

INFRASTRUCTURE
ECONOMICS
CENTRE

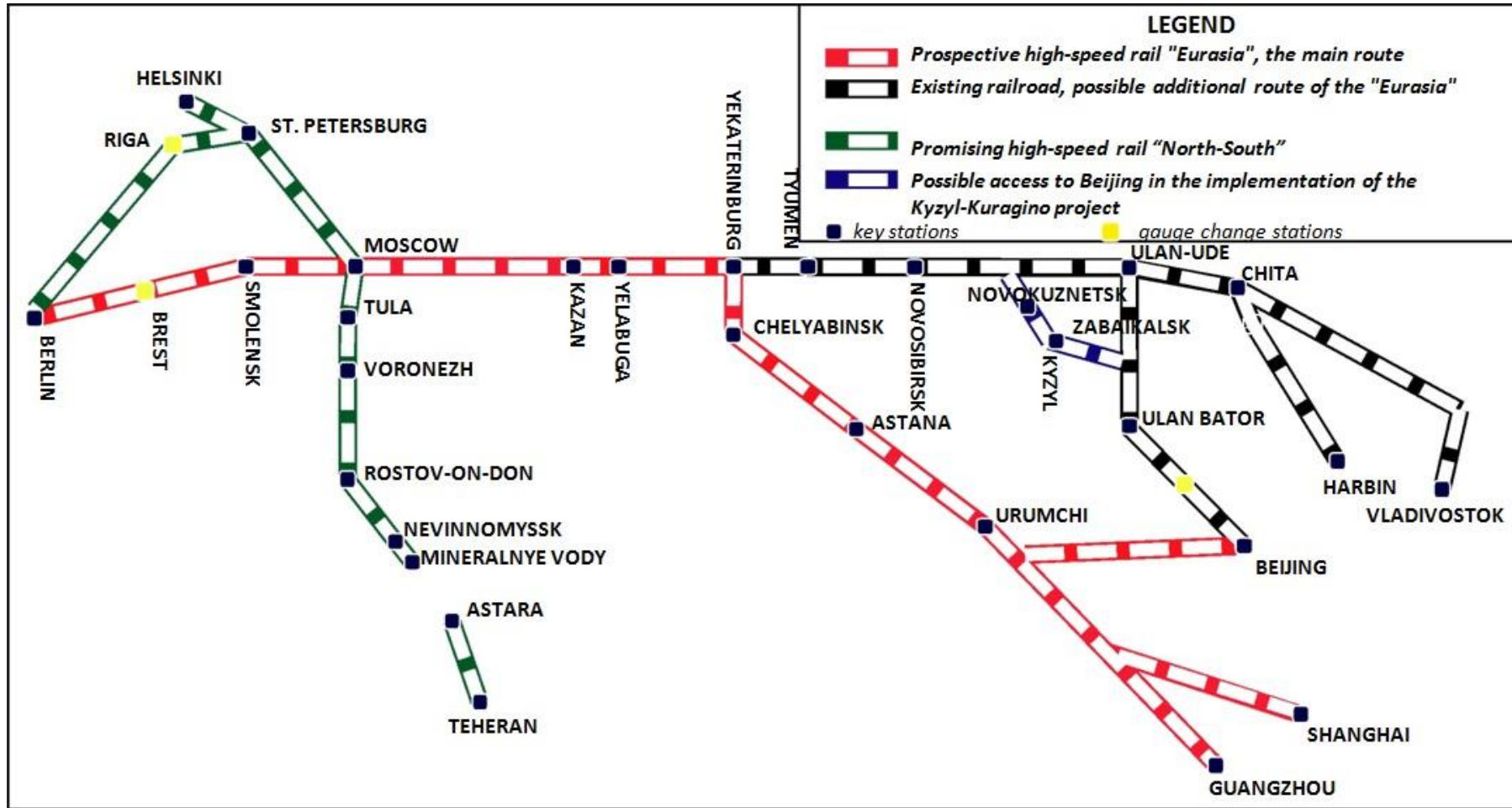
HSR “EURASIA”

