Investment activities

In the reporting year, the Company's Board of Directors approved the investment programme for 2017.

Its focus areas include:

- projects in pursuance of instructions of the President and the Government of Russia;
- railway infrastructure development projects;
- ensuring safety and reliability of processes and operations;
- eliminating infrastructure constraints;
- rolling stock renewal;
- projects to enhance transportation accessibility in Russia;
- other areas, including resource-saving technologies, R&D and social development.

Investment planning embraces several stages:

1. Create a general plan for railway network development using the input-output balance model and define priorities.

   Intersectoral and interregional balancing of freight transportation is key to determining potential freight volumes and main destinations. The balance model requires transitioning from the macroeconomic forecasts of the Russian Ministry of Economic Development to forecasting interregional transportation flows using development programmes and strategies for specific industries, regions, and companies. Forecasts should also take into account development plans for related transportation means such as sea ports.

   Projected freight volumes serve as a basis to define and substantiate initiatives to develop railway infrastructure, in particular as part of the general railway network development plan until 2020 and 2025. The plan is designed to identify and eliminate a number of inherent bottlenecks that impede further development of railway infrastructure. In determining priority growth and upgrade projects in the mid term, the Company relies on long-term targets set out in the general plan and the growth pace of freight volumes.

2. Determine sources of funding for the investment programme as part of the financial plan.

   The Company's investment projects are split into three categories based on the payback period and economic performance.

   The first category includes projects with a payback period of 10–15 years financed from the Company's cash flow and borrowed funds, providing that its leverage remains at an acceptable level.

   The second category covers projects with a payback period of 15–30 years that cannot be financed from debt as it is not available on the market for the required term. Currently, all investment projects in this category are financed through infrastructure bond issues.

The third category is projects that do not pay back and are financed from the state budget only, including:

- upgrade of railway infrastructure of the Baikal–Amur and Trans-Siberian main lines;
- development and renovation of the railway infrastructure that serves ports of the Azov and Black Seas;
- development of the Moscow Transport Hub;
- construction of the Moscow–Kazan High-Speed Railway;
- infrastructure expansion and upgrade as part of the Northern Latitudinal Railway project.

3. Submit projects for review and prioritisation by the Company's Expert Council for Investment Projects and the Investment Committee based on the available sources of funding.

   After defining railway development priorities, the Expert Council for Investment Projects (the "Expert Council") and the Investment Committee optimise project parameters.

   The Expert Council performs an in-depth analysis of projects prior to their review by the Investment Committee, which includes the assessment of technical and operating solutions and selecting the best ones in terms of efficiency and feasibility.

   The Investment Committee makes decisions on the project priority that serve as a basis for a three-year investment programme submitted to the Company's Board of Directors and the Russian Government for review.

Investment highlights in 2017

In 2017, Russian Railways' investment expenses stood at RUB 479.5 bn, including:

- RUB 375.5 bn using the Company's own cash;
- RUB 87.0 bn in government support;
- RUB 2.1 bn in external funds;
- RUB 14.9 bn in capitalised interest.

In 2017, the remaining RUB 1.0 bn of net profit for 2016 retained after dividend payouts and mandatory contributions was used to finance the comprehensive upgrade of the Mga–Gatchina–Veimarn–Ivangorod section and railway infrastructure serving ports on the Gulf of Finland's southern shores as part of the programme to develop and renovate the railway infrastructure serving ports of the North-Western basin.

In 2017, the Company's investment programme focused on nationwide projects launched in line with instructions of the Russian President and the Government and supported by the state budget:

- development of railway infrastructure in the Eastern Operating Domain;
- development of the Moscow Transport Hub;
- upgrade of the Mezhdurechensk–Tayshet section;
- development and renovation of the railway infrastructure serving ports of the Azov and Black Seas;
- construction of the Zhuravka–Millerovo line;
- construction of the Moscow–Kazan High-Speed Railway.

In 2017, the Company embarked on a comprehensive programme to develop and renovate the railway infrastructure serving ports of the North-Western basin.

Russian Railways also proceeded with the throughput capacity expansion, including at the Tobolsk–Surgut–Korotchaevo section, upgrade and reconstruction of engineering structures, construction of second tracks, and upgrade of marshalling yards.

We put into operation fixed assets for a total of RUB 400.5 bn, including:

- 131 km of new and second tracks;
- 170.1 km of station tracks;
- 50.8 km of electrified lines;
- 2,553.5 km of renovated tracks;
- 459 purchased locomotives;
- 155 railcar rolling stock units.

Government support was provided to the following projects in 2017:

Upgrade of the Baikal–Amur and Trans-Siberian Railways

Since 2013, Russian Railways has been taking a series of priority measures to develop Trans-Baikal and Far Eastern railways, which include eliminating bottlenecks and boosting freight transportation volumes to 66.8 mtpa by 2020 against 2012.

In 2017, the Eastern Operating Domain saw the construction and commissioning of:

- two sections (Sakukan–Sallikit and Mongokhto–Landyshi) with a total length of 30.9 km;
- 56.7 km of station tracks;
- 158 turnouts;
- and renovation of 23.1 km of overhead lines and 819.5 km of roadbed.

