

# Energy efficiency and conservation

Russian Railways maintains leadership in energy efficiency and environmental friendliness among global freight and passenger railway companies. In terms of energy efficiency, Russia ranks first globally in rail freight transportation and fourth in passenger transportation after India, China, and Japan.

Every year, the Company shapes and implements the Energy Savings and Energy Efficiency Programme as part of the Company's Energy Strategy through 2020 and potentially through 2030. In 2020, Russian Railways plans to develop the Energy Strategy through 2025 and potentially through 2035 based on the analysis of the current strategy implementation. The Strategy will update the Group's priorities in power generation and target energy efficiency indicators. The key tool for the Company's efforts to save energy is its investment project titled "Introduction of Resource-Saving Technologies in Railway Transport".

In 2019, the Company improved its energy efficiency by 1.2%.

In the reporting year, the Energy Efficiency Programme helped achieve fuel and energy savings of 3,446.3 TJ or RUB 2.352 bn.

The improvement of traffic management processes reduced resource consumption (by 174.5 m kWh of electricity and 11.4 kt of diesel fuel) and environmental impact (by 123 kt of CO<sub>2</sub>).

The improved performance of traction power supply saved 4.6 m Kwh or RUB 16.3 m.

Increased energy efficiency of stationary power facilities saved more than RUB 1.2 bn.

In 2019, over 1,200 energy saving devices were introduced at a cost of RUB 2.8 bn.

This helped us replace 14 coal, one mazut, and eight diesel boilers with eco-friendly energy sources (in particular, 11 railway facilities switched to renewable power).

In 2019, initiatives implemented by the Company's divisions as part of the Energy Efficiency Programme saved:

- 311.4 m kWh of electricity for RUB 1,132 m;
- 17,6 kt of diesel fuel for RUB 757 m;
- 0.9 kt of petrol for RUB 39 m;
- 7.0 kt of mazut for RUB 106 m;
- 22.7 kt of coal for RUB 49 m;
- 10.0 mcm of natural gas for RUB 52 m;
- 110.0 Gcal of heat energy for RUB 224 m.

## Energy efficiency of Russian Railways' operations

Goal	Target for 2019 <sup>1</sup>	Actual for 2019
Energy efficiency improvement, %	0.7	1.2

## Energy intensity of Russian Railways' production activity, kJ / virtual tcm net



<sup>1</sup> As defined by the Long-term Development Programme of Russian Railways until 2025 approved by the Russian Government's Order No. 466-r dated 19 March 2019.