



GENNADY BESSONOV

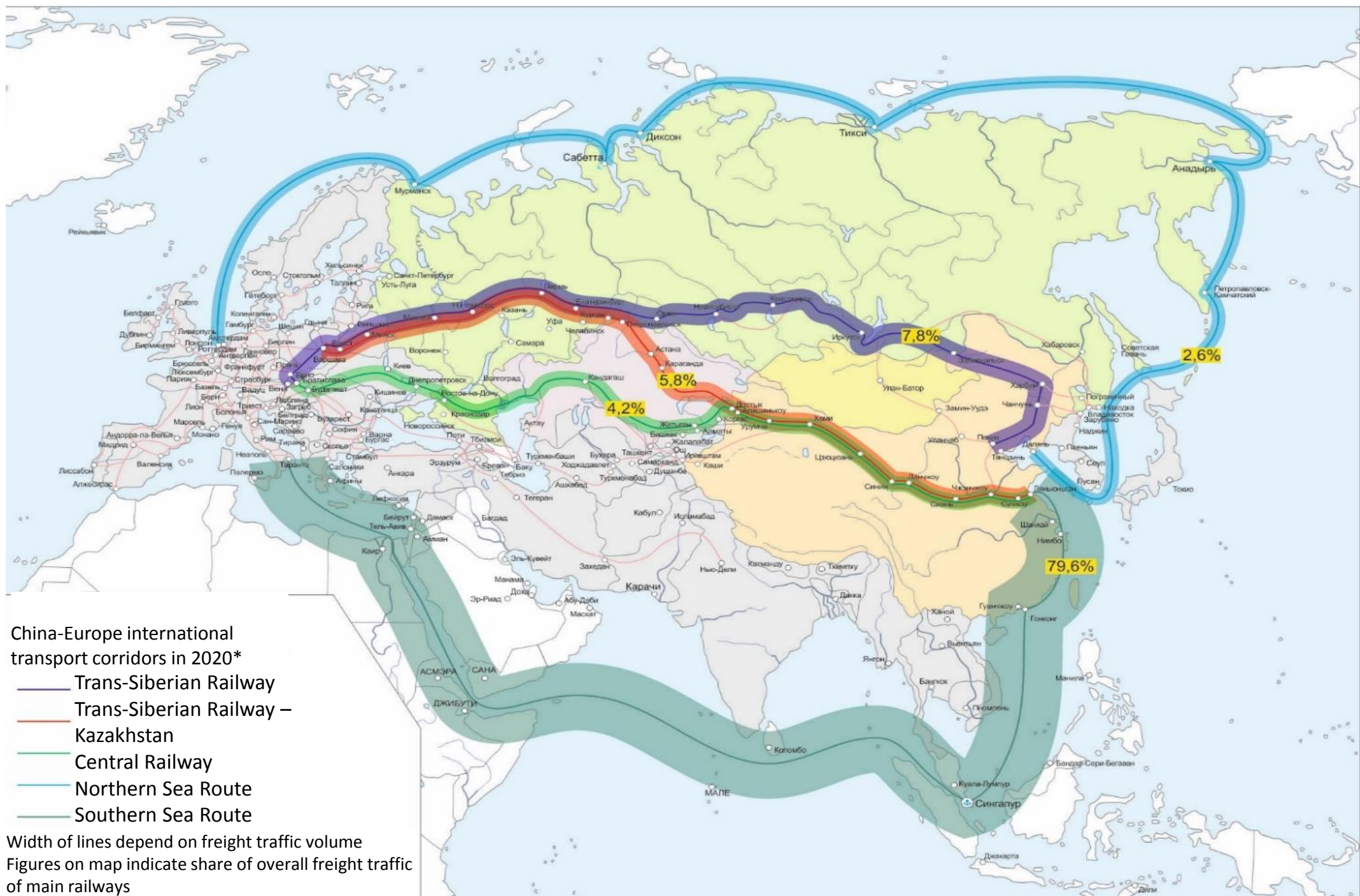
TER Project Manager

Trans-Siberian Infrastructure's Resilience

**UNECE and EUSDR PA1b
WORKSHOP**

How to develop resilient infrastructure (Global SDG 9)