Upgrade of the Mezhdurechensk–Tayshet section

The project will enable the Company to accommodate larger cargo volumes by 2020, primary by transporting 15 mtpa of cargo along the Kyzyl–Kuragino railway currently under construction. This includes 12 mtpa of coal to be delivered from the Elegest coal mine to Far Eastern ports.

The project provides for a full range of measures to expand throughput capacity, including:

- construction of additional 115 km of main tracks, two passing tracks, and a new Avda–Gromadskaya crossover track;
- upgrade of the second Dzhebsky Tunnel;
- development of stations;
- enhancing power supply at the Abakan–Kuragino, Kuragino–Sayanskaya and Uyar–Tayshet sections.

Under the project, 2017 saw the construction of

- 8.4 km of station tracks;
- 20 interlocked turnouts;
- upgrade of 18.5 km of overhead lines, and commissioning of a signalling centre.

Development and renovation of the railway infrastructure serving ports of the Azov and Black Seas

This project seeks to eliminate current infrastructure bottlenecks that limit maximum transportation volumes available to a variety of industries.

In 2017, the infrastructure serving ports of the Azov and Black Seas saw the commissioning of:

- 68.6 km of the second main track, including 17.6 km at the Poroshinskaya – 4 km section, 20.1 km at the Remontnaya–Gashun section, and 30.9 km at the Yurovsky–Kranaya Strela–Starotitarovka section;
- 309.8 km of automatic block signalling units;
- 23.1 km of station tracks;
- 172 interlocked turnouts;
- 131.3 km of upgraded overhead lines.

Development of the Moscow Transport Hub's railway infrastructure

The project seeks to boost traffic and carrying capacities of the railway infrastructure to cater to the increasing number of passengers that use the Moscow Transport Hub. The reporting year saw the Company put into operation:

- 9.9 km of automatic block signalling units;
- 29.8 km of station tracks;
- 148 interlocked turnouts;
- 22 km of renovated overhead lines;
- 4.5 km of additional main tracks at the Domodedovo (Aviatsionnaya) – Airport section.

Construction of the Prokhorovka–Zhuravka–Chertkovo–Bataysk line

The project to construct a 136.9 km long Zhuravka–Millerovo line aims to provide uninterrupted and safe south-bound transportation of cargo and people by eliminating any external factors.

This is in furtherance of Decree No. 196 of the President of the Russian Federation dated 17 April 2015 On the Construction of the Two-Track Electrified Zhuravka–Millerovo Line.

In 2017, the Company completed the construction of the 137.5 km long Zhuravka–Millerovo line. Based on Order No. 472 of the Federal Agency for Rail Transport (Roszheldor) dated 6 December 2017, the Company put into operation:

- six new stations (Zaitsevka, Sergeevka, Sokhranovka, Kuteynikovo, Vinogradovka, Kolodezi);
- upgraded Bochenkovo and Zhuravka stations;
- three traction substations;
- two upgraded traction substations.

Construction of the Moscow–Kazan High-Speed Railway

As per the Government's instructions and schedule for the Moscow–Kazan High-Speed Railway Construction approved by Order No. 5-r of the Russian Government dated 13 January 2016, the reporting year saw the completion of design and support activities and state expert appraisal of the design documents.

The full version of Russian Railways' investment programme and progress reports are available at http://eng.rzd.ru/statice/public/en?STRUCTURE_ID=294

EURASIA HIGH-SPEED RAILWAY ROUTE

2.3+
thousand km
length
of the Russian section

9.5+
thousand km
total length

RUB 22.3+
trillion
total GDP growth
in 2018–2041
(in prices for the respective period)

20.5+
million people
passenger transportation
by high-speed railway
routes by 2023

8.5+
mt
cargo transportation
by high-speed railway
routes by 2030

2–3
days
travel time from
Beijing to Berlin

RUB 4.7
trillion
additions to state budget
revenues by 2041
(in prices for the respective period)

3.4%
annually
estimated growth
in cargo transportation

DESIGN HIGHLIGHTS: KEY PARAMETERS OF THE MOSCOW–KAZAN HIGH-SPEED RAILWAY

Length

783 km

Passenger transportation

7
Russian regions

Minimum travel time with stops

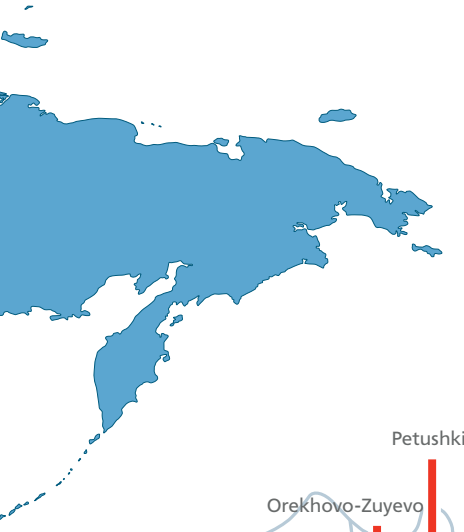
3.17 hours

The Moscow-Kazan high-speed railway will have:

212 bridges

17 overpasses

124 flyovers



MOSCOW–KAZAN HIGH-SPEED RAILWAY: PILOT SECTION

16
train stations

90%
(1,400 km)
main tracks constructed using ballastless technology

360 km/h
service speed

89 km
wildlife crossings

400 km/h
maximum speed

1,480 km
protective screens