A FUTURE OF EU-EAEU-CHINA COOPERATION IN TRADE AND RAILWAY TRANSPORT

Vladimir Kosoy



CREATION OF HIGH-SPEED FREIGHT-PASSENGER RAILWAY VIA RUSSIA

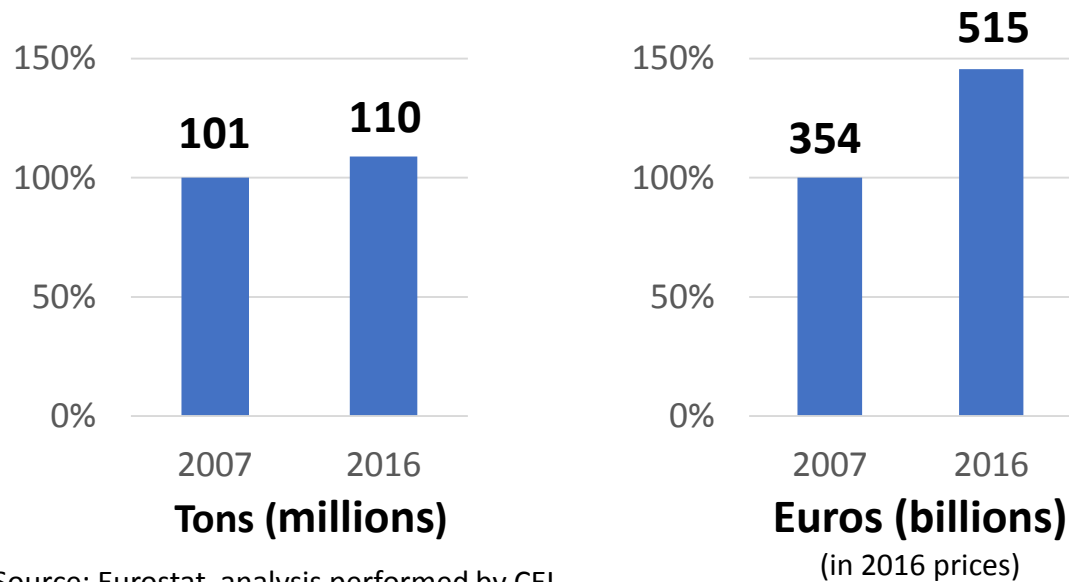


- The corridor shall be created step by step. "Moscow-Kazan" high-speed trunk line will be the first stage
- Prior to creation of the whole transit corridor, the existing infrastructure can be used
- The greatest efficiency for the concession participant will be given by freight traffic. For the state – passenger traffic

	Demand, mln tons	Capacity mln tons
2020 by existing infrastructure (based on forwarders' interviews)	2,4	< 1,4
2035 by new freight-passenger HSR line (modelling)	5 - 6	> 10

MAIN TRENDS IN FREIGHT TRANSPORT BETWEEN CHINA AND THE EU FOR THE PAST 10 YEARS

Over this 10-year period, trading has increased 9% by weight and 46% by value



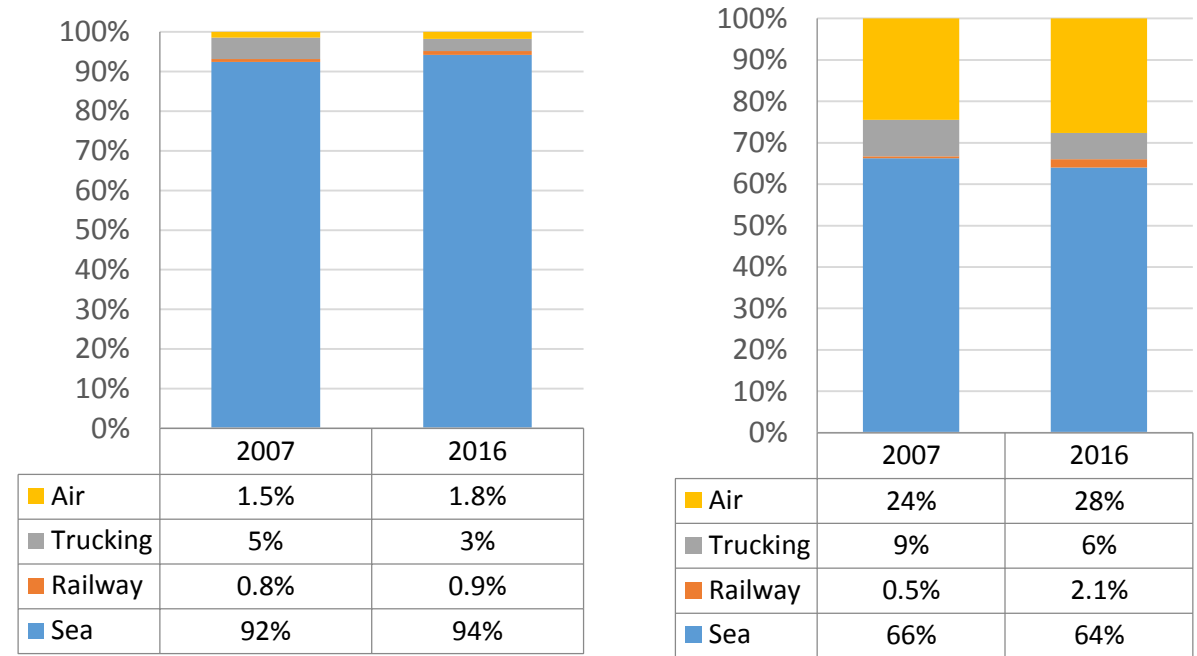
Source: Eurostat, analysis performed by CEI

Rail transport has begun to occupy the middle competitive niche between aviation and shipping

Euro/kg (in 2016 prices)	2007	2016	2016/07
Shipping	2,4	3,1	131%
Railroad	2,1	10,1	481%
Trucking	5,4	9,3	172%
Air transport	54,8	70,7	129%

Source: Eurostat, analysis performed by CEI

In the composition of all freight transport between China and the EU, railroad accounts for the smallest percentage, yet shows the fastest growth