Thursday and Friday, 16-17 November 2017
Ljubljana, Slovenia



China-Europe international transport corridors in 2020*

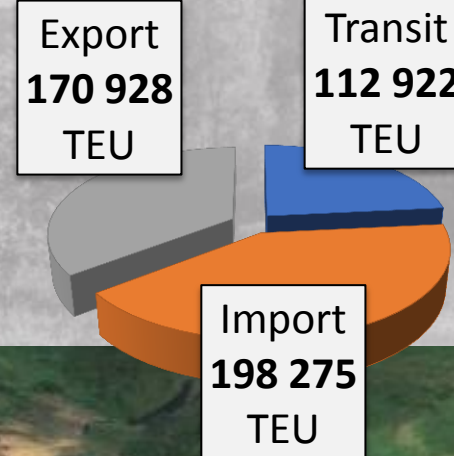
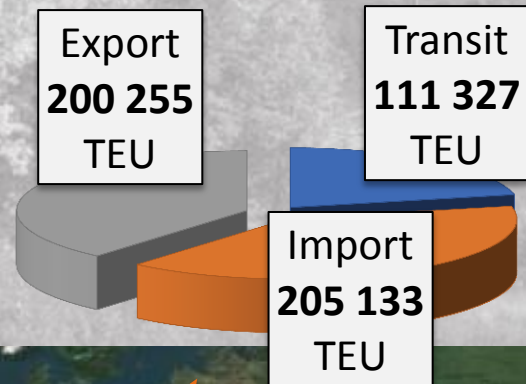
- Trans-Siberian Railway
- Trans-Siberian Railway – Kazakhstan
- Central Railway
- Northern Sea Route
- Southern Sea Route

Width of lines depend on freight traffic volume
 Figures on map indicate share of overall freight traffic of main railways

Freight volumes carried along the Trans-Siberian Railway

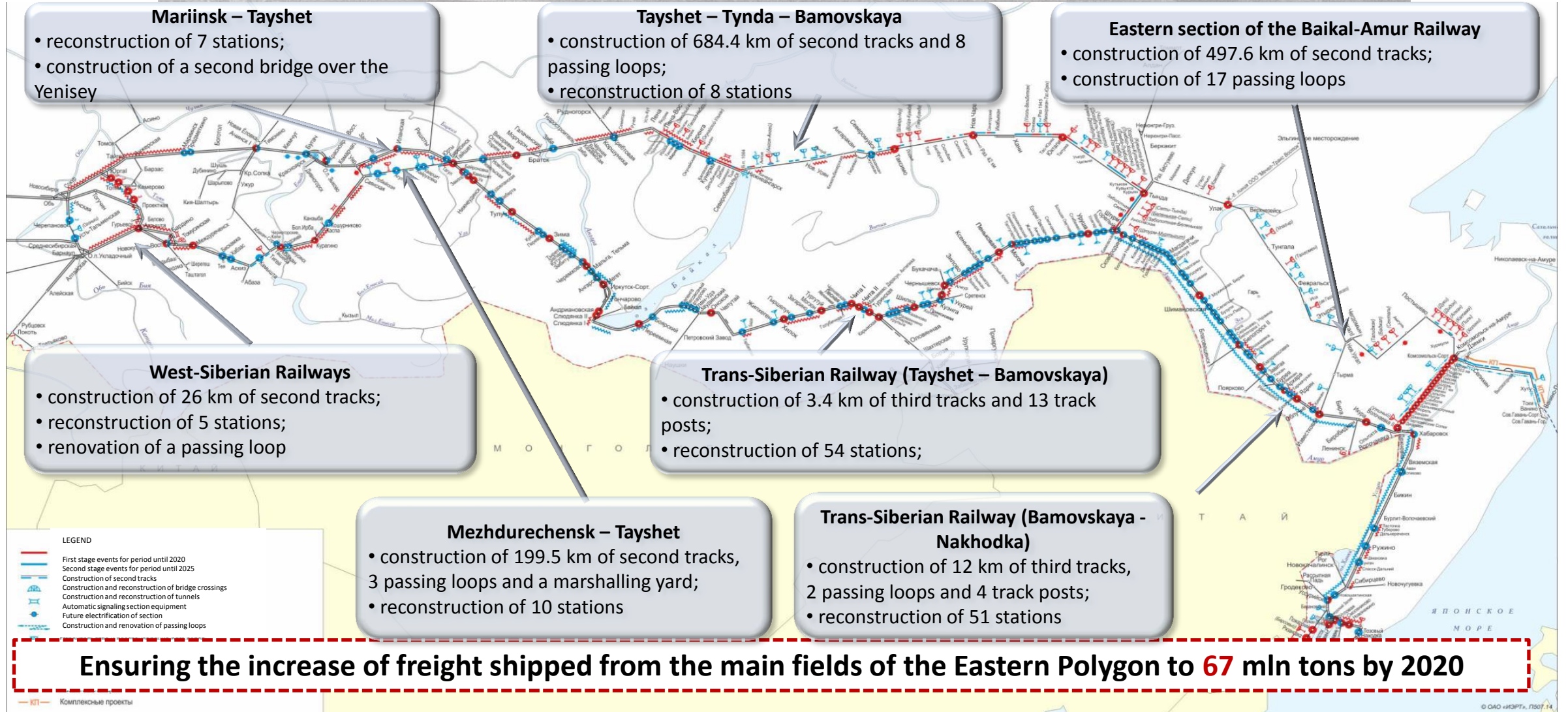
2016:
517 000 TEU (+2,5 %)

