

## Health and safety

In 2018, Russian Railways joined Vision Zero, a global campaign seeking to completely reshape corporate approaches to health and safety management. This strategy requires actors at all levels, from executives to employees, to act with awareness in order to prevent any work-related accidents.

### The reporting year saw the following reductions in workplace injuries across the Company vs the previous year:

- › overall injury rate (total number of injuries) down by 7.7 % (from 182 to 168 employees);
- › fatal injury rate (number of fatal injuries) down by 19.2 % (from 26 to 21 employees);
- › severe injury rate (number of severe injuries) flat y-o-y at 51 employees.

### The workplace injury frequency rate dropped as follows:

- › overall workplace injury frequency rate (number of injuries per 1,000 workers) down by 6.8% (from 0.251 to 0.234);
- › fatal injury frequency rate (number of fatal injuries per 1,000 workers) down by 19.4 % (from 0.036 to 0.029).

### Key health and safety indicators

Indicator	2014	2015	2016	2017	2018
Health and safety improvement expenses, RUB m	16,330.0	18,593.5	18,715.5	20,121.1	22,596.1
Workplace injury frequency rate (number of injuries per 1,000 employees)	0.34	0.29	0.30	0.25	0.23
Number of workplaces with hazardous working conditions, thousand	131	105	95	88	84
Improved working conditions, thousand workplaces	33	23	32	37	41

The Company has fully implemented its risk-oriented approach, which provides for automated measurement of professional risks. The outcomes serve as a basis for managerial decision-making and health and

safety improvements. On top of that, the Company has approved a Comprehensive Health and Safety Improvement Programme for 2018–2020 reliant on the risk-oriented approach.

In 2018, Russian Railways spent a total of RUB 22.6 bn on health and safety improvement initiatives. More than 47,000 Company's employees took associated mandatory training with a subsequent knowledge check at education centres.

## Environmental protection

Russian Railways is a major natural resource user operating in 77 regions of Russia.

In line with the government's environmental priorities, Russian Railways' efforts are focused on improving environmental safety, ensuring rational use of resources and preserving natural systems.

### In 2018, Russian Railways had over RUB 8 bn budgeted for key environmental initiatives, with RUB 5.27 bn allocated for investments. The initiatives included:

- › upgrade of ca. 22 heat supply utilities using resource saving solutions;
- › construction and upgrade of nine treatment facilities for industrial, utility and sanitary effluents using best available technologies;

- › liquidation of 12 sites of accumulated environmental damage;
- › continued renovation of an industrial landfill.

As part of Russia's obligations under the Stockholm Convention, Russian Railways, the Ministry of Natural Resources and Environment, and UNIDO Centre for Industrial Cooperation are running

a pilot project to destroy equipment and materials containing highly toxic polychlorinated biphenyl.

Every year, Russian Railways' employees ensure proper sanitary condition of the railway infrastructure area bordering specially protected natural territories. A special focus is placed on fire fighting measures. The railway infrastructure areas are regularly inspected for unauthorised waste deposits, firebreaks made, wood scrap and used rails removed, and dry wood and bushes cut down. Parts of tracks often crossed by animals

## Air protection

As part of the corporate Environmental Strategy, the Company plans to cut its emissions from stationary sources in 2019 by 1.8 kt y-o-y. This will be achieved through:

- › construction of new and renovation of existing boilers;
- › transition of boilers to greener fuel (natural gas, pellets, renewable energy sources);

are equipped with reflective tape, and are monitored together with forestry and hunting sector representatives.

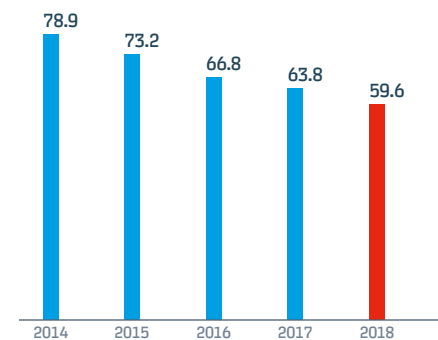
**In 2018, the Company's environmental efforts were recognised by federal authorities and non-profit associations and received prestigious national and international environmental prizes and awards:**

- › in February, Russian Railways was awarded a letter of recognition from the Russian President for its contribution to the Year of the Environment in Russia;

- › in August, the Railway Stations Directorate (branch of Russian Railways) received a diploma for the Best Environmental Performance Tracking System from the Green Office 2018 initiative committee. It celebrates commitment to environmental management aimed at mitigating the negative impact through rational use of natural resources.