Composition by weight

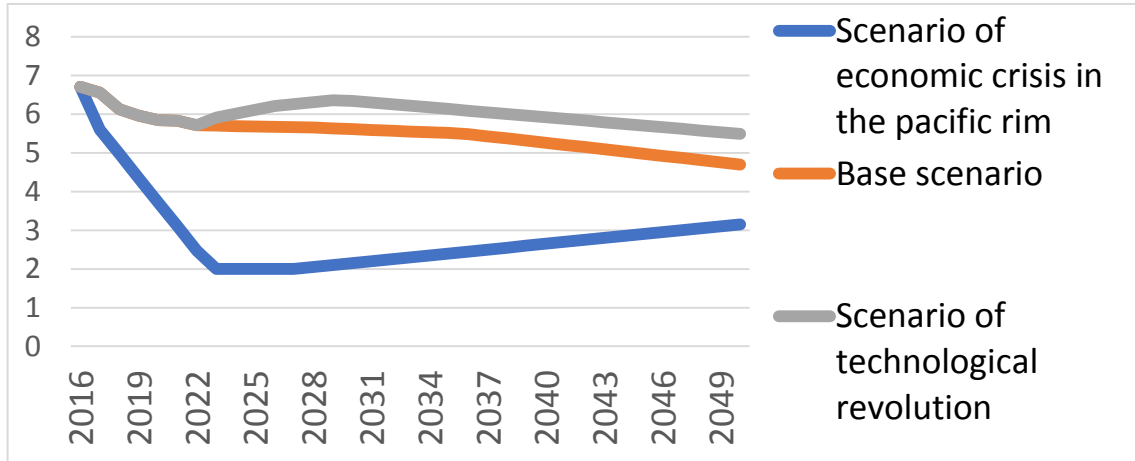
Composition by value

Source: Eurostat, analysis performed by CEI

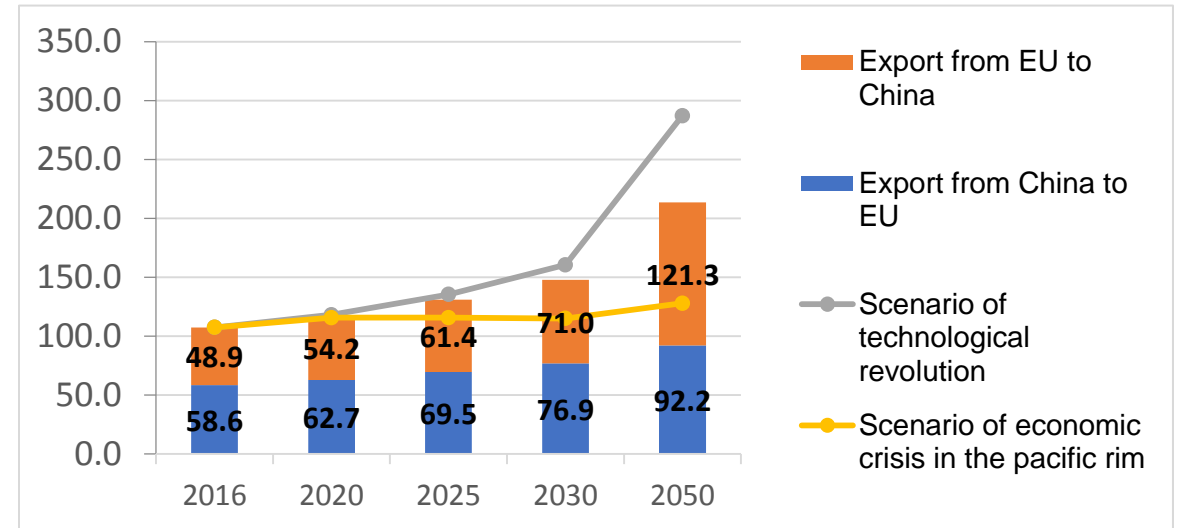
By value of goods transported, shipping has no monopoly. This fact only further highlights the potential demand for high-speed freight transport by rail.

LONG TERM FORECAST OF TRADE BETWEEN CHINA AND EU

Growth in % GDP to previous year



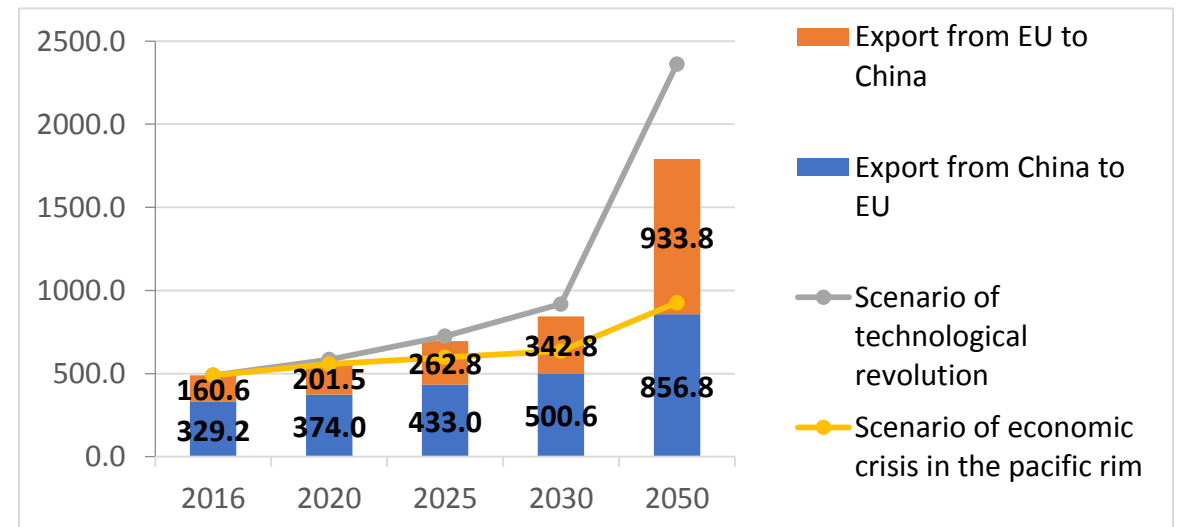
Dynamic trading scenario in thousands of tons



Source: calculations of IEC

- According to the volume of trade between China and the EU in the base year, by 2030 trade levels are expected to reach just under 150 million tons and 843 billion euro.
- In the event of crisis, trade is expected to be 30% lower. In the event of accelerated technologic progress, trade will increase by 10%.
- Exports in tons from the EU to China will exceed exports from China to the EU by 2020. The cost gap between exports from the EU to China and exports from China to the EU will gradually close.

