

Managing Environmental Impact

JSC FPC is the 'face' of the parent company in long-distance passenger service. The Company operates in all regions of the Russian Federation where railway infrastructure exists and everywhere it aims to minimise its environmental impact¹. The targets for mitigating negative impacts are given in the FPC Development Strategy until 2030.



Key environmental indicators

- Reduction of waste generation – by 9.8% year-on-year
- Slight increase in air emissions (by 2.9%)
- Reduction of water consumption – by 11.5%
- Decrease in wastewater discharge – by 3.1%

Such reduction was achieved by optimising operations and processes across the Company's branches, adopting new technology, and maintaining consistent supervision.

The Company had no fines for violation of environmental legislation in 2023.

The Company prevents environmental contamination and maintains an adequate level of sanitation at rail infrastructure by acquiring only carriages equipped with environmentally friendly toilet facilities. Such toilet facilities are installed on carriages, which undergo overhaul.

Parameters	2021	2022	2023	vs. 2022, %
Waste generation, '000 tonnes	83.2 ²	102.1	92.1	90.2
Air emissions, '000 tonnes	3.2	3.3	3.4	102.9
Water consumption, million m ³	5.7	5.2	4.6	88.5
Water discharge, million m ³	3.3	3.2	3.1	96.9

Goals	Initiatives
Minimising negative environmental impacts	Equipping carriages with environmentally friendly toilet facilities
	Purchasing carriages with centralised power supply and separate waste accumulation systems
	Installing high-voltage heating points at the turnaround and originating stations
Caring for human health and the environment	Revamping treatment facilities
	Retrofitting water recirculation systems to carriage washing facilities
	Gasification of boiler houses
	Upgrading water and sewer networks

Hazardous waste handling

During 2023, the Company generated a total of 92,100 tonnes of waste of hazard classes I-V, of which more than 36% (about 34,000 tonnes) was passenger carriage cleaning waste.

The increase in the volume of hazard class V waste generation is due to the reduction of solid waste generation (hazard class VI) through separate accumulation of waste for recycling.

Gross volume of waste generation by hazard class, '000 tonnes

Year	2021	2022	2023	vs. 2022, %
Total	83.266	102.087	92.137	90.3
Hazard Class 1	0.013	0.009	0.008	88.9
Hazard Class 2	0.205	0.240	0.211	87.9
Hazard Class 3	0.147	0.200	0.158	79
Hazard Class 4	65.705	84.561	69.516	88.2
Hazard Class 5	17.197	17.078	22.244	+23.2

Air protection and climate impact

In total, the Company emitted 3,400 tonnes of pollutants into the atmospheric air in 2023.

Air emissions, thousand tonnes, '000 tonnes

Pollutants	2021	2022	2023	vs. 2022, %
Total pollutants	3.2	3.3	3.4	102.9
Including:				
• pollutants emitted into the atmosphere from stationary sources	2.9	3.0	3.1	100.9
• pollutants emitted into the atmosphere from mobile sources	0.3	0.3	0.3	103

The slight year-on-year increase in pollutant emissions is due to the high use of motorised vehicles for production needs in 2023.

The main measures to reduce pollutant emissions: gasification of boiler houses, construction of high-voltage stations for heating passenger carriages at the points of train makeup and turnover, reduction of coal and fuel oil consumption.

¹ In doing so, the Company is guided by the environmental legislation of the Russian Federation, the Environmental Strategy of the parent company, the development strategy of JSC FPC until 2030 and FPC Standard 1.16.001-2016.

² Compared with data included in the 2021 Report, there were changes related to methods of summarising data of branches: 2021 indicators were specified according to statistical reporting of branches, according to data from the official website of the Federal Service for Supervision of Natural Resources (Rosprirodnadzor).

In order to maintain the entire passenger carriage fleet equipped with electric heating to reduce atmospheric air pollution, JSC FPC formulated a targeted investment programme on equipping passenger train preparation fleets with power supply devices with an implementation period of 2018 through to 2025. The total amount of investment funds allocated under the programme is RUB 3.7 billion.

In 2019–2023, the Company disbursed RUB 1.9 billion under this programme. During this period, 15 high-voltage heating points with 47 high-voltage columns were built. This made it possible to reduce coal consumption by 25,550 tonnes, due to which the amount of greenhouse gas emissions into the atmospheric air decreased by 41,400 tonnes, or 24%.

Sustainable water use

Total water use (water consumption), million m³

Water consumption	2021	2022	2023	vs. 2022, %
Total	5.7	5.2	4.6	88.5

Total water discharge, million m³

Wastewater discharge	2021	2022	2023	vs. 2022, %
Total	3.27	3.24	3.14	96.9
of these				
• Wastewater discharge into the environment	0.06	0.04	0.04	0
• Discharge of wastewater into centralised sewage systems	3.21	3.2	3.1	96.9

In order to reduce the amount of waste water that may have a negative impact on the environment and operation of centralised sewage systems, the Company implements programs for retrofitting treatment facilities and carriage washing facilities by furnishing them with a closed-loop water supply system and local treatment facilities.

In particular, the following works are carried out:

- Retrofitting carriage washing facilities featuring water recirculation systems
- Upgrading water supply and sewer networks
- Retrofitting the Company's buildings and structures with water consumption and discharge meters

Energy Efficiency

In order to improve energy efficiency and reduce the energy intensity of production activities, the Company annually reduces costs for the use of fuel and energy resources, by doing as follows:

- Purchasing new, advanced and energy-efficient rolling stock
- Using energy-saving technologies in the depot and site lighting systems (LEDs and smart control systems)

- Upgrading and converting boilers from liquid fuels to gas
- Equipping buildings and structures with electricity and heat metering devices
- Installing high-voltage charging points at passenger train preparation sites

Progress in the use of fuel and energy resources

Use of fuel and energy resources in physical terms

Resources	2021	2022	2023	vs. 2022, %
Electric energy, million kWh	111.942	113.134	114.324	101.1
Diesel fuel, '000 tonnes	3.139	1.646	1.334	81
Coal, '000 tonnes	79.198	84.627	87.365	103.2
Fuel oil, '000 tonnes	10.797	9.998	9.567	95.7
Natural gas, million m ³	22.917	22.744	23.709	104.2
Petrol, '000 tonnes	0.603	0.591	0.568	96
Briquettes, '000 tonnes	2.725	2.575	2.895	112.4
Pellets, '000 tonnes	0.452	0.280	0.165	58.9
Firewood, '000 m ³	0.074	0.080	0.012	14.9
Total, '000 TFOE	150.231	153.099	155.866	101.8

Use of fuel and energy resources in monetary terms, RUB million

Resources	2021	2022	2023	vs. 2022, %
Electric power	662.7	699.4	787.1	112.5
Diesel fuel	150.2	89.6	78.7	87.8
Coal	279.0	362.4	443.5	122.4
Fuel oil	213.2	205.9	170.1	82.6
Natural gas	139.9	148.3	167.3	112.8
Petroleum	32.8	34.0	33.0	97.1
Briquettes	22.4	25.5	31.0	121.3
Pellets	3.3	2.3	2.0	87
Firewood	0.2	0.4	0.0	4.5