January-August 2017:
482 000 TEU (+51,3 %)

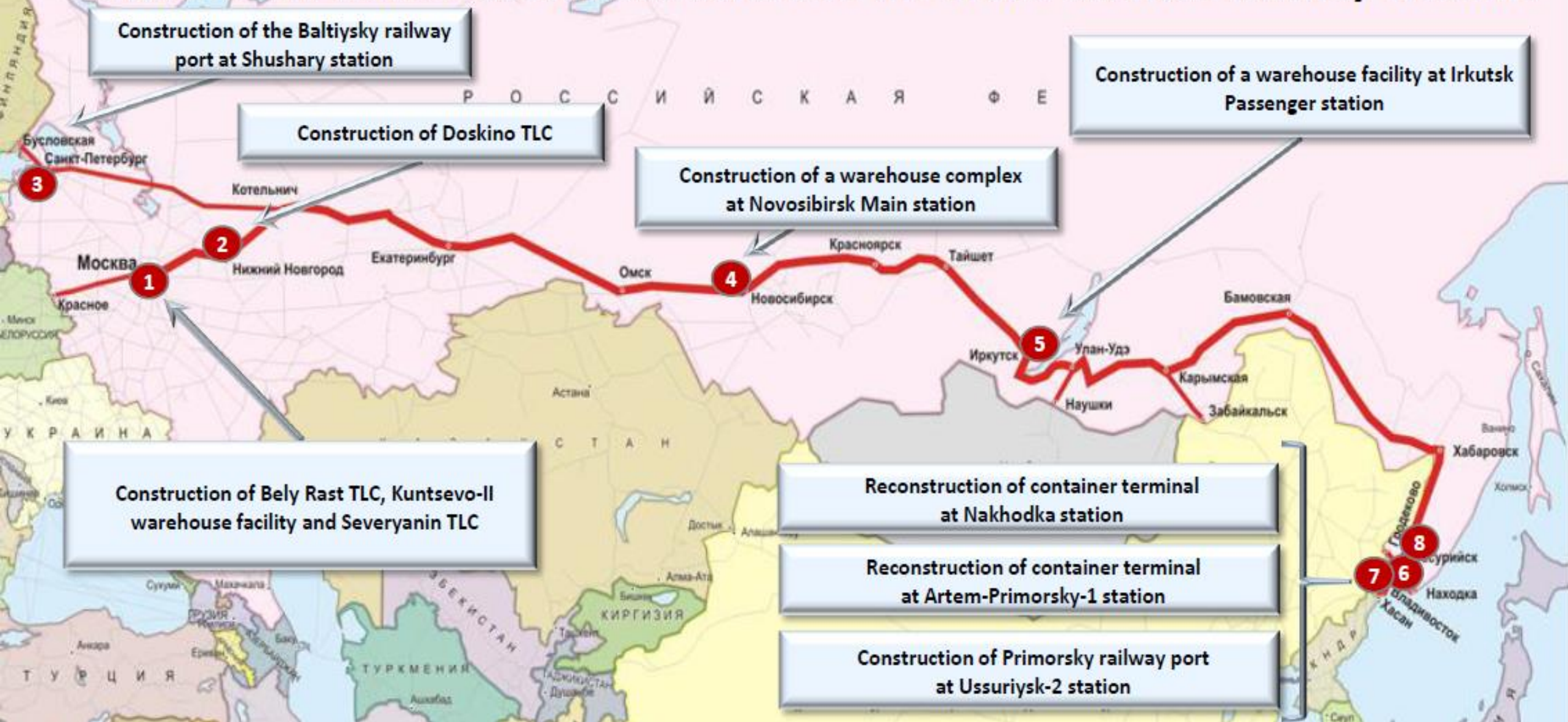


China – Europe: 65%