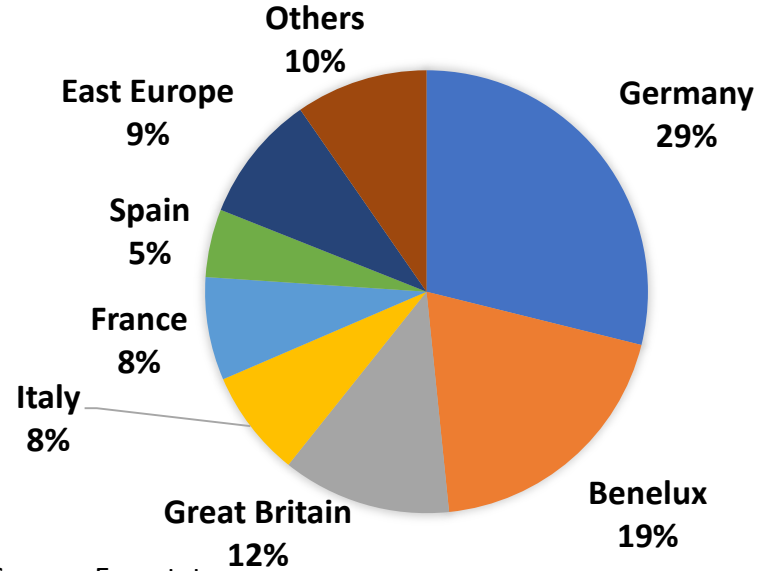
Dynamic trading scenario in millions of euro



Source: calculations of IEC

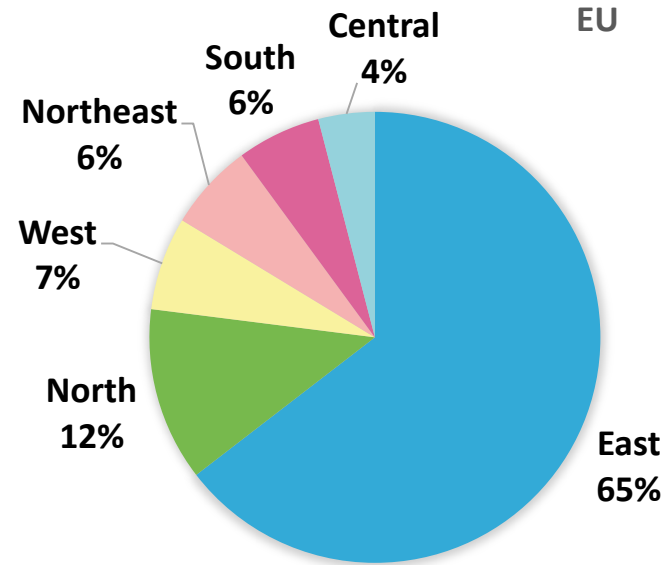
THE GEOGRAPHIC COMPOSITION OF TRADE BETWEEN EU COUNTRIES AND CHINA IS HIGHLY CENTRALIZED

