technologies

KEY ACTIVITIES

✓ Use of low-carbon energy sources
✓ Power saving and energy efficiency
✓ Greenhouse gas emissions offset
✓ Improvement of the monitoring, reporting and control system
✓ Improvement of the product and service supplier management system
✓ Decarbonization of the Russian transport infrastructure

CLIMATE TARGET

✓ reduction of GHG emissions per unit of equivalent work
↓ 11%
IMPROVEMENT OF THE MONITORING SYSTEM

- Automatic acquisition of data from monitoring sensors
- Automatic monitoring of environmental components
- Analysis of environmental components
- Corporate Information System (Baikal-M)
- Integration with IT systems of Russian federal executive authorities
- Automated interaction with environmental laboratories
- Live monitoring systems
IMPROVEMENT OF THE REPORTING AND CONTROL SYSTEM

INTEGRATED METHODOLOGY FOR ASSESSING GHG EMISSIONS

DIRECT
(Scope 1)

AMOUNT OF COMPANY’S GHG EMISSIONS

- REPORTING
- MANAGEMENT AND CONTROL
- INFORMATION DISCLOSURE

INDIRECT
(Scope 2)

AMOUNT OF GHG EMISSIONS FROM FREIGHT/PASSENGER TRAFFIC

TRAFFIC CARBON FOOTPRINT INFORMATION

ENVIRONMENTAL CALCULATOR

1. CALCULATOR of CO2 emission reduction thanks to client’s request for rail carriage
2. METER of carbon footprint reduction thanks to choosing railway transport services
3. METER of trees saved from felling thanks to using electronic document control

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USE OF LOW-CARBON ENERGY SOURCES

**NATURAL GAS**
- Locomotive running on liquefied natural gas (LNG)

**STORAGE BATTERIES**
- Hybrid battery-trolley DC electric locomotive with induction motor drive and on-board energy storage

**HYDROGEN CELLS**
- Hydrogen train on Sakhalin

- Solar power plants and solar lighting systems
- Heat pumps
- Wind turbines
- Pellet boiler systems
- Catalytic cogeneration plant-based boiler facility
CLIMATE PROJECTS

✓ FIRE SAFETY MEASURES
✓ REFORESTATION AND AFFORESTATION
✓ COOPERATION WITH RESEARCH INSTITUTIONS, INCLUDING ON THE ISSUES OF CARBON LANDFILLS
✓ RIGHT-OF-WAY CARE
✓ LAND IMPROVEMENTS IN AREAS ADJACENT TO RAILWAY INFRASTRUCTURE
IMPROVEMENT OF THE PRODUCT AND SERVICE SUPPLIER MANAGEMENT SYSTEM

✓ “GREEN LINES” OF SCHEDULE
IN THE FUTURE – A NEW TRANSPORT SERVICE

✓ “GREEN RAILS”
A PROVEN TECHNOLOGY

✓ Use of recycled materials for manufacturing purposes

✓ Use of “green” energy for manufacturing purposes

✓ End-to-end quality control systems

✓ “GREEN” CONTAINER TERMINALS
IN THE FUTURE – ENVIRONMENTALLY FRIENDLY TRANSSHIPMENT HUB (SAINT PETERSBURG)

✓ Use of “green” energy for manufacturing purposes

✓ Use of recycled materials for manufacturing purposes

✓ End-to-end quality control systems
THANK YOU
FOR YOUR ATTENTION

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