Europe – China: 35%

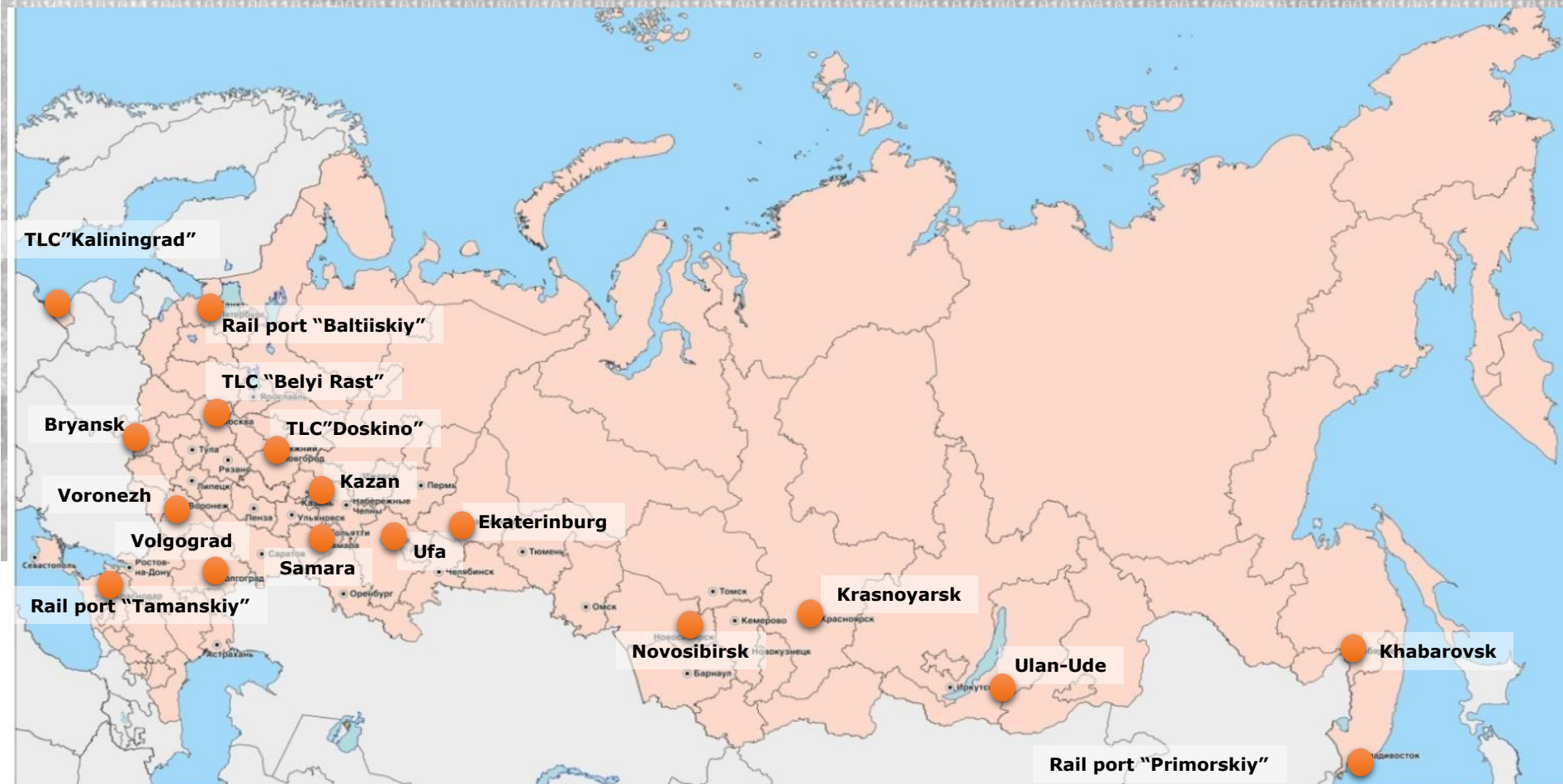
Development of Trans-Siberian and Baikal-Amur Mainlines