CHINA'S MAIN TRADE PARTNERS IN THE EU



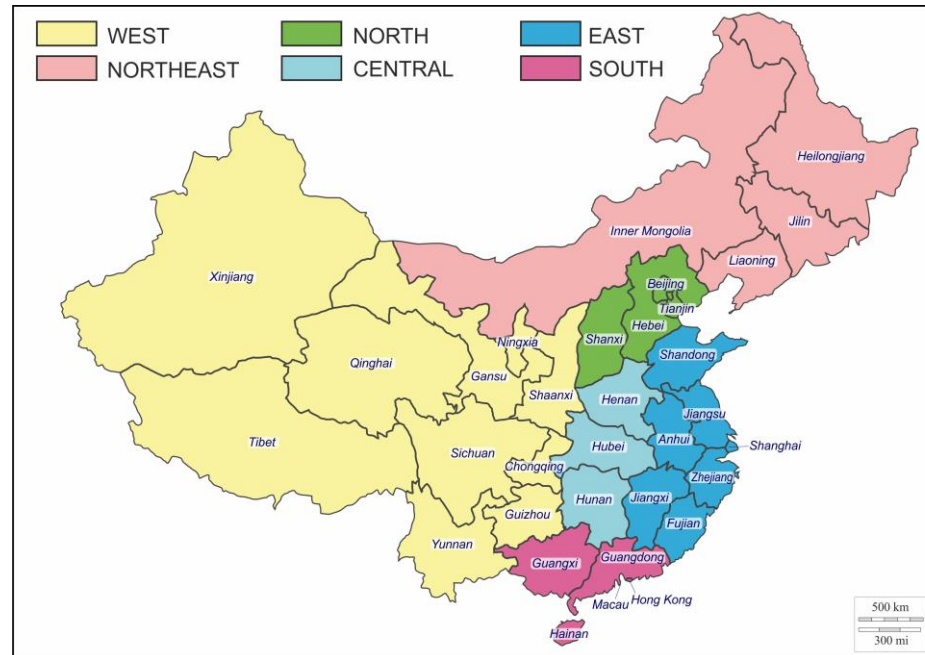
Source: Eurostat

THE SHARE OF THE MACROREGIONS OF CHINA IN TRADE WITH EU



Source: National Bureau of Statistics of China

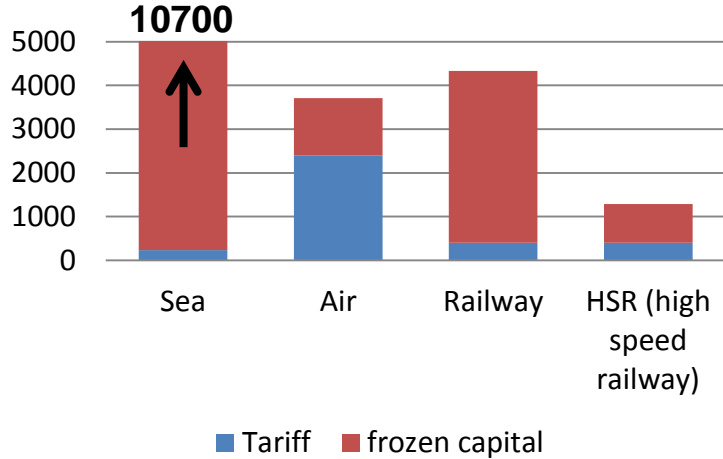
- Currently, routes between Germany/ Benelux and eastern China create the greatest demand for freight transport
- A significant proportion of imports from the EU is concentrated in the provinces near Beijing
- The largest center of online trading is concentrated in the provinces near Guangzhou
- The central and western provinces show the largest growth rates of exports



GENERAL TRANSPORTATION COSTS: THE INDICATOR OF COMPETITIVENESS

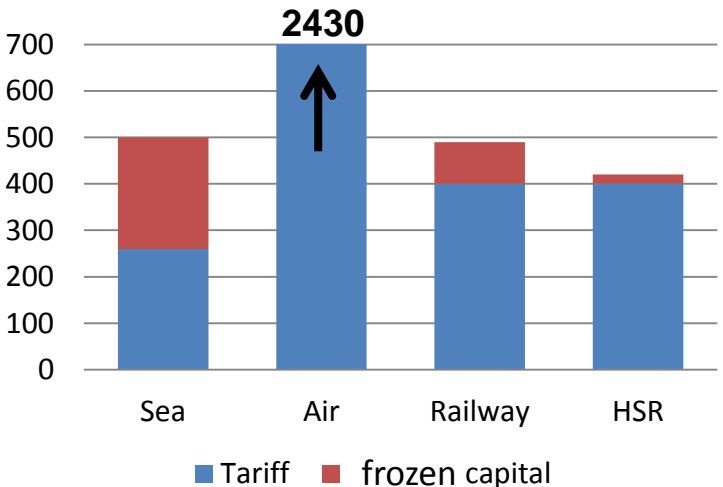
**GENERAL TRANSPORTATION COSTS =
tariff + inventory costs ("frozen" capital)**

iPhone 7

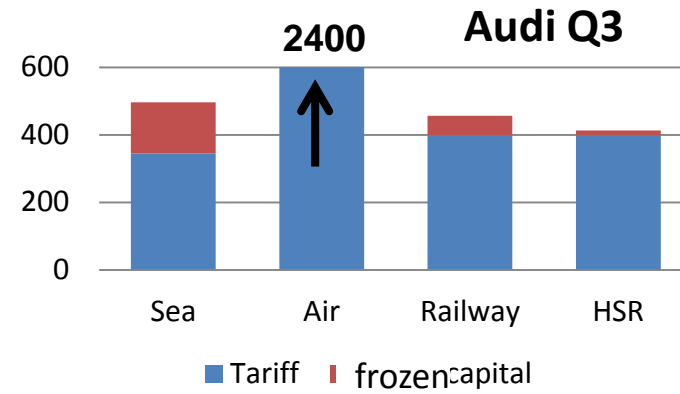


For the transport of expensive electronics, "classic" rail falls behind air transport. High-speed rail in this sector occupies the leading position.

Jeans

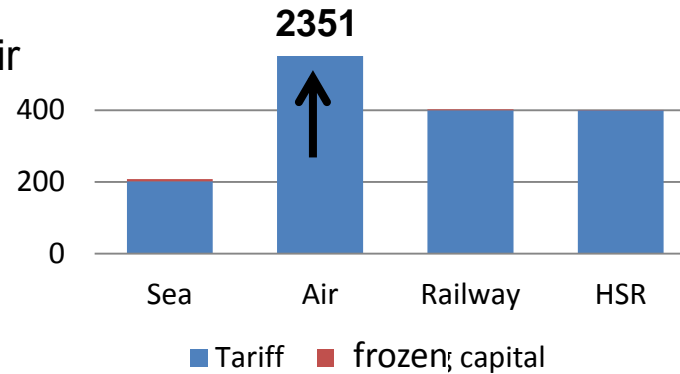


When the necessary conditions are met for transport, even 'classic' rail can compete with sea shipping in the medium-priced clothing sector



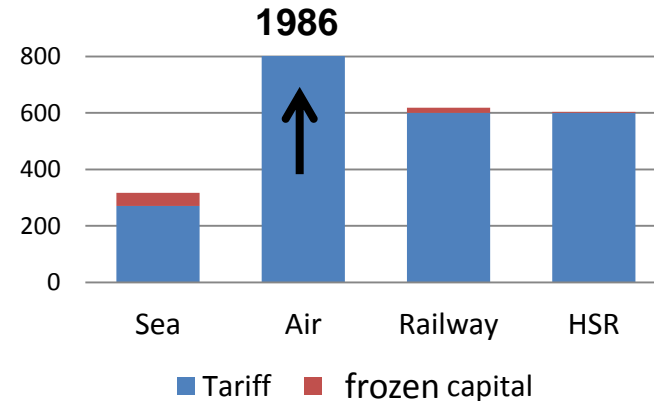
For the transport of automobiles and automobile components, 'classic' rail can also be competitive with sea shipping

Angle iron



For the transport of metal construction materials neither classic rail nor high-speed rail can compete with sea shipping

Cheeses



In the transport of food stuffs, high-speed rail can only compete with air transport

RUSSIAN IMPORT CAN BE A KEYSTONE FOR EURASIAN RAILWAY TRANSIT CONCERNING DISPROPORTIONS IN EU-CHINA TRADE

Modelling of modal shift of freight flows to speed trains

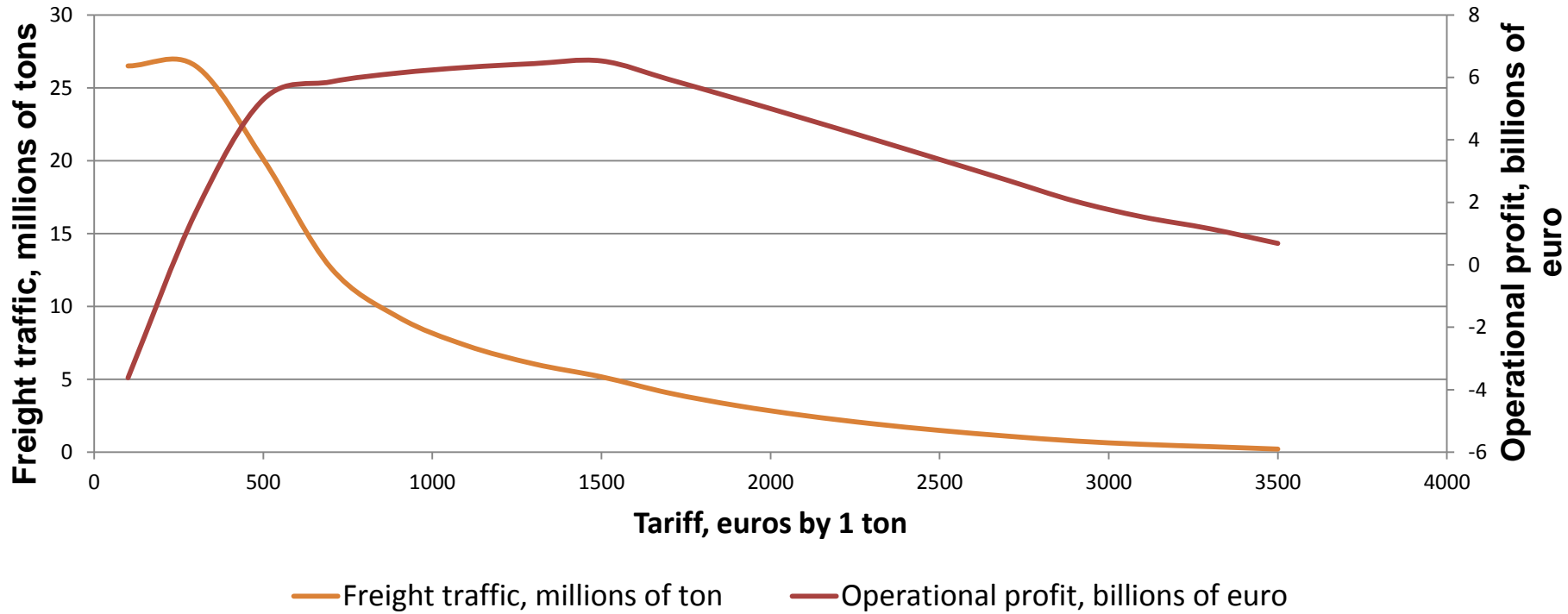
WESTBOUND	1000 Tons	BLN Euro	EASTBOUND	MLN Tons	BLN Euro
CN to FR	720	8	FR to CN	256	3
RU to FR	0,...	0,...	FR to RU	405	5
TOTAL	720	8	TOTAL	661	8

If scheduled freight trains would carry European export not only to China but also to Russia Westbound and Eastbound demand will be equalized at least on the half distance to China

POTENTIAL LEVELS OF TRANSPORT WITH HIGH-SPEED RAIL “EURASIA”

Indicators of economic efficiency of the Project

The most optimal weighted-average tariff is within the 1300-1600 euro per ton range. For freight traffic, the optimal level is within 5 to 10 million tons with profit between 6,4 – 6,5 billion euro



NPV of the Project, trillions rub. **25,8**

IRR of the Project, % **5,2**

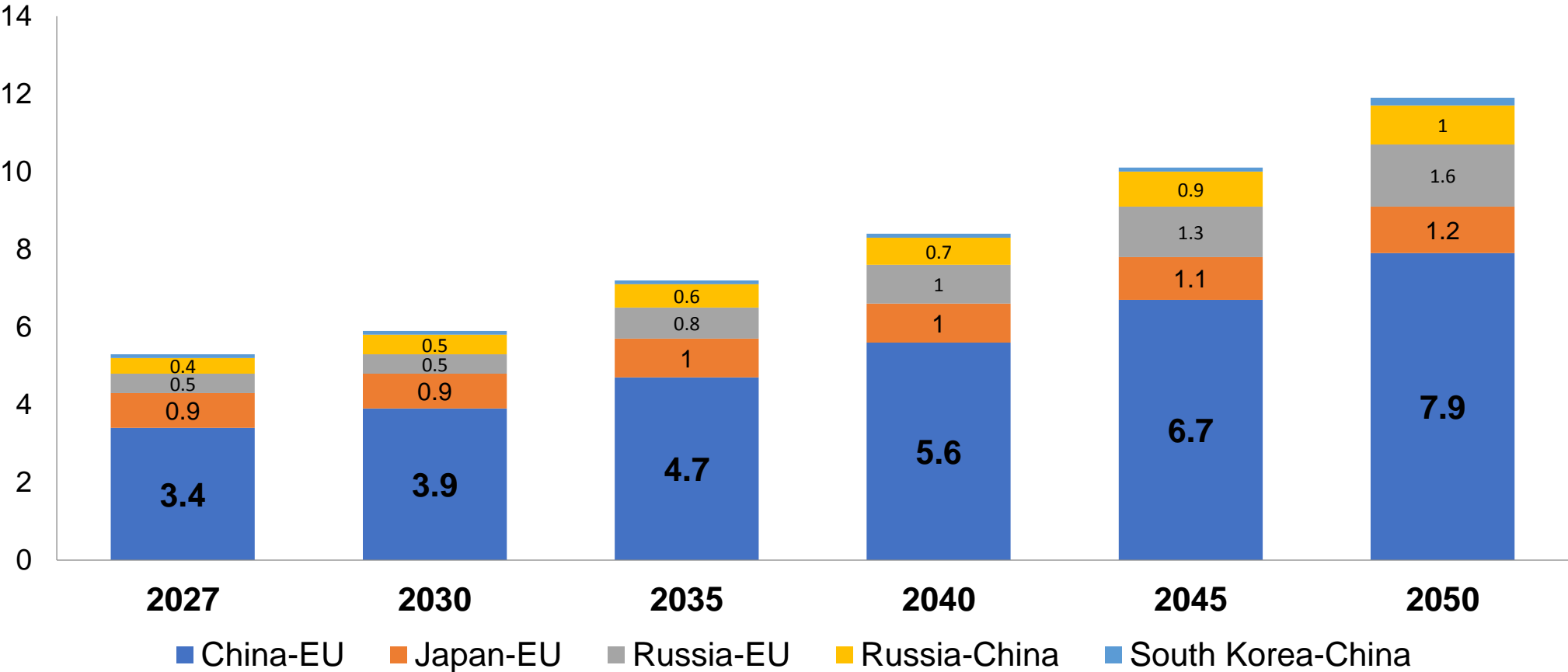
PBP of the Project, years **23,6**

Source: calculations of PwC

Source: calculations of IEC

THE CAPACITY OF FREIGHT TRANSPORT BY HSR «EURASIA CAN INCREASED WITH 5.3 MLN TONS IN 2027 TO 11.9 MLN TONS IN 2050

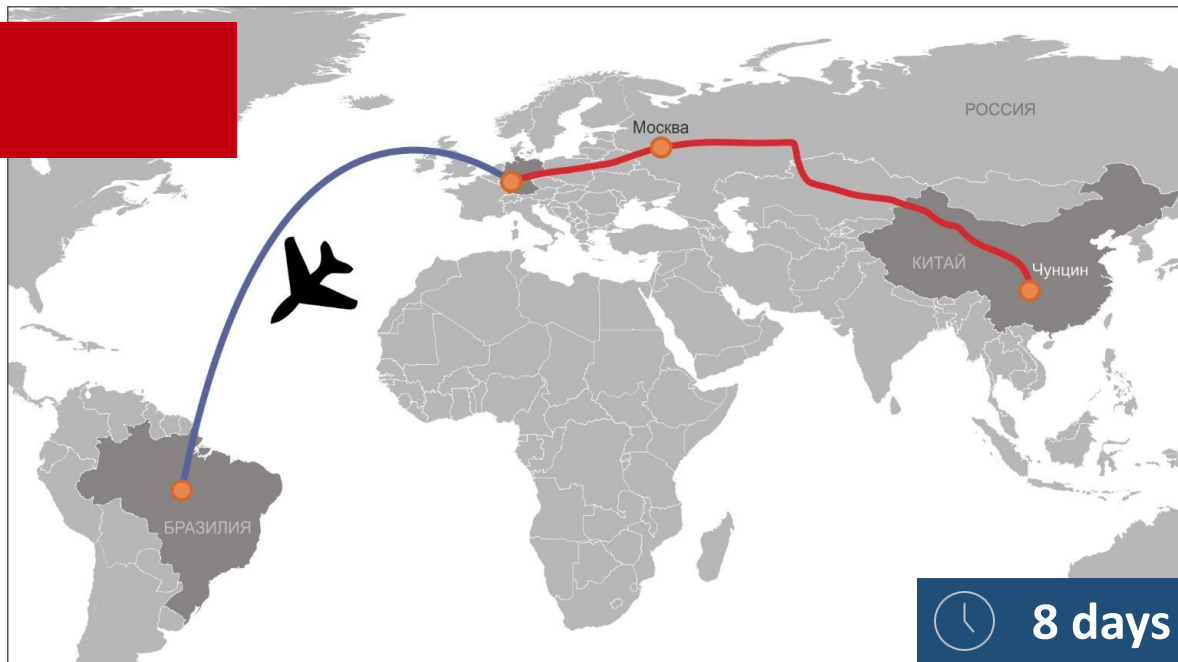
Forecast of freight transport by HSR «Eurasia» on the directions, mln tons