- › improved efficiency of fuel burning;
- › introduction of electric heating;
- › disposal of underutilised coal boilers;
- › upgrade of existing and installation of new dust and gas collectors.

Emissions from stationary sources, kt



## Waste management

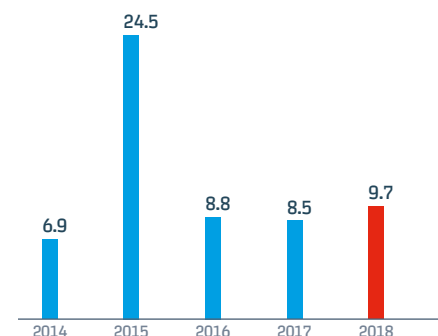
Up to 80% of waste generated by Russian Railways is reused or recycled. Most of it (ferrous and non-ferrous scrap metals and used petroleum products) is handled by waste processing professionals. Waste is also reused within the Company.

**Initiatives to reduce waste and increase recycling volumes include:**

- › separate waste collection in service and office buildings and at train stations;

- › reduced paper consumption (transition to electronic workflow);
- › reduced polyethylene waste generation (transition to biodegradable bags);
- › reduced ash and slag generation (upgrade of boilers);
- › reduced mercury waste generation (transition to LED lighting).

Waste decontamination, kt



## Reduction of GHG emissions

The Company works to reduce its GHG emissions by supporting the green economy. Its initiatives are focused on energy saving, green solutions, renewable and alternative energy sources.

**As compared to the base year of 1990, Russian Railways' GHG emissions in 2018 reduced by 29.1 mt of CO<sub>2</sub>, to 37.8 mt (down 43.5%). The effect was achieved through:**

- › reduced fuel and energy consumption;
- › replacement of the outdated rolling stock with newer, more environmentally friendly options.
- › upgrade of existing boilers and their transition to greener fuel;

## Energy efficiency and conservation

Russian Railways maintains leadership in energy efficiency and environmental friendliness among global freight and passenger railway companies. Russia ranks first globally in terms of energy efficiency in rail freight transportation outperforming all of the European railways combined, as well as railways in China, Japan, India and the USA. As regards energy efficiency in passenger transportation, Russia comes in fourth after India, China, and Japan.

The Company implements its Energy Strategy through 2020 and potentially through 2030, updated in 2016, as well as the Energy Savings and Energy Efficiency Programme (the "Energy Efficiency Programme").

**Compared to 2017, our key achievements are:**

- › reduced per unit fuel and energy consumption for train traction by 0.4%;
- › increased use of regenerative power by 8.7%;
- › reduced per unit fuel and energy consumption for heating and standby locomotive transportation by 2.5% for electric traction and by 1.5% for diesel traction.
- › 1,800 pieces of resource and energy saving equipment installed for a total amount of RUB 1.97 bn. (as part of the Energy Efficiency Programme).

**In 2018, the Company's divisions implemented over 12,500 energy efficiency initiatives and saved:**

- › 511.5 m kWh of electricity for RUB 1,566.8 m;
- › 34,8 kt of diesel fuel for RUB 1,451.8 m;
- › 0.8 kt of gasoline for RUB 34.4 m;
- › 73,400 Gcal of heat energy for RUB 139.8 m;
- › 10 million m<sup>3</sup> of natural gas for RUB 50.6 m;
- › 15.4 kt of coal for RUB 32.1 m;
- › 10.3 kt of heating oil for RUB 142.9 m.

**The total saving of fuel and energy resources in 2018 amounted to 4,741 TJ (or RUB 3.418 bn), 47.1% above the target. This is one of the Company's energy efficiency records since 2010.**

## Charity

The Company has a Charity and Sponsorship Policy as approved by the Board of Directors on 8 November 2016. It gives the priority to institutions, funds, and performance groups working with Russian Railways.

The charity spending in 2018 amounted to ca. RUB 3 bn.

As part of the Year of Volunteers in Russia, the Group supported over 300 initiatives with more than 80,000 participants. The Best Corporate Volunteering Programme competition reviewed 341 projects aimed to promote healthy lifestyle, help seniors and children, and preserve the environment and cultural heritage.