Terminal and warehouse infrastructure on the Trans-Siberian Railway Mainline



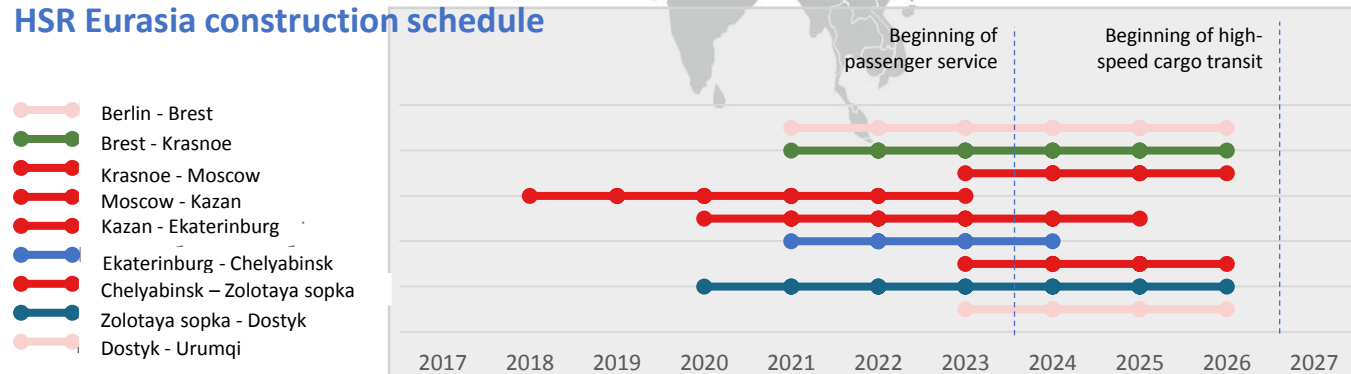
Establishing Integrated Network of Transport-Logistics Centers (TLCs)



High-Speed Freight Transport

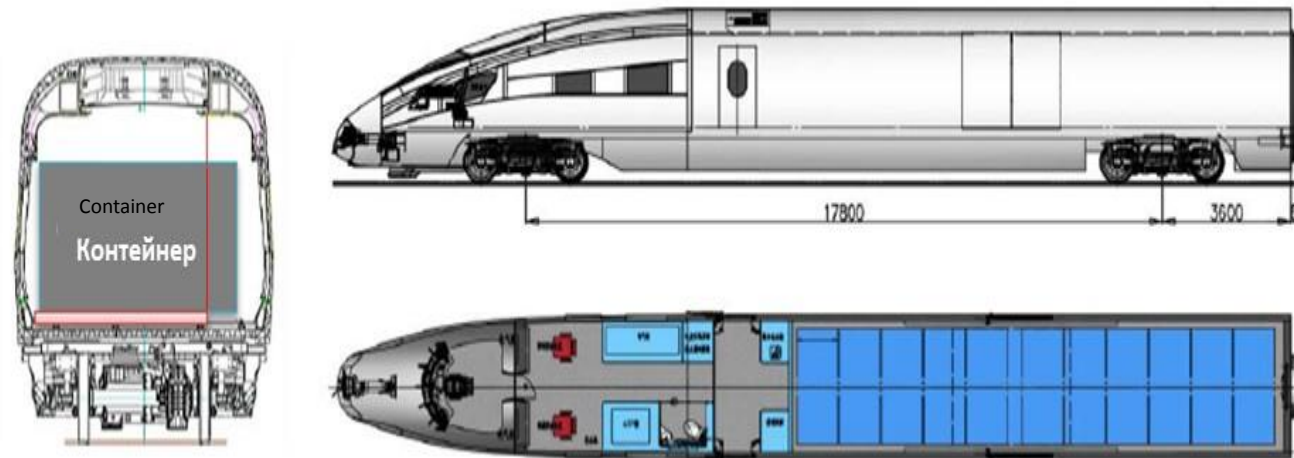


HSR Eurasia construction schedule



High-Speed Freight Transport

High-speed freight rolling stock



- ✓ Cargo allocation in special containers at freight hubs
- ✓ Convenient and efficient loading and unloading