Source: calculations of PwC

OTHER GLOBAL TRADE ROUTES WHICH CAN INCLUDE HSR "EURASIA" CAN ENHANCE GROWTH OF EUROPEAN TRADE

CHINA –
BRAZIL



INDIA –
EUROPE



HARBIN –
IRAN



KOREA – EUROPE,
KOREA – IRAN



NECESSARY CONDITIONS FOR LONG-TERM FUTURE GROWTH IN RAIL TRANSIT (ACCORDING TO INTERVIEWS CONDUCTED WITH FREIGHTING AND SHIPPING COMPANIES)

1. Provision of basic conveniences , the absence of which causes freighters to turn down the benefits of rail transport, such as optimal correlation of prices and delivery times

Transparency

- One window of control for the entire freighting process
- Simplification of tariff system
- Electronic documentation

Reliability

- Trains which follow tight schedules and accurately
- Online monitoring of the condition of the freight. Monitoring of the terms of transportation. Ability to inform the client of the status of transit online

Diversity

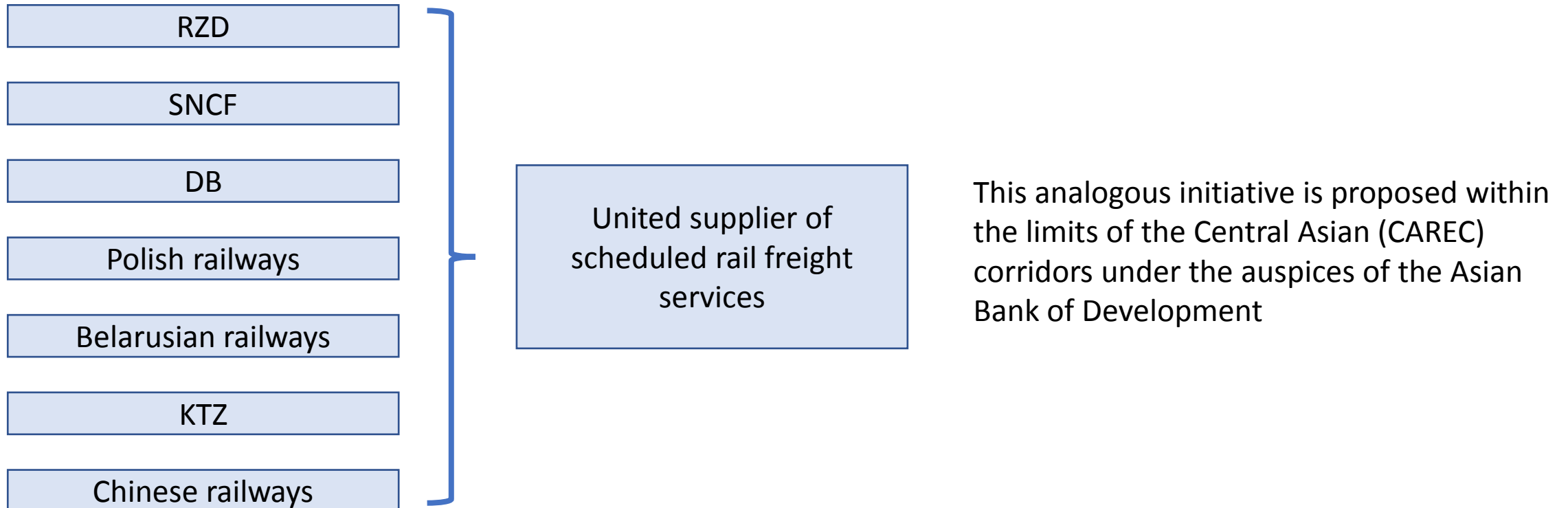
- Diversity of the types of containers- shipping containers, refrigerated, isothermal, air and sea containers
- Diversity of services (mail/ freight, from door to door, between stations, 4PL, etc.)

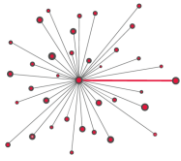
2. Active communicable politics directed towards promoting rail as an optimal alternative to other forms of transport, considering joint transportation expenditures for freight handlers

Now logistics companies do not offer transit by rail, as they do not assess customer costs, associated with negotiable lending

ONE WINDOW- IMPLEMENTATION OF FREIGHT TRANSPORT BETWEEN EU, RUSSIA, CENTRAL ASIA AND CHINA

Formation of a international consortium for organizing container-based (and potentially high-speed) freight transit, transparent tariff on freight, and the provision of accelerated, punctual train traffic.





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