- ✓ High-speed train:
 - 16 wagons
 - Speeds of up to 300 km/h
 - Payload of up to 600 tons

Moscow – Kazan – Yekaterinburg High-Speed Railway with Extension to Beijing

	Moscow	Kazan	Yekaterinburg	Chelyabinsk	Astana	Urumchi	Beijing	TOTAL
Distance, km	762	767	271	1,057	1,734	3,170		7,761
Travel time, hours	14.25	13.9	4.3	19.2	31.5	49		132.2
Travel time via HSR, hours	3.3	3.5	1.7	6.6	6.2	11.3		32.6



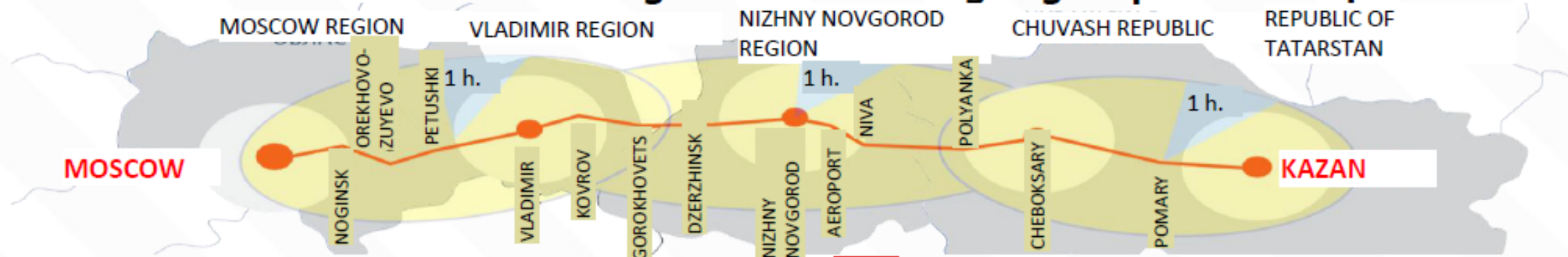
1,345
ENGINEERING STRUCTURES,
INCLUDING:

255
BRIDGES

223
TRESTLES

102
OVERPASSES

Moscow – Kazan HSR – the First Stage of Establishing High-Speed Transport



1 PROJECT DESCRIPTION

Promoting the mobilization of the workforce, creating prerequisites to stabilize demographic trends, increasing the mobility of the population and creating new jobs

The project is to be implemented using the Public-Private Partnership mechanism in the form of a private concession initiative.

Total investment (in the prices of the corresponding years)	RUB 1.289 trn
Concession period	40 years
Construction period	2017 – 2022
Project efficiency indicators (in the prices of the corresponding years)	
Subsidy repayment/debt obligation servicing (2022-2037)	RUB 789.4 bln
Net present value	RUB 226.5 bln
Discounted payback period	32.5 years
Budget efficiency (first 12 years of operation in 2016 prices)	
Total GRP growth	RUB 7.1 trn
Consolidated budget revenue growth	RUB 2.3 trn

2 FINANCING STRUCTURE

Source	Amount
Equity capital	254.0
Loans from the Development Bank of China	400.0
NPF funds	90.0
Infrastructure bonds	140.0
Loans from development banks	100.0
Commercial loans	304.9
Total	1,288.9

3 CURRENT STATUS

- The project is being implemented in accordance with the network schedule of events approved by Decree No. 5-r of the Russian Government dated January 13th, 2016
- At present, design is under way, matters concerning the construction of rolling stock are being resolved and work to raise financing is in progress

Innovative Rolling Stock

Growth of network carrying capacity
8-15%



Reduction of the locomotive traction costs



Reduction of the impact on the track



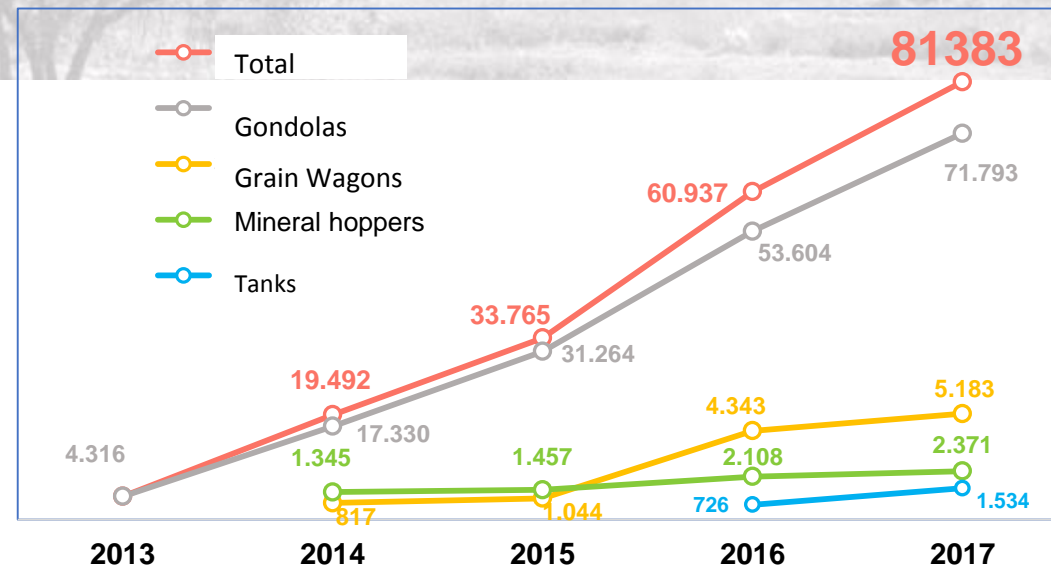
Reduction of the wagon maintenance costs



Overall dimensions of wagons 1-BM
Unhindered loading and unloading throughout the network

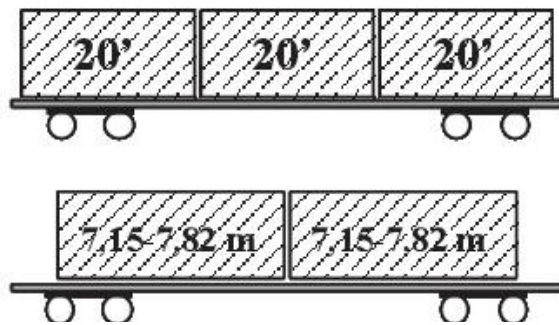


Innovative park growth rates
on the network of the JSC "Russian Railways"



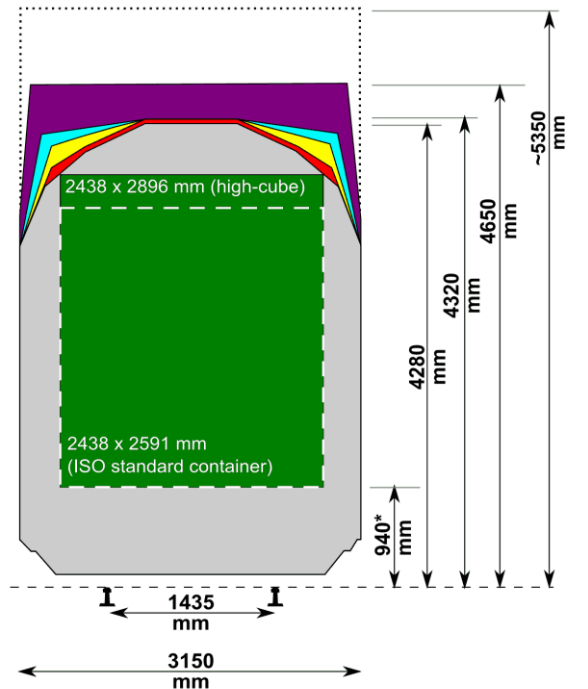
Challenges in Trans-Eurasian Rail Network

Today – loading length ca. 19 m



Loading gauge
Sagoma

UIC



* 940 mm: standard flat deck wagon

- Width of tracks
- Length of trains
- Accepted Loading gauge
- Lines capacity
- Requirement for efficient, polyvalent and flexible intermodal terminals
- Reduction of environmental impact
- Harmonization and simplification of administrative formalities and social legislation
- Lack of unified operation management and tracking (through ITS) system
- Rolling stock adaptation

Eurasian Transportations via Trans-Siberian Mainline





Thank you